



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

November 17, 2022

**ACTION MEMORANDUM**

**SUBJECT:** Approval and Funding for a Removal Action at the Watkins Road Drum Site, Loudon, Loudon County, Tennessee

**FROM:** Terry Stilman, On-Scene Coordinator  
Emergency Response, Removal, Prevention and Preparedness Branch

**THRU:** James W. Webster, Ph.D., Chief **MATTHEW TAYLOR**  
Emergency Response, Removal, Prevention and Preparedness Branch

Digitally signed by  
MATTHEW TAYLOR  
Date: 2022.11.28 14:59:21  
-05'00'

**TO:** Carol J. Monell, Director  
Superfund & Emergency Management Division

**I. PURPOSE**

The purpose of this Action Memorandum is to request and document the approval of the proposed Time-Critical Removal Action described herein for the Watkins Road Drum Site (the Site) located at 3530 and 3599 Watkins Road, Loudon, Loudon County, Tennessee. The release or threat of release of hazardous substances at the Site poses a threat to public health and the environment pursuant to Section 104(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9604(a), that meets the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Section 300.415(b)(2) criteria for removal actions. The Site is being used to store drums of hazardous substances in deteriorating condition. The total project ceiling for this time-critical removal action, if approved, will be \$1,945,578.

**II. SITE CONDITIONS AND BACKGROUND**

CERCLIS ID: TNN000420302  
Site ID Number: C4I7  
Removal Category: Time-Critical Removal

**A. Site Description.** The Site consists of two parcels of land (17.94 acres and 1.02 acre) currently being used as residential and agricultural property. Approximately 980 pallets of 55-gallon drums (an estimated 3,920 drums) are stored at the Site, many of which are in poor condition.

## **1. Removal Site Evaluation**

Based on the continued presence of the drums, many in poor condition, the Tennessee Department of Environmental Control (TDEC)'s referred the Site to the U.S. Environmental Protection Agency's Superfund program on February 9, 2021. In February 2021, the U.S. Environmental Protection Agency contacted the property owner to obtain access to sample the drums. Access was not granted. On July 15, 2021, TDEC was able to obtain soil and drum samples from the Site. The sample results revealed that CERCLA hazardous substances were in the soil and the contents of the drums.

The following CERCLA hazardous substances were detected by TDEC in the contents of the drums at the Site: arsenic, selenium, benzene, ethylbenzene, toluene and cyanide.

The following CERCLA hazardous substances were detected in the soil by TDEC at the Site: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, thallium, zinc, mercury, benzene, toluene, anthracene, benzo(a) anthracene, benzo(b) fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, bis(2-ethylhexyl)phthalate, pyrene, phenol and cyanide.

On August 19, 2021, the property owner granted the EPA access to conduct a removal site inspection.

On October 25 and 26, 2022, the EPA conducted a removal site inspection. During the site inspection, the EPA and its contractors documented site conditions and collected samples. The EPA sampled both the drums and soil at the Site. Based on analysis of the drum samples, the EPA detected the following CERCLA hazardous substances at the Site: barium, chromium, copper, manganese, mercury and zinc.

The EPA detected concentrations of metals, 2-butanone, and acetone in soils at the Site.

Surface soil samples collected by TDEC and the EPA revealed no volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) or metals at concentrations above EPA's Residential Removal Management Levels (RMLs).

Material Safety Data Sheets (MSDS) for two of the drummed materials stored on the site (Union Carbide Epoxy Resin ERL-2258 and Union Carbide Epoxy Resin ERR-4205) indicate that the materials are eye and skin irritants and dermal sensitizers. Chemicals named in the MSDS include bis(2,3-epoxycyclopentyl) ether and diglycidylether of bisphenol A (bisphenol A diglycidyl ether). Combustion byproducts of the epoxy resins includes carbon monoxide.

## **2. Physical Location**

The Site is located at latitude 35.681111° N and longitude 84.320556° W. The drums are located at the following two addresses: 3530 Watkins Road, Loudon,

Loudon County, Tennessee 37774 and 3599 Watkins Road, Loudon, Loudon County, Tennessee 37774. The Site is directly accessible from Watkins Road.

### **3. Site Characteristics**

The Site is bordered by residential and agricultural properties. An unnamed tributary flows through the Site and discharges into Clear Prong Creek, which is located to the Southeast of the Site. Clear Prong Creek flows into Clear Prong Lake. The Site is unsecured and is bordered by residences, farmland, and open pastures to the north, east, and west and by open pastures to the south.

### **4. Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant**

Barium, chromium, copper, manganese, mercury, and zinc are hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14), and are listed as hazardous substances in 40 C.F.R Section 302.4. These substances were detected in unsecured drums at the Site, during the EPA's assessment.

Hazardous substances in unsecured drums of poor condition that may release at the Site present a potential threat to the public health and the environment. Many of the drums are deteriorating and are leaking onto the surrounding soil. Recent samples collected by TDEC and the EPA confirmed the presence of CERCLA hazardous substances in the drums and the soil surrounding the drums. Information from the original owner of the drums indicates that as much as three million pounds of epoxy resin is present in drums onsite. The Site is bordered by residential and agricultural properties in all directions. The EPA Region 4's Scientific Support Section has reviewed analytical results from the Site and has determined that given the proximity of residential properties to the drum storage areas, there is a potential for uncontrolled releases of a large volume of material to the environment that could present a risk to human health in the future if allowed to occur (attachment).

### **5. National Priorities List (NPL) Status**

The Site is not listed on the NPL and has not been proposed for the NPL or evaluated under the Hazardous Ranking System.

### **6. Maps, Pictures, and Other Graphic Representations**

Attached, Watkins Road Overhead Image.

## **B. Other Actions to Date**

### **1. Previous Actions**

As discussed more fully in subsection B (State and Local Authorities Roles), in June 2008 a private party filed a complaint through the EPA Region 4 concerning drums stored at the Site. The complaint was forwarded to the TDEC's Division of Solid Waste Management for initial follow-up. TDEC conducted an initial site visit on June 25, 2008. The site visit revealed many 55-gallon drums of material, reported to be epoxy resin, being stored in two barns.

TDEC conducted a follow-up site visit on September 18, 2009, to investigate the status of the drums. Following the TDEC follow-up site visit, TDEC issued a Notice of Violation, dated September 28, 2009, citing a failure to make a hazardous waste determination. TDEC received additional complaints in March 2017 and May 2020 concerning storage of the drums.

TDEC conducted a site visit on May 11, 2020, to determine the condition of the containers. TDEC estimated that there were 980 pallets with drums stacked two to three high at two separate locations. While the containers at the first location (3530 Watkins Road) remained inside a barn, the containers at the second location (3599 Watkins Road) were being stored outside (attached drum photo). TDEC issued a Notice of Violation for unlawful disposal of solid waste on July 13, 2020.

TDEC has performed multiple inspections from 2008 to 2021 to evaluate the regulatory status of the Site and to encourage the Site's owner/operator to remove the drummed waste from the Site.

The EPA performed a Site Inspection on October 25, 2021, to confirm the presence of materials previously observed and sampled by TDEC. As discussed above, the data from the sampling event documented the presence of hazardous substances.

## **2. Current Actions**

There are no current actions being taken by any party to address the threats posed by the Site.

## **C. State and Local Authorities' Roles**

### **1. State and Local Actions to Date**

Since the initial complaint was received in 2008, TDEC has inspected and conducted sampling of material at the Site. A TDEC-issued Notice of Violation in 2020 has not resulted in proper handling or removal of the drums. TDEC has also received additional complaints from area residents in March 2017 and May 2020 concerning storage of the drums.

Based on the continued presence of the drums, many in poor condition, TDEC referred the Site to the EPA's Superfund program on February 9, 2021.

### **2. Potential for Continued State/Local Response**

The State of Tennessee does not presently have resources or funds available to address a removal action at the Site.

### III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Hazardous substances including barium, chromium, copper, manganese, mercury, and zinc are present in drums at the Site, and pose the following threats or potential threats to public health or welfare as listed in 40 CFR Section 300.415(b)(2):

**300.415(b)(2)(i): Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants.**

Analytical results by the EPA and TDEC have confirmed the presence of CERCLA hazardous substances in the contents of the drums at the Site. Many of the drums have been compromised and continue to leak. The Site is in a residential area, and residents are at risk of exposure to the hazardous substances at the Site, through direct contact with the drums and/or the drums' contents as they continue to degrade. Given the proximity of residential properties to the drum storage areas, there is a potential for uncontrolled releases of a large volume of material to the environment that could present a risk to human health in the future if allowed to occur.

**300.415(b)(2)(iii): Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.**

There are an estimated 3,920 drums at the Site. Many of these drums are already in very poor condition and are leaking. The drums may continue to deteriorate and may release CERCLA hazardous substances into the environment.

**300.415(b)(2)(v): Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.**

A large number of the drums being stored at the Site are stored outside and are exposed to weather conditions. The barn being used to store some of the drums is damaged and open to the environment. CERCLA hazardous substances have already been detected in the soils at the Site. Weather conditions will continue to deteriorate the drums that may cause further releases of hazardous substances at the Site.

**300.415(b)(2)(vii): The availability of other appropriate federal or state response mechanisms to respond to the release.**

There are no other federal or state agencies available to respond. The State of Tennessee has indicated that it lacks the resources necessary to address the threat and has requested the EPA's assistance with the removal action at the Site.

### IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare or the environment.

## V. PROPOSED ACTIONS AND ESTIMATED COSTS

### A. Proposed Actions

#### 1. Proposed Action Description

The following actions will be implemented by the EPA under the scope of this Action Memorandum:

- Mobilize personnel and equipment to the Site.
- Stabilize and prepare for off-site disposal of drummed and spilled hazardous substances.
- Conduct sampling and analysis to prepare for off-site disposal.
- Treat, to the extent practicable, liquid and sludge wastes prior to transportation and disposal.
- Transport and dispose of solid and liquid hazardous waste to an approved off-site disposal facility.

#### 2. Contribution to Remedial Performance

The scope of this proposed action is to address the threats discussed in Section III, which meet the 40 C.F.R Section 300.415(b)(2) removal criteria. The removal action will, to the extent practicable, be consistent with any future remedial action.

#### 3. Engineering Evaluation/Cost Analysis (EE/CA)

This proposed action is time-critical and does not require an EE/CA.

#### 4. Applicable or Relevant and Appropriate Requirements (ARAR)

In accordance with the NCP at 40 CFR Section 300.415(j), on-site removal actions conducted under CERCLA are required to attain ARARs to the extent practicable considering the exigencies of the situation or provide grounds for invoking a waiver under Section 121(d)(4) of CERCLA. In determining whether compliance with ARARs is practicable, the lead agency may consider appropriate factors, including (1) the urgency of the situation; and (2) scope of the removal action to be conducted. Additionally, under 40 CFR Section 300.400(g)(3), other advisories, criteria or guidance may also be considered (so-called To-Be-Considered or TBC) when conducting the removal action. The site-specific ARARs and TBC for this time-critical removal action, which the EPA deems compliance practicable, are described below.

ARARs include only federal and state environmental or facility siting laws/regulations and do not include occupational safety or worker protection requirements. Compliance with OSHA standards is required by 40 CFR

Section 300.150. ARARs are typically divided into three categories: (1) chemical-specific; (2) location-specific; and (3) action-specific.

Under CERCLA Section 121(e)(1), federal, state, or local permits are not required for the portion of any removal or remedial action conducted entirely on-site as defined in 40 CFR Section 300.5. See also 40 CFR Section 300.400(e)(1) and (2). On-site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. On-site response actions must comply, to the extent practicable, with substantive but not administrative requirements of ARARs. Off-site activities such as transportation and disposal of wastes are required to comply with all applicable requirements, including the administrative portions.

The EPA sent an ARARs request letter to the State on August 24, 2022, for the purpose of identifying any ARARs which may have been created since the previous removal action. At this time, no response has been received from the State of Tennessee. The OSC will continue to coordinate with State Officials and will evaluate all identified ARARs in accordance with the NCP.

Though not an ARAR, as provided in CERCLA Section 121(d)(3) and the Off-site Rule at 40 CFR Section 300.400 et seq., the off-site transfer of any hazardous substance, pollutant or contaminant generated during the response action will be sent to a treatment, storage or disposal facility that is in compliance with applicable federal and state laws and has been approved by the EPA for acceptance of CERCLA waste.

## **5. Projected Schedule**

Response actions at the Site will be initiated within six months of approval of this Action Memorandum. While the proposed removal activities are expected to be completed within ten weeks of initiation of on-Site activities, a period of up to six months will be necessary to provide sufficient pre-mobilization planning, arrange for disposal, compensate for weather-related or other delays, and complete demobilization activities. All actions are expected to be completed within six months of mobilization.

**B. Estimated Costs**

<b><i>Extramural Costs:</i></b>	<b><i>Proposed Ceiling</i></b>
<u>Regional Allowance Costs:</u>	
ERRS	\$1,521,315
START	\$100,000
<u>Subtotal, Extramural Costs:</u>	\$1,621,315
20% Contingency	\$324,263
<b>TOTAL EXTRAMURAL COSTS:</b>	<b>\$1,945,578</b>

**VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

If this response action is significantly delayed or not taken, ongoing exposure of the public will continue.

**VII. OUTSTANDING POLICY ISSUES**

No outstanding policy issues have been determined at this time.

**VIII. ENFORCEMENT**

Enforcement activities have been initiated and are ongoing. See Attachment, "Enforcement Confidential Addendum," for more detailed information.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be **\$3,518,943** using the following formula<sup>1</sup>:

Direct Costs	Total Extramural Costs	\$	\$1,945,578
	+ Total Intramural Costs	\$	\$110,000
	Total Direct Costs	\$	\$2,055,578
+ Indirect Costs	+ 71.19%	\$	\$1,463,365
	<b>Total EPA Costs</b>	<b>\$</b>	<b>\$3,518,943</b>

**IX. RECOMMENDATION**

- 
1. Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.




This decision document represents the selected removal action for the Watkins Road Drum Site, Loudon, Loudon County, Tennessee, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. The document is based on the administrative record for the Site.

Conditions at the Site meet the NCP Section 300.415 (b)(2) criteria for a time-critical removal action. This time-critical removal action is anticipated to be fund-lead with a total project ceiling of **\$1,945,578** funded through the Regional Removal Allowance.

APPROVED:

DISAPPROVED:

**RANDALL  
CHAFFINS**

 Digitally signed by RANDALL  
CHAFFINS  
Date: 2022.11.28 14:45:52  
-05'00'

DATE: \_\_\_\_\_

---

Carol J. Monell, Director  
Superfund & Emergency Management Division

Attachments:

Enforcement Confidential Memorandum  
EPA Scientific Support Section Memorandum  
Watkins Road Drum Photo  
Watkins Road Site Overhead Image

Note: Due to the CONFIDENTIAL nature of the material, the Enforcement Addendum has been withheld. Withheld material is available, for Judicial review only, at EPA Region 4, Atlanta, Georgia.



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 4**

**61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960**

April 14, 2022

**4SEMD-SSS**

**MEMORANDUM**

**SUBJECT:** Evaluation of Data from Watkins Road Drum Site

**FROM:** Tim Frederick, MPH, Chief  
Scientific Support Section  
Superfund and Emergency Management Division

**Tim  
Frederick**

Digitally signed by Tim  
Frederick  
Date: 2022.04.14 09:33:21  
-04'00'

**TO:** Brian Englert, On-Scene Coordinator  
Oil and Chemical Pollution Prevention Section  
Superfund and Emergency Management Division

Per your request, the Scientific Support Section has reviewed data related to the Watkins Road Drum Site contained in two documents:

- Sampling and Analytical Summary, Crawley Farm, July 2021 Sampling, August 2021 (TDEC)
- Removal Site Evaluation (RSE) Letter Report, Watkins Road Drum, February 2022 (EPA)

The reports indicate that over 3000 drums of epoxy resins are stored on two properties on Watkins Rd. in Loudon, Tennessee. Sampling in the 2021 TDEC report included samples of soil and drum contents. The RSE conducted for EPA in 2022 also included samples of drum liquid/sludge and soil.

The TDEC drum sample analysis detected concentrations of arsenic, selenium, benzene, ethylbenzene, toluene, and cyanide. The report notes that laboratory serial dilutions were necessary due to the concentrated nature of the drum contents.

The RSE drum samples analysis detected concentrations of barium, chromium, copper, manganese, mercury, zinc, and 4-nitroanaline. Serial dilutions of these samples were also necessary for analysis of these samples. Laboratory dilutions result in an increase in chemical

reporting limits. Additional contaminants may be present that had concentrations below the elevated reporting limits.

The TDEC soil samples analysis detected concentrations of metals, benzene, toluene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, bis(2-ethylhexyl)phthalate, pyrene, phenol, and cyanide. All detected contaminant concentrations in soil were below residential soil Removal Management Levels (RMLs).

The RSE soil samples analysis detected concentrations of metals, 2-butanone, and acetone. All detected contaminant concentrations on soil. Differences in analytical results between the two sampling events may be the result of differences in sampling locations, differences in materials (drums) samples, differences in analytical reporting limits, or other differences in sampling or analysis between the two events.

The available data suggest that releases from the drums have not resulted in current soil concentrations that are of concern to human health. However, there is a large volume of chemicals (~ 215,000 gallons) being stored in a negligent manner that could result in the eventual release of the chemicals to the environment. There is visual evidence that some releases have already occurred. Many of the drums are stored outdoors without protective cover, flooring, or containment.

The epoxy resins are flammable. Material Safety Data Sheets (MSDS) for two of the drummed materials stored on the site (Union Carbide Epoxy Resin ERL-2258 and Union Carbide Epoxy Resin ERR-4205) indicate that the materials are eye and skin irritants and dermal sensitizers. Chemicals named in the MSDS include bis(2,3-epoxycyclopentyl) ether and diglycidylether of bisphenol A (bisphenol A diglycidyl ether). Field Hazcat tests indicate that drum samples are flammable. Combustion byproducts of the epoxy resins includes carbon monoxide. Limited toxicological data is available for either chemical.

PubChem (<https://pubchem.ncbi.nlm.nih.gov/>) toxicity information for bis(2,3-epoxycyclopentyl) ether indicates that the chemical may be an animal carcinogen and may cause neurological effects in animal studies. Pubchem toxicity data for bisphenol A diglycidyl ether indicates that the chemical is a mild to severe skin and eye irritant, a skin sensitizer, a potential mutagen, and may cause neurologic effects in animals. There is limited evidence that bisphenol A diglycidyl ether may be carcinogenic to animals, but the carcinogenic potential is not classifiable for humans.

Given the proximity of residential properties to the drum storage areas, there is a potential for uncontrolled releases of a large volume of material to the environment that could present a risk to human health in the future if allowed to occur.

If you have any questions or comments about any of the above, please do not hesitate to contact me at 404-562-8598 or [frederick.tim@epa.gov](mailto:frederick.tim@epa.gov).



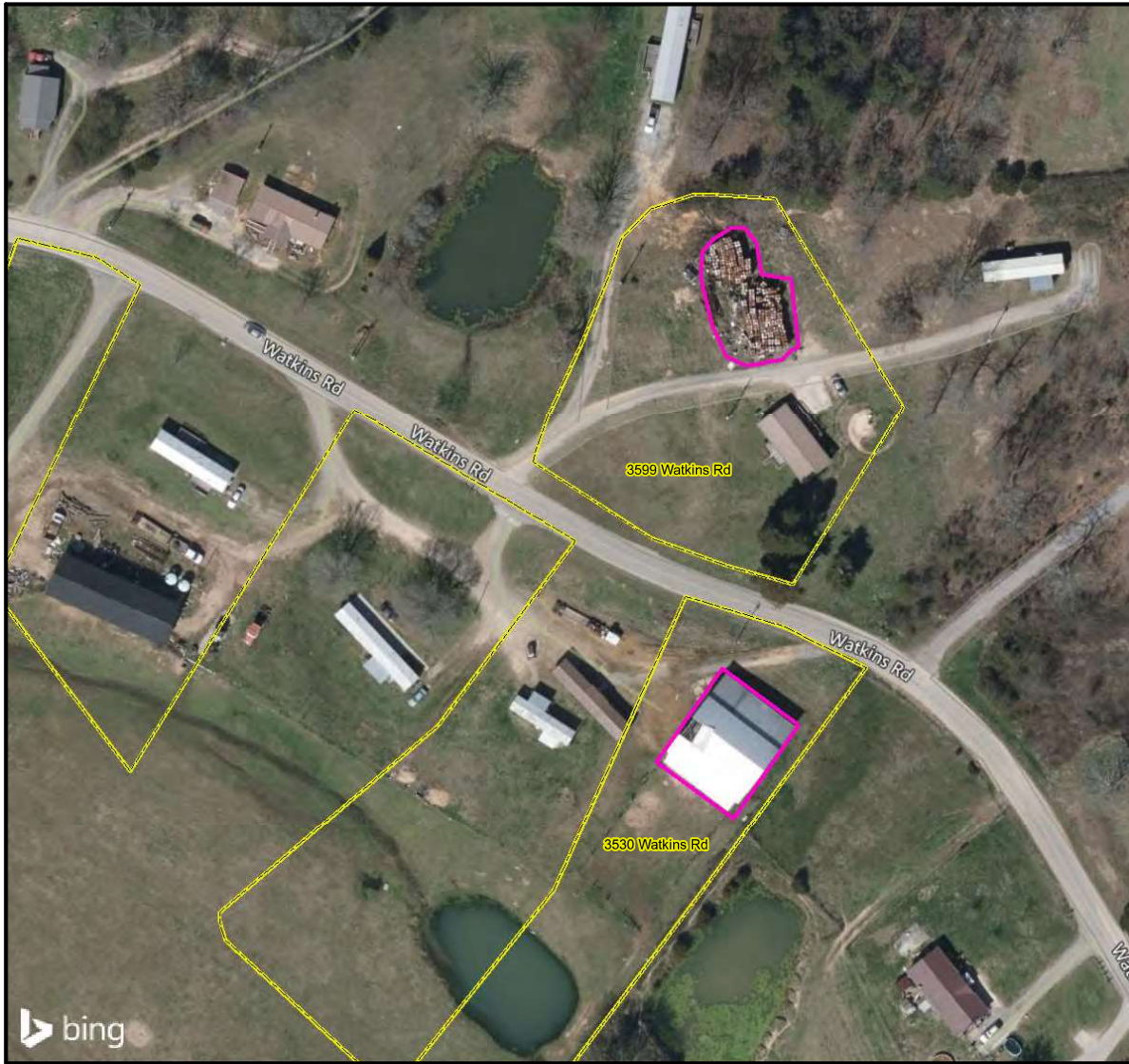
**OFFICIAL PHOTOGRAPH NO. 1**  
**U.S. ENVIRONMENTAL PROTECTION AGENCY**

**TOLIN:** 97-015 **Location:** 3599 Watkins Road, Loudon,  
Loudon County, Tennessee

**Orientation:** Northeast **Date:** October 25, 2021

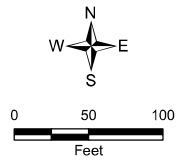
**Photographer:** David Reed, Tetra Tech, Inc. **Witness:** Christopher Grimes, Tetra Tech START  
Superfund Technical  
Assessment and Response  
Team (Tetra Tech START)

**Subject:** On October 25, 2021, U.S. Environmental Protection Agency (EPA) and Tetra Tech, Inc. Superfund Technical Assessment and Response Team (Tetra Tech START) observed approximately 1,500 55-gallon metal drums in various states of decay stacked two and three pallets high. Tetra Tech START collected liquid samples from these drums and composite soil samples from around the stacked drums for laboratory analysis.

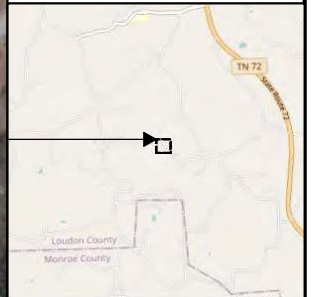


**Legend**

- Site Location  
(partially shown parcel boundaries)
- Sampling Area



Map Sources:  
Tennessee Property Viewer, 2021,  
and Bing Maps Aerial Imagery, 2018-2019.



**FIGURE 2**  
Site Layout

**Site Name:** Watkins Road Drum  
**TOLIN No.:** 97-015  
**City:** Loudon      **County:** Loudon      **State:** Tennessee

**TETRA TECH**      Date: 1/29/2022  
 Analyst: daj/vonbusch

File: C:\START\_V\97-015\_Watkins\_Road\_Drum\mxd\site\_layout.mxd