



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF ENVIRONMENTAL REMEDIATION  
**Boundary Modification Report**



8/3/2012

**Site Code:** 623008 **Site Name:** Fort Drum; waste disposal areas  
**City:** Fort Drum **Town:** Le Ray  
**Region:** 6 **County:** Jefferson  
**Current Classification:** 02 **Proposed Site Size:**  
**Current Site Size (acres):** **Extra Details:** Landfill  
**Significant Threat:** Yes **Site Type:** GPRA  
**Priority ranking Score:** **Project Manager:** Heather L. Bishop

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### Summary of Approvals

**Originator/Supervisor:** John Swartwout **04/25/2012**  
**Regional Hazardous Waste Remedial Engineer:** Peter Taylor: **06/20/2012**  
**BEEI of NYSDOH:** **07/27/2012**  
**CO Bureau Director:** James Harrington, Director, Remedial Bureau A: **07/30/2012**  
**8/3/2012 12:00:00AM**  
**Assistant Division Director:** Robert W. Schick, P.E.:

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### Site Description

#### Location:

Fort Drum is located about 10 miles northeast of Watertown and is approximately 107,265 acres, making Fort Drum the largest Army training installation in the northeast.

#### Site Features:

There are currently 13 areas of concern (AOCs) that are being investigated, remediated or undergoing long term monitoring. The current Registry listing encompasses the Old Sanitary Landfill Site of approximately 40 acres and the tetrachloroethene (PCE) plume AOC. The PCE remedial investigation site boundary is the initial site boundary that was produced prior to the remedial investigation. The total combined acreage is approximately 203 acres. (The other AOCs are included in the Base remediation program, but are not listed on the Registry)

The two areas of concern which are listed on the Registry are:

1) Old Sanitary Landfill: Inactive landfill used from 1940--73 for the disposal of solvents, petroleum, pesticides, paints, munitions. Landfill is fenced and capped. In 2007, a Willow-based phytoremediation plantation was installed to address contaminated seeps emanating from Cell 2 of the landfill. In 2008, Cell 2 of the landfill was recapped. The landfill is subject to a long-term monitoring and maintenance program.

Old Sanitary Landfill Cell 1: 19.62 acres  
Old Sanitary Landfill Cell 2: 18.12 acres



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2) PCE Plume AOC: A chlorinated solvent groundwater plume is in the remedial investigation stage. The purpose of the remedial investigation (RI) in the Gasoline Alley Areas (1800, 1900, and 3800) is to investigate the nature and extent of the chlorinated solvent compounds (primarily PCE) within the study area. Based on the results of the RI, remedial alternatives will be evaluated to address the extent of chlorinated solvent compound contamination in the Gasoline Alley Areas.

PCERI Site Boundary: 190.5 acres

PCERI Intermediate Plume 2011: 19.75 acres

PCERI Site Area and OSL cells combined is 202.92 acres

Note: The intermediate PCE plume is the most aerially extensive. The PCE RI site boundary is the initial conservative site boundary that was produced prior to the investigation. During the RI reporting phase, this boundary may change in size and shape.

There are several areas of concern that are being addressed at the Base as a whole (fenceline-to-fenceline). These areas are not listed on the Registry. The other areas that are being investigated/remediated under the entire Base remediation program are:

- \* Gasoline Alley Area 1895/1995/3805: Petroleum Spills resulting in 10 acres of free product. In 2003, an extensive multiphase extraction system was installed to address the contamination source area. In 2007, additional Air Sparge/Soil vapor extraction wells were installed down gradient of the source area to address groundwater contamination.
- \* Gasoline Alley Area 1795/WWII Landfill: Releases from former fueling area, landfill is a surface dump. In 2007, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination
- \* Gasoline Alley Area 1595: Releases from leaking underground storage tank. In 2004, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination.
- \* Gasoline Alley Area 1495: Releases from former fueling area. In 1997, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination
- \* Gasoline Alley Area 1395: Releases from former fueling area. In 1997, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination
- \* Gasoline Alley Area 1295: Releases from former fueling area.
- \* Building T-91: Vehicle Maintenance wastes released to ground.
- \* Building T-4006: Solvent release, adjacent to former pesticide mixing building (previously remediated).
- \* Building T-1245: Releases from leaking underground storage tank.
- \* Building P-2140: Releases from leaking underground storage tank. In 1997, a groundwater recovery system



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was installed to address groundwater contamination. In 2001, the groundwater recovery system was replaced with multiphase extraction/aquifer air sparging/soil vapor extraction systems.

**Historic Uses:**

Past solid waste disposal practices have resulted in contamination of soil, surface water, sediment and groundwater with landfill leachate containing petroleum hydrocarbons, heavy metals, pesticides, solvents and paint components. Formerly leaking USTs resulted in floating free product contaminating the groundwater, surface water, sediment and soil. Explosive Ordnance Disposal (EOD) activities have caused elevated levels of heavy metals, trace levels of explosive and propellant compounds in soil and groundwater. Two buildings/sites were contaminated with pesticides.

**Current Zoning/Uses:**

Fort Drum is the largest Army training installation in the northeast. The base is the home of the 10th Mountain Division. Seven small towns border the installation. Approximately 31,000 military personnel, their dependents, and civilian employees reside and/or work at the base on a daily basis.

**Site Geology and Hydrogeology:**

The surficial, unconfined aquifer at Fort Drum is comprised of the upper portions of the Pine Plains Delta. The aquifer covers the southern one-third of Fort Drum. Groundwater from the aquifer discharges into smaller streams that drain northwestward into the Indian River drainage basin. Depth to the water table at the site ranges from approximately 13 to 18 feet bgs.

Upper surficial aquifer - 1 to 21 ft/day

Lower surficial aquifer - 1.05 ft/day

Aquitard silt layer - 0.01 ft/day

The water quality parameters typically show dissolved oxygen and oxygen reduction potential values indicative of an aerobic environment.

A confined bedrock aquifer containing two major production zones is present at Fort Drum. This unit is approximately 140 feet thick in the vicinity of the Black River south of the original cantonment area and is the unit present beneath Gasoline Alley. This aquifer transmits water in joints, bedding planes, solution cavities, and vertical fractures. Analysis indicates a downward groundwater flow gradient.

| <b>Contaminants of Concern (Including Materials Disposed)</b> | <b>Quantity Disposed</b> |
|---|--------------------------|
| <b>OU 01</b>  |                          |
| DDT   | 0.00                     |
| PETROLEUM, LUBRICANTS   | 0.00                     |
| UNUSED AMMUNITION   | 0.00                     |
| SOLVENTS  | 0.00                     |
| WASTE PAINT, ETC.   | 0.00                     |

**Analytical Data Available for :** Groundwater, Surface Water, Sediment

**Applicable Standards Exceeded for:** Groundwater, Surface Water



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### Site Environmental Assessment

Capping of the Old Sanitary Landfill was completed in 2008. The Old Sanitary Landfill was used from 1940-73 for the disposal of solvents, petroleum, pesticides, paints, munitions. Landfill is fenced and capped. In 2007, a Willow-based phytoremediation plantation was installed to address contaminated seeps emanating from Cell 2 of the landfill. In 2008, Cell 2 of the landfill was recapped.

An RI is currently underway to delineate a PCE plume in the Gasoline Alley Areas. The purpose of the RI in the Gasoline Alley Areas (1800, 1900, and 3800) is to investigate the nature and extent of the chlorinated solvent compounds (primarily PCE) within the study area. Based on the results of the RI, remedial alternatives will be evaluated to address the extent of chlorinated solvent compound contamination. A soil vapor intrusion study is being conducted at an occupied building within the plume area.

The identified contaminant of concern is PCE; however, related solvents and relevant breakdown products may be present. It is suspected that releases from the site have contaminated soils and GW beneath the site and migrated northwesterly within Fort Drum property. In addition, PCE contamination has been found at depth in the vicinity of the FTD-030F petroleum plume and the FTD-007 Old Sanitary Landfill.

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### Site Health Assessment

The site is completely fenced, which restricts public access. The landfill portion of the site was properly capped when it was closed; therefore, people are not likely to contact contaminated soils in this area. The potential for persons to contact contaminated soil in other portions of the site is under investigation. People are not drinking the contaminated water because the area is served by a water supply that is not affected by this contamination. Supply wells that have been impacted were taken off-line. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential for soil vapor intrusion to occur is being evaluated.

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## Remedy Description and Cost

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### Remedy Description for Operable Unit 01

Landfill cap (Part 360 closure)

Old Sanitary Landfill: Inactive landfill used from 1940--73 for the disposal of solvents, petroleum, pesticides, paints, munitions. Landfill is fenced and capped. In 2007, a Willow-based phytoremediation plantation was installed to address contaminated seeps emanating from Cell 2 of the landfill. In 2008, Cell 2 of the landfill was recapped.

**Total Cost**

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### Remedy Description for Operable Unit 02





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**Site Name:** Fort Drum; waste disposal areas

**Total Cost**

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| <b>OU</b> | <b>Site Management Plan Approval:</b> | <b>Status:</b> |
|-----------|---------------------------------------|----------------|
|-----------|---------------------------------------|----------------|

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**Basis for Boundary Change**

This site is a portion of a 107,265 acre active Army base which is not on the NPL. The original listing for this site was for the 40-50 acre "Inactive Landfill" which operated from 1940 to 1973. This landfill is now known as the "Old Sanitary Landfill," with a reported size of 50 acres. During the decades of the 1990s and 2000s this site was managed by RCRA program staff in the Division of Solid and Hazardous Materials. In 1991, without formally changing the site boundary, they dropped the site area information from the database and expanded the site description to discuss all Areas of Concern at the base that they were working on. This gave the appearance of a "fenceline-to-fenceline" site definition, which is standard practice for both the RCRA program and for the NPL listing of federal facilities. During 2011, with the reorganization/renaming of the Division of Solid and Hazardous Materials, this site returned to State Superfund Program staff for management. The Registry site boundary is proposed to be set at this time to include the originally listed Old Sanitary Landfill plus an area of the base currently under investigation due to VOC contamination in groundwater and soil vapor (referred to as the "PCE Plume Area"). The specific source of this PCE plume is as yet undetermined. The other Areas of Concern at the base which are still under remediation are under the purview of the RCRA or Spills Programs and are not associated with hazardous waste disposal. The size of the Registry site will be reported as 209.92 acres. The site classification will remain Class 2 since although the Old Sanitary Landfill has been capped the Remedial Investigation is still ongoing for the PCE Plume Area.

**NEW YORK**  
state department of  
**HEALTH**

Nirav R. Shah, M.D., M.P.H.  
Commissioner

Sue Kelly  
Executive Deputy Commissioner

July 27, 2012

Mr. Jim Harrington, Director  
Remedial Bureau A  
Division of Environmental Remediation  
NYS Department of Environmental Conservation  
625 Broadway, 11th Floor  
Albany, New York 12233

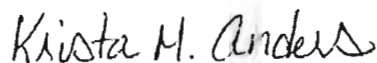
Re: **Boundary Modification Package**  
Fort Drum; Waste Disposal Areas  
Site #623008  
Fort Drum, Le Ray (T) / Jefferson County

Dear Mr. Harrington:

At your request, we have reviewed the New York State Department of Environmental Conservation's proposal to modify the boundary of the referenced site. Currently, the site includes 50 acres that encompass the Old Sanitary Landfill. The proposal is to incorporate the associated tetrachloroethene plume remedial investigation area, which would increase the site's area to a total of 203 acres. I understand that a remedial investigation is underway in this area to delineate the tetrachloroethene plume in the Gasoline Alley areas of Fort Drum. In addition, a soil vapor intrusion study is being conducted within the revised site boundary area. Based on the results of these investigations, remedial alternatives will be evaluated to address the contamination.

Based on this information, I concur with expanding the site boundary to encompass the Old Sanitary Landfill and tetrachloroethene plume study area. If you have any questions, please contact Ms. Deanna Ripstein or me at (518) 402-7860.

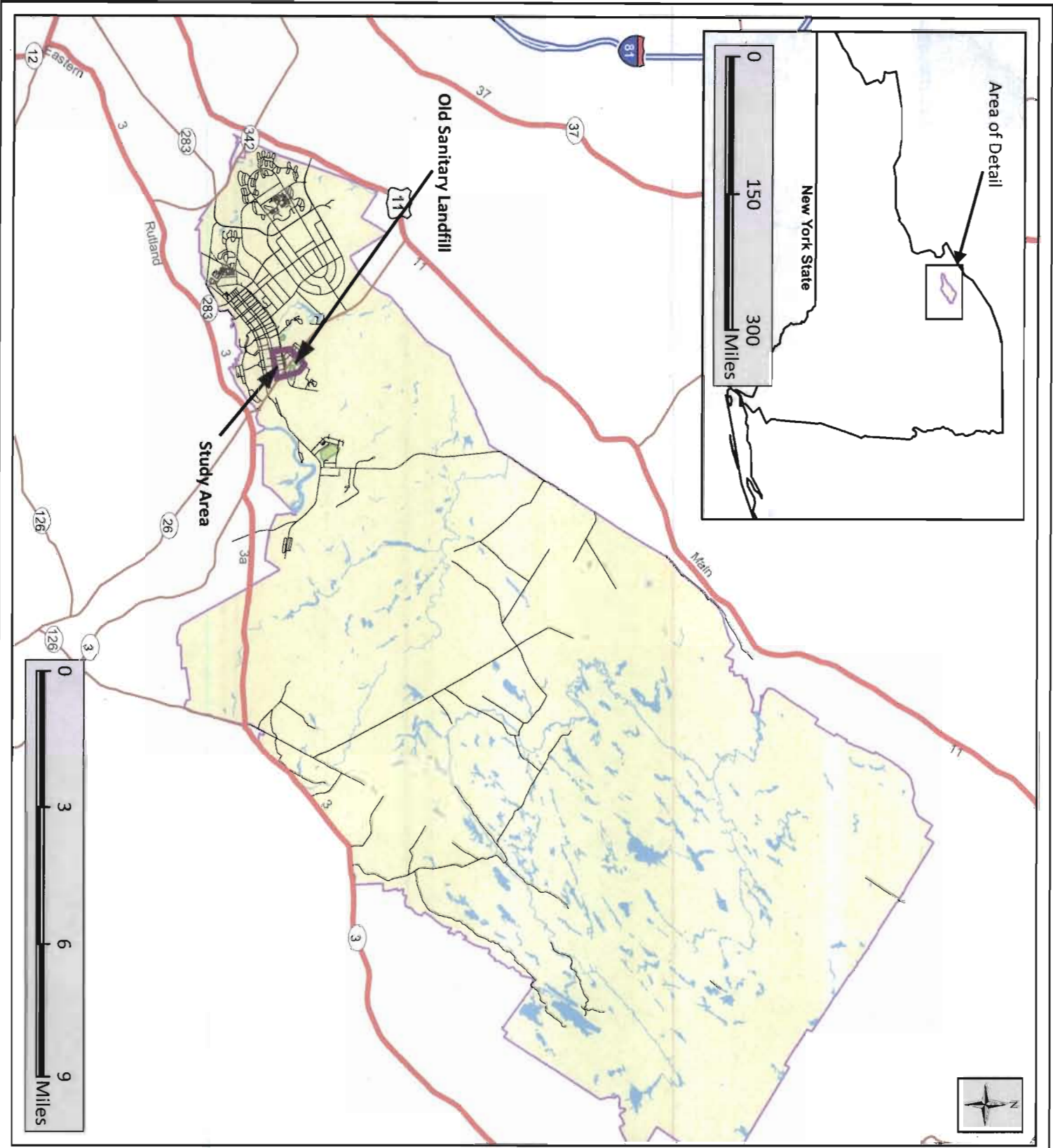
Sincerely,



Krista M. Anders, Acting Director  
Bureau of Environmental Exposure Investigation

ec: A. Salame-Alfie, Ph.D.  
D. Ripstein / W. Kuehner / File  
S. Palmer – NYSDOH WDO  
K. Lewandowski / J. Swartwout / H. Bishop – NYSDEC Central Office  
P. Taylor – NYSDEC Region 6

P:\Bureau\Sites\Region\_6\JEFFERSON\623008\BoundaryMod\_DOHConcur\_071912\_623008.doc



- Legend**
- Interstate
  - Highway
  - Major Road
  - Local Road
  - Fort Drum Roads
  - Water
  - Landfill
  - Installation Area

  
 4501 Ford Ave.  
 Suite 1200  
 Alexandria, VA 22302  
 (P) 703.820.3339  
 (F) 703.845.8568

Created By: AES  
 Date: August, 2010  
**FIGURE 1-2**

**Regional Location Map**

**Fort Drum RI for CSC  
 Contaminants Work Plan**  
 Fort Drum, NY





Fort Drum  
OSL Boundary only





Fort Drum  
PCERL boundary only



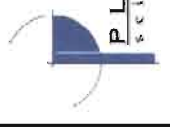


Fort Drums  
PCERI and OSL OUs combined



**Legend**

- RI Study Area
- Area 1700
- Area 1800
- Area 1900
- Area 3800
- Potential Hazardous Waste Sources
- Underground Filling Pipes
- Fence Line
- Rail Road
- Paved Road
- Unpaved Road
- Landfill Site
- Wetlands
- Building
- Paved Area
- Monitoring Wells
- Pump House Features
  - Dispenser
  - Overhead Truck Dispenser
  - Pump House
  - UST



4501 Ford Ave.  
Suite 1200  
Alexandria, VA 22302  
(P) 703.820.3339  
(F) 703.845.8568

Created By: JRC  
Date: December 2011

**FIGURE 1**

**Site Boundary Map**

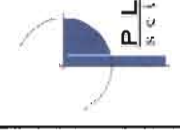
Vapor Intrusion Survey  
Fort Drum, New York





**Legend**

- Potential Hazardous Waste Sources
- PCE RI Study Area
- Pump House Features**
- Dispenser
- Overhead Truck Dispenser
- Pump House
- UST
- Underground Filling Pipes
- Fence Line
- Rail Road
- Paved Road
- Unpaved Road
- Landfill Site
- Wetlands
- Building
- Paved Area

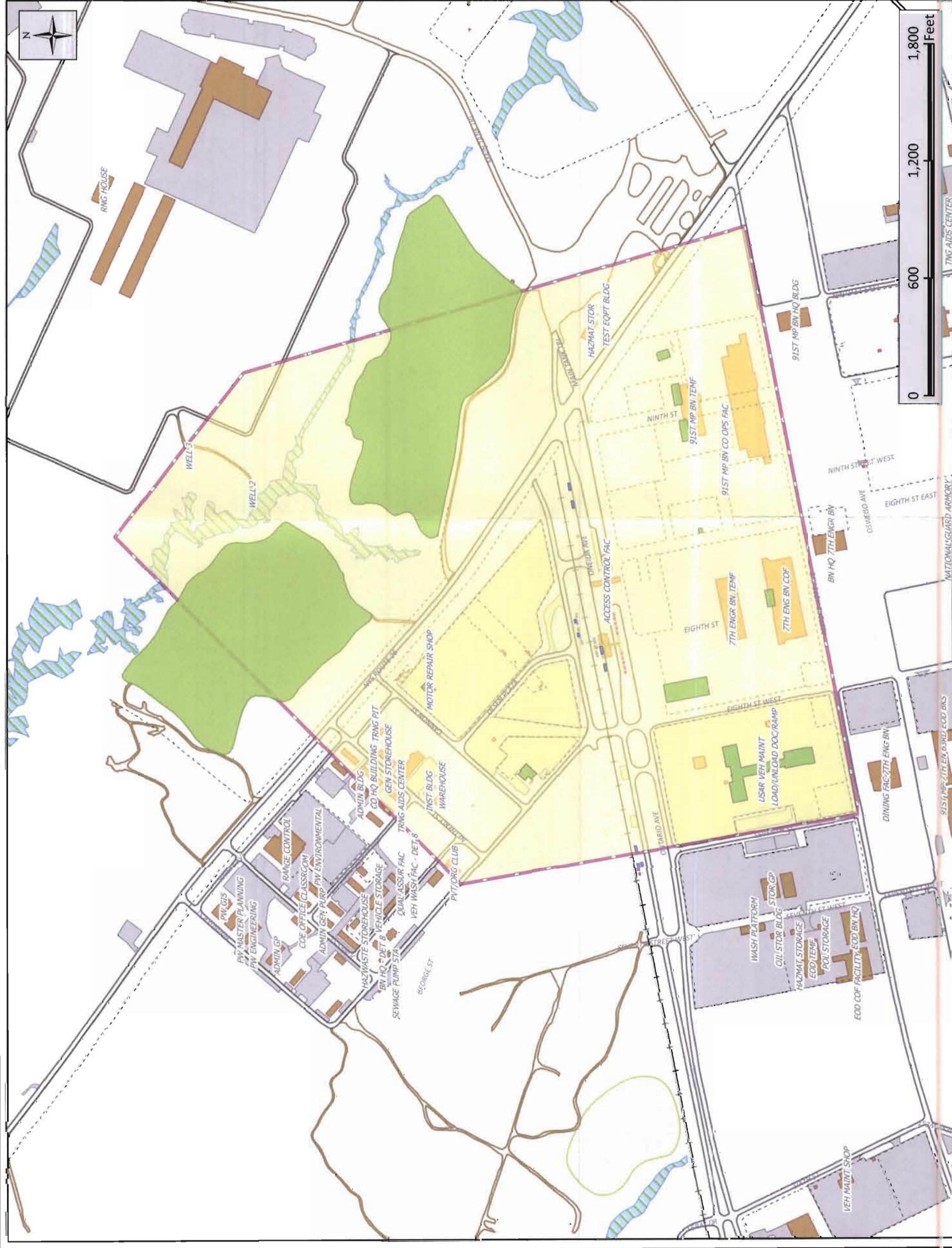


4501 Ford Ave.  
Suite 1200  
Alexandria, VA 22302  
(P) 703.820.3339  
(F) 703.845.8568

Created By: WFG  
Date: June, 2010

**FIGURE 1-3**  
**PCE Remedial Investigation Study Area Location Map**

Fort Drum RI for CSC  
Contaminants Work Plan  
Fort Drum, NY





Add X  
Modify \_\_\_\_\_  
Reclassify \_\_\_\_\_  
Delist \_\_\_\_\_

**623008**

ADDITIONS/CHANGES TO REGISTRY OF  
INACTIVE HAZARDOUS WASTE DISPOSAL SITES

Site Name Fort Drum - Inactive Landfill DEC ID Number 623008

Site Address Fort Drum Military Installation County Jefferson  
Great Bend Road and Oneida Avenue

Add New Site: (Potential hazardous waste site, Site Inspection Summary Report, EPA Preliminary Assessment Form and Registry Class 2 Form must be completed and attached)

Modify Registry data (detail below)

Reclassify from class \_\_\_ to class \_\_\_. (justify below)

Delist (justify below)

Detail/Justification

Partially closed facility of 40 to 50 acres used from 1940 to 1973 for the disposal of DDT; petroleum and lubricant saturated waste; paint, solvent, and pesticide containers; unused ammunition; and general facility refuse. Portions of this site have been capped with a 20-mil PVC cap. Many containers labelled solvents and DDT are protruding from the slopes of the landfill. Numerous leachate seeps are currently entering surface water. Analysis of surface water and groundwater indicate metals and solvent contamination in excess of NYS Standards.

*A P.A. form will be submitted later.*

Prepared by: Martin Brand Date: 11/12/87

Approvals:

Reg. Haz. Waste Eng. See attached Date: \_\_\_\_\_

R. Tramontano NYSDOH Charles Goddard for R.T. Date: 12/15/87

V. Bryant DEE Vance Bryant Date: 12/15/87

W. Demick/M.Chen Raymond E. Lutz (Act. Sec. Dept) Date: 12/15/87

R.A. Olazagasti [Signature] Date: 12/15/87

C.N. Goddard Charles Goddard Date: 12/15/87

*AK*

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 DIVISION OF SOLID AND HAZARDOUS WASTE  
 INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE:  2  REGION:  6  SITE CODE: \_\_\_\_\_

NAME OF SITE :  Fort Drum - Inactive Landfill   
 STREET ADDRESS:  Great Bend Road and Oneida Avenue   
 TOWN/CITY:  Fort Drum Military Installation  COUNTY:  Jefferson  ZIP: \_\_\_\_\_

SITE TYPE:  
 Open Dump-\_\_ Structure-\_\_ Lagoon-\_\_ Landfill- X  Treatment Pond-\_\_  
 ESTIMATED SIZE:  40-50  Acres

SITE OWNER/OPERATOR INFORMATION:  
 CURRENT OWNER NAME.....:  U.S. Army/DEH Environmental   
 CURRENT OWNER ADDRESS.:  Fort Drum Military Installation, Fort Drum, NY   
 OWNER(S) DURING USE....:  U.S. Army   
 OPERATOR DURING USE....:  U.S. Army   
 OPERATOR ADDRESS.....:  Fort Drum Military Installation, Fort Drum, NY   
 PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From  1940  To  1973

SITE DESCRIPTION:

Inactive landfill reported used from 1940 to 1973 for the disposal of DDT; petroleum, oil, and lubricant saturated wastes; paint, solvent, and pesticide containers; unused ammunition; and general refuse. Portions of this site have been capped with a 20-mil PVC liner, however, the cap is exposed and punctured in many areas. Many drums and containers labelled as solvents, DDT, and petroleum products are protruding from the slopes of the landfill. Numerous leachate seeps are directly entering surface water.

The US Army has conducted a limited site investigation of this area in conjunction with other sites on the installation. Analysis of surface water and groundwater indicates metals and solvent contamination in excess of NYS Standards.

The USEPA is currently preparing an HRS score for Fort Drum. Preliminary results indicate the facility will be proposed for the National Priorities List.

HAZARDOUS WASTE DISPOSED: Confirmed- X  Suspected-\_\_  
 TYPE \_\_\_\_\_ QUANTITY (units) \_\_\_\_\_

DDT unknown  
 petroleum, lubricants  
 unused ammunition  
 solvents



SITE CODE: \_\_\_\_\_

ANALYTICAL DATA AVAILABLE:

Air-\_\_ Surface Water- Groundwater- Soil-\_\_ Sediment- None-\_\_ .

CONTRAVENTION OF STANDARDS:

Groundwater- Drinking Water-\_\_ Surface Water- Air-\_\_

LEGAL ACTION:

TYPE: State-\_\_ Federal-\_\_  
STATUS: In Progress-\_\_ Completed-\_\_

REMEDIAL ACTION:

Proposed-\_\_ Under Design-\_\_ In Progress-\_\_ Completed-\_\_  
NATURE OF ACTION: \_\_\_\_\_

GEOTECHNICAL INFORMATION:

SOIL TYPE: Sand  
GROUNDWATER DEPTH: 20-50 *feet*

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

- partially capped landfill with visible barrels and containers
- numerous leachate seeps entering surface water
- confirmed groundwater and surface water contamination
- 
- 

ASSESSMENT OF HEALTH PROBLEMS:

- 
- 
- 
- 
- 

PERSON(S) COMPLETING THIS FORM:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NEW YORK STATE DEPARTMENT OF HEALTH

NAME: Martin Brand *MBrand*  
TITLE: Senior Engineering Geologist

NAME:  
TITLE:

NAME:  
TITLE:

NAME:  
TITLE:

DATE:

DATE:

ADDITIONS/CHANGES TO REGISTRY OF  
INACTIVE HAZARDOUS WASTE DISPOSAL SITES

Site Name Fort Drum - Inactive Landfill DEC ID Number \_\_\_\_\_

Site Address Fort Drum Military Installation County Jefferson  
Great Bend Road and Oneida Avenue

- Add New Site (Potential hazardous waste site, Site Inspection Summary Report, EPA Preliminary Assessment Form and Registry Class 2 Form must be completed and attached)
- Modify Registry data (detail below)
- Reclassify from class \_\_\_\_\_ to class \_\_\_\_\_ (Justify below)
- Delist (Justify below)

Detail/Justification

Partially closed facility of 40 to 50 acres used from 1940 to 1973 for the disposal of DDT; petroleum and lubricant saturated waste; paint, solvent, and pesticide containers; unused ammunition; and general facility refuse. Portions of this site have been capped with a 20-mil PVC cap. Many containers labelled solvents and DDT are protruding from the slopes of the landfill. Numerous leachate seeps are currently entering surface water. Analysis of surface water and groundwater indicate metals and solvent contamination in excess of NYS Standards.

*A P.A. form will be submitted later.*

Prepared by: Martin Brand *[Signature]* Date: 11/19/87

Approvals:

- Reg. Haz. Waste Eng. John P. Ferrara Date: 12-10-87
- R. Tramontano NYSDOH \_\_\_\_\_ Date: \_\_\_\_\_
- V. Bryant DEE \_\_\_\_\_ Date: \_\_\_\_\_
- W. Demick/M.Chen \_\_\_\_\_ Date: \_\_\_\_\_
- R.A. Olazagasti \_\_\_\_\_ Date: \_\_\_\_\_
- C.N. Goddard \_\_\_\_\_ Date: \_\_\_\_\_

*[Handwritten mark]*

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 DIVISION OF SOLID AND HAZARDOUS WASTE  
 INACTIVE HAZARDOUS WASTE DISPOSAL SITE REPORT

CLASSIFICATION CODE: 2 REGION: 5 SITE CODE: \_\_\_\_\_

NAME OF SITE: Fort Drum Military Installation  
 STREET ADDRESS: Green Sand Road at Dreipa Avenue  
 MUNICIPALITY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ ZIP: \_\_\_\_\_  
Fort Drum Military Installation Jefferson

SITE TYPE: Open Dump Structure Leachate Landfill TLT Treatment Pond  
 ESTIMATED SIZE: 40-50 Acres

SITE OWNER/OPERATOR INFORMATION:

CURRENT OWNER NAME: U.S. Army Environmental  
 CURRENT OWNER ADDRESS: Fort Drum Military Installation, Fort Drum, NY  
 OPERATOR DURING USE: U.S. Army  
 OPERATOR DURING USE: U.S. Army  
 OPERATOR ADDRESS: Fort Drum Military Installation, Fort Drum, NY  
 PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1940 To 1970

SITE DESCRIPTION:

(inactive landfill) reportedly used from 1940 to 1970 for the disposal of DDT, petroleum, oil, and lubricant saturated wastes; paints, solvents, and pesticide containers; unused ammunition; and general refuse. Portions of this site have been diked with a 20-mil PVC liner; however, the dikes are exposed and punctured in many areas. Many drums and containers, labeled as solvents, DDT, and petro oil products are protruding from the slopes of the landfill. Numerous leachate seeps are directly entering surface water.

The US Army has conducted a limited site investigation of this area in conjunction with other sites on the installation. Analysis of surface water and groundwater indicates metals and solvent contamination in excess of NYS Standards.

The USDA is currently preparing an RRS score for Fort Drum. Real military records indicate the facility will be proposed for the National Priorities List.

HAZARDOUS WASTE DISPOSED: General U.S. Army  
 TYPE: \_\_\_\_\_ MUNICIPALITY: Jefferson

DDT  
 petroleum, lubricants  
 unused ammunition  
 solvents  
 unknown



SITE CODE: \_\_\_\_\_

ANALYTICAL DATA AVAILABLE:

Groundwater water quality data \_\_\_\_\_

Depth: \_\_\_\_\_

CONCENTRATION OF STANDARDS:

Groundwater: \_\_\_\_\_ Surface water: \_\_\_\_\_

LEGAL ACTION:

TYPE: Federal \_\_\_\_\_

STATUTE: \_\_\_\_\_

REMEDIAL ACTION:

Approved: \_\_\_\_\_

NATURE OF ACTION: \_\_\_\_\_

GEOTECHNICAL INFORMATION:

SOIL TYPE: \_\_\_\_\_

GROUNDWATER DEPTH: \_\_\_\_\_

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

- \* Groundwater quality (nitrates) is high and contains
- \* Numerous invertebrate seeds entering surface water
- \* Contaminated ground water and surface water contamination
- \* \_\_\_\_\_
- \* \_\_\_\_\_

ASSESSMENT OF HEALTH PROBLEMS:

- \* \_\_\_\_\_
- \* \_\_\_\_\_
- \* \_\_\_\_\_

PERSONS WHO COMPLETED THIS FORM

| NAME: | TITLE: | NAME: | TITLE: |
|-------|--------|-------|--------|
| _____ | _____  | _____ | _____  |
| _____ | _____  | _____ | _____  |
| _____ | _____  | _____ | _____  |



## New York State Department of Environmental Conservation

## MEMORANDUM

RECEIVED  
DEC 14 1987  
H. J. ...  
L. ...

**TO:** Bob Olazagasti  
**FROM:** John Kenna, Region 6  
**SUBJECT:** FORT DRUM HAZARDOUS WASTE SITES  
**DATE:** December 11, 1987

Attached are the signed forms for listing two Fort Drum sites, the inactive landfill site and the fuel storage site.

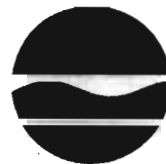
While the fuel storage area has serious contamination, I question if it is from a waste. Perhaps this should be handled by the Spill Program or Bulk Storage Program.

A third Fort Drum site, the four square mile agent orange site, is not enclosed. Do we really want to list four square miles of Fort Drum because of spraying in 1959? Do we have any soil or water samples that indicate contamination?

John P. Kenna, P.E.  
Regional Solid Waste Engineer  
Region 6

JPK:kw  
Attachments

**New York State Department of Environmental Conservation**  
**Division of Environmental Remediation**  
**Bureau of Technical Support, 11<sup>th</sup> Floor**  
625 Broadway, Albany, NY 12233-7020  
Phone: (518) 402-9553 • Fax: (518) 402-9547  
Website: [www.dec.ny.gov](http://www.dec.ny.gov)



Joe Martens  
Commissioner

AUG 10 2012

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. James M. Miller  
Chief, Environmental Division  
Headquarters, United States Army Garrison, Fort Drum  
10000 10th Mountain Division Drive  
Fort Drum, NY 13602-5000

Dear Mr. Miller:

As mandated by Section 27-1305 of the Environmental Conservation Law (ECL), the New York State Department of Environmental Conservation (Department) must maintain a registry of all inactive disposal sites suspected or known to contain hazardous wastes. The ECL also mandates that this Department notify, by certified mail, the owner of all or any part of each site or area included in the Registry of Inactive Hazardous Waste Disposal Sites in New York State ("The Registry") The Department previously notified you of the listing of this site on "The Registry".

Our records indicate that you are still the owner or part owner of the site listed below. Therefore, this letter constitutes notification of the boundary modification for this site increasing the site size from 40 acres to approximately 203 acres. As previously indicated, once listed in the Registry, the site becomes subject to certain restrictions prescribed by provisions of 6 NYCRR Part 375. These regulations may be found at the following DEC website address: <http://www.dec.ny.gov/regs/4373.html>.

DEC Site No.: 623008  
Site Name: Fort Drum; waste disposal areas  
Site Address: Great Bend Road and Oneida Avenue, Fort Drum, NY 13602  
Site Classification: Class 2

Enclosed is a copy of the Department's Inactive Hazardous Waste Disposal Site Report form as it will now appear in the Registry. An explanation of the site classification is available at <http://www.dec.ny.gov/chemical/8663.html>. The Law allows the owner and/or operator of a site listed in the Registry to petition the Commissioner of the New York State Department of Environmental Conservation for deletion of such site, modification of site classification, or modification of any information regarding such site, by submitting a written statement setting forth the grounds of the petition.



Such petition may be addressed to:

Honorable Joseph J. Martens  
Commissioner  
New York State Department of Environmental Conservation  
625 Broadway  
Albany, New York 12233-1010

For additional information, please contact Heather Bishop, the Project Manager, at 518-402-9620.

Sincerely,

A handwritten signature in black ink that reads "Kelly A. Lewandowski". The signature is written in a cursive style and is positioned above the printed name and title.

Kelly A. Lewandowski, P.E.  
Chief  
Site Control Section

Enclosures

bec: w/o Enclosures  
R. Schick  
D. Weigel  
A. English  
K. Lewandowski  
J. Harrington, Director, Remedial Bureau A  
H. Bishop, Project Manager  
P. Humphrey  
K. Anders, NYSDOH  
J. Swartwout, Chief, Remedial Bureau A  
R. Young, Attorney Region 6  
P. Taylor, RHWRE, Region 6  
L. Ambeau, Regional Permit Administrator, Region 6  
S. Heigel



NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL  
CONSERVATION  
DIVISION OF ENVIRONMENTAL REMEDIATION  
**Inactive Hazardous Waste Disposal Report**



|                       |  |                      |                                   |                                |
|-----------------------|--|----------------------|-----------------------------------|--------------------------------|
| <b>Site Code</b>      | 623008                                 |                      |                                   |                                |
| <b>Site Name</b>      | Fort Drum; waste disposal areas        | <b>Address</b>       | Great Bend Road and Oneida Avenue |                                |
| <b>Classification</b> | 02                                     | <b>City</b>          | Fort Drum                         | <b>Zip</b> 13602               |
| <b>Region</b>         | 6                                      | <b>County</b>        | Jefferson                         | <b>Town</b> Le Ray             |
| <b>Latitude</b>       | 44 degrees, 2 minutes, 47.00 seconds   |                      |                                   | <b>Estimated Size</b> 203.0000 |
| <b>Longitude</b>      | -75 degrees, 44 minutes, 23.00 seconds |                      |                                   |                                |
| <b>Site Type</b>      | RCRA                                   | <b>Disposal Area</b> | Landfill                          |                                |

## Site Description

### Location:

Fort Drum is located about 10 miles northeast of Watertown and is approximately 107,265 acres, making Fort Drum the largest Army training installation in the northeast.

### Site Features:

There are currently 13 areas of concern (AOCs) that are being investigated, remediated or undergoing long term monitoring. The current Registry listing encompasses the Old Sanitary Landfill Site of approximately 40 acres and the tetrachloroethene (PCE) plume AOC. The PCE remedial investigation site boundary is the initial site boundary that was produced prior to the remedial investigation. The total combined acreage is approximately 203 acres. (The other AOCs are included in the Base remediation program, but are not listed on the Registry)

The two areas of concern which are listed on the Registry are:

1) Old Sanitary Landfill: Inactive landfill used from 1940--73 for the disposal of solvents, petroleum, pesticides, paints, munitions. Landfill is fenced and capped. In 2007, a Willow-based phytoremediation plantation was installed to address contaminated seeps emanating from Cell 2 of the landfill. In 2008, Cell 2 of the landfill was recapped. The landfill is subject to a long-term monitoring and maintenance program.

Old Sanitary Landfill Cell 1: 19.62 acres

Old Sanitary Landfill Cell 2: 18.12 acres

2) PCE Plume AOC: A chlorinated solvent groundwater plume is in the remedial investigation stage. The purpose of the remedial investigation (RI) in the Gasoline Alley Areas (1800, 1900, and 3800) is to investigate the nature and extent of the chlorinated solvent compounds (primarily PCE) within the study area. Based on the results of the RI, remedial alternatives will be evaluated to address the extent of chlorinated solvent compound contamination in the Gasoline Alley Areas.

PCERI Site Boundary: 190.5 acres

PCERI Intermediate Plume 2011: 19.75 acres

PCERI Site Area and OSL cells combined is 202.92 acres

Note: The intermediate PCE plume is the most aerially extensive. The PCE RI site boundary is the initial conservative site boundary that was produced prior to the investigation. During the RI reporting phase, this boundary may change in size and shape.

There are several areas of concern that are being addressed at the Base as a whole (fenceline-to-fenceline). These areas are not listed on the Registry. The other areas that are being investigated/remediated under the entire Base remediation program are:

\* Gasoline Alley Area 1895/1995/3805: Petroleum Spills resulting in 10 acres of free product. In 2003, an extensive multiphase extraction system was installed to address the contamination source area. In 2007, additional Air Sparge/Soil vapor extraction wells were installed down gradient of the source area to address groundwater contamination.

\* Gasoline Alley Area 1795/WWII Landfill: Releases from former fueling area, landfill is a surface dump. In 2007, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination

\* Gasoline Alley Area 1595: Releases from leaking underground storage tank. In 2004, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination.



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- \* Gasoline Alley Area 1495: Releases from former fueling area. In 1997, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination
- \* Gasoline Alley Area 1395: Releases from former fueling area. In 1997, Air Sparge/Soil vapor extraction wells were installed to address groundwater contamination
- \* Gasoline Alley Area 1295: Releases from former fueling area.
- \* Building T-91: Vehicle Maintenance wastes released to ground.
- \* Building T-4006: Solvent release, adjacent to former pesticide mixing building (previously remediated).
- \* Building T-1245: Releases from leaking underground storage tank.
- \* Building P-2140: Releases from leaking underground storage tank. In 1997, a groundwater recovery system was installed to address groundwater contamination. In 2001, the groundwater recovery system was replaced with multiphase extraction/aquifer air sparging/soil vapor extraction systems.

**Historic Uses:**

Past solid waste disposal practices have resulted in contamination of soil, surface water, sediment and groundwater with landfill leachate containing petroleum hydrocarbons, heavy metals, pesticides, solvents and paint components. Formerly leaking USTs resulted in floating free product contaminating the groundwater, surface water, sediment and soil. Explosive Ordnance Disposal (EOD) activities have caused elevated levels of heavy metals, trace levels of explosive and propellant compounds in soil and groundwater. Two buildings/sites were contaminated with pesticides.

**Current Zoning/Uses:**

Fort Drum is the largest Army training installation in the northeast. The base is the home of the 10th Mountain Division. Seven small towns border the installation. Approximately 31,000 military personnel, their dependents, and civilian employees reside and/or work at the base on a daily basis.

**Site Geology and Hydrogeology:**

The surficial, unconfined aquifer at Fort Drum is comprised of the upper portions of the Pine Plains Delta. The aquifer covers the southern one-third of Fort Drum. Groundwater from the aquifer discharges into smaller streams that drain northwestward into the Indian River drainage basin. Depth to the water table at the site ranges from approximately 13 to 18 feet bgs.

- Upper surficial aquifer - 1 to 21 ft/day
- Lower surficial aquifer - 1.05 ft/day
- Aquitard silt layer - 0.01 ft/day

The water quality parameters typically show dissolved oxygen and oxygen reduction potential values indicative of an aerobic environment.

A confined bedrock aquifer containing two major production zones is present at Fort Drum. This unit is approximately 140 feet thick in the vicinity of the Black River south of the original cantonment area and is the unit present beneath Gasoline Alley. This aquifer transmits water in joints, bedding planes, solution cavities, and vertical fractures. Analysis indicates a downward groundwater flow gradient.

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| <b>Contaminants of Concern (Including Materials Disposed)</b> | <b>Quantity</b> |
|---|-----------------|
| <b>OU 01</b>  |                 |
| DDT   | 0.00            |
| PETROLEUM, LUBRICANTS   | 0.00            |
| UNUSED AMMUNITION   | 0.00            |
| SOLVENTS  | 0.00            |
| WASTE PAINT, ETC.   | 0.00            |

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**Analytical Data Available for :** Groundwater, Surface Water, Sediment

**Applicable Standards Exceeded for:** Groundwater, Surface Water

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**Site Environmental Assessment**

Capping of the Old Sanitary Landfill was completed in 2008. The Old Sanitary Landfill was used from 1940--73 for the disposal of solvents, petroleum, pesticides, paints, munitions. Landfill is fenced and capped. In 2007, a Willow-based phytoremediation

8/10/2012

plantation was installed to address contaminated seeps emanating from Cell 2 of the landfill. In 2008, Cell 2 of the landfill was recapped.

An RI is currently underway to delineate a PCE plume in the Gasoline Alley Areas. The purpose of the RI in the Gasoline Alley Areas (1800, 1900, and 3800) is to investigate the nature and extent of the chlorinated solvent compounds (primarily PCE) within the study area. Based on the results of the RI, remedial alternatives will be evaluated to address the extent of chlorinated solvent compound contamination. A soil vapor intrusion study is being conducted at an occupied building within the plume area.

The identified contaminant of concern is PCE; however, related solvents and relevant breakdown products may be present. It is suspected that releases from the site have contaminated soils and GW beneath the site and migrated northwesterly within Fort Drum property. In addition, PCE contamination has been found at depth in the vicinity of the FTD-030F petroleum plume and the FTD-007 Old Sanitary Landfill.

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## Site Health Assessment

The site is completely fenced, which restricts public access. The landfill portion of the site was properly capped when it was closed; therefore, people are not likely to contact contaminated soils in this area. The potential for persons to contact contaminated soil in other portions of the site is under investigation. People are not drinking the contaminated water because the area is served by a water supply that is not affected by this contamination. Supply wells that have been impacted were taken off-line. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential for soil vapor intrusion to occur is being evaluated.

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### Owners

#### Current Owner(s)

James M. Miller, Chief, Environmental Division

US Department of the Army

HQ, United States Army Garrison, Fort Drum

Fort Drum NY 13602-5000

### Operators

#### Current Operator(s)

US Department of the Army

Fort Drum Military Installation

Fort Drum NY 13602

US Department of the Army

Fort Drum Military Installation

Fort Drum NY 13602

# Shipment Request Form



Z900000009225

**From:**

Name: Sara Heigel  
Department: Remediation  
Phone: 402-9567  
Account: 7020

**To:**

Ship To 1: Mr. James M. Miller  
Ship To 2: Chief, Environmental Division  
Address: Headquarters  
United States Army Garrison, Fort Drum  
10000 10th Mountain Division Drive  
Fort Drum, NY 13602-5000  
Country: US

**Special Instructions:**

Certified Mail - Return Receipt Requested

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**Requested Date:** 8/10/2012 2:57:54 PM

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To print this form:

- 1) Click the Print button. (Print two copies, one to attach to your package and one to keep for your records.)
- 2) Place the form in a waybill pouch or attach it to your shipment so that the barcode portion of the page can be read and scanned.

Form (1 of 1)



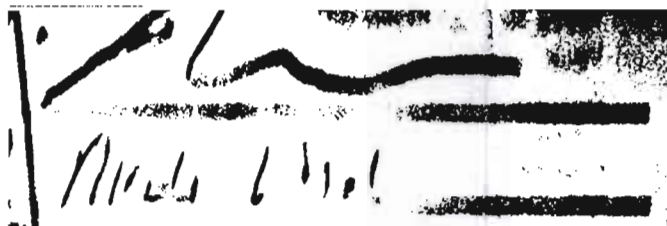


Date: 09/18/2012

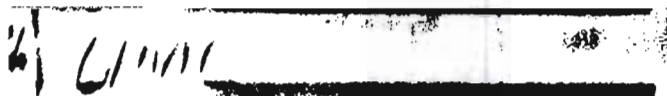
SARA HEIGEL:

The following is in response to your 09/18/2012 request for delivery information on your Certified Mail(TM) item number 7190 1050 5799 2289 7942. The delivery record shows that this item was delivered on 08/14/2012 at 02:18 PM in FORT DRUM, NY 13602 to N WARD. The scanned image of the recipient information is provided below.

Signature of Recipient:



Address of Recipient:



Thank you for selecting the Postal Service for your mailing needs. If you require additional assistance, please contact your local Post Office or postal representative.

Sincerely,

United States Postal Service



**PUBLIC NOTICE**

**State Superfund Program**

Receive Site Information by Email. See "For More Information" to Learn How.

**Site Name:** Fort Drum; waste disposal areas

**September 18, 2012**

**Site No.** 623008

**Tax Map No.** 66.00-3-1

**Site Location:** Great Bend Road and Oneida Avenue, Fort Drum, NY 13602

**Inactive Hazardous Waste Disposal Site Classification Notice**

The Inactive Hazardous Waste Disposal Site Program (the State Superfund Program) is the State's program for identifying, investigating, and cleaning up sites where the disposal of hazardous waste may present a threat to public health and/or the environment. The New York State Department of Environmental Conservation (Department) maintains a list of these sites in the Registry of Inactive Hazardous Waste Disposal Sites (the "Registry"). The site identified above, and located on a map on the reverse side of this page recently had the boundary modified in the Registry as a Class 2 site for the following reason(s):

This site is a portion of a 107,265 acre active Army base which is not on the National Priority List (NPL). The original listing for this site was for the 40-50 acre "Inactive Landfill" which operated from 1940 to 1973. This landfill is now known as the "Old Sanitary Landfill," with a reported size of 50 acres. During the decades of the 1990s and 2000s this site was managed by Resource Conservation Recovery Act (RCRA) program staff in the Division of Solid and Hazardous Materials. In 1991, without formally changing the site boundary, they dropped the site area information from the database and expanded the site description to discuss all Areas of Concern at the base that they were working on. This gave the appearance of a "fenceline-to-fenceline" site definition, which is standard practice for both the RCRA program and for the NPL listing of federal facilities. During 2011, with the reorganization/renaming of the Division of Solid and Hazardous Materials, this site returned to State Superfund Program staff for management. The Registry site boundary is proposed to be set at this time to include the originally listed Old Sanitary Landfill plus an area of the base currently under investigation due to volatile organic compound (VOC) contamination in groundwater and soil vapor (referred to as the "Perchloroethylene (PCE) Plume Area"). The other Areas of Concern at the base which are still under remediation are under the purview of the RCRA or Spills Programs and are not associated with hazardous waste disposal. The size of the Registry site will be reported as 203 acres. The site classification will remain Class 2 even though the Old Sanitary Landfill has been capped, the Remedial Investigation is still ongoing for the PCE Plume Area.

The Department will continue to keep you informed throughout the investigation and cleanup of the site.

**If you own property adjacent to this site and are renting or leasing your property to someone else, please share this information with them. If you no longer wish to be on the contact list for this site or otherwise need to correct our records, please contact the Department's Project Manager listed below.**

**FOR MORE INFORMATION:**

Additional information about this site can be found using the Department's "Environmental Site Remediation Database Search" engine which is located on the internet at: [www.dec.ny.gov/cfm/external/derexternal/index.cfm?pageid=3](http://www.dec.ny.gov/cfm/external/derexternal/index.cfm?pageid=3)

Comments and questions are always welcome and should be directed as follows:

Project Related Questions

Heather Bishop, Project Manager  
NYS Department of Environmental Conservation  
Remedial Bureau A  
625 Broadway  
Albany, New York 12233-7015  
518-402-9620  
hlbishop@gw.dec.state.ny.us

Site Related Health Questions

Wendy S. Kuehner, P.E.  
Public Health Engineer 2  
Bureau of Environmental Exposure Investigation  
Empire State Plaza, Corning Tower, Room 1787  
Albany, NY 12237  
518-402-7860  
beei@health.state.ny.us

**Approximate Site Location**  
Fort Drum; waste disposal areas  
Site ID 623008  
Great Bend Road and Oneida Avenue  
Fort Drum, NY 13602



**Receive Site Updates by Email**

Have site information such as this public notice sent right to your email inbox. NYSDEC invites you to sign up with one or more contaminated sites county email listservs available at the following web page:

[www.dec.ny.gov/chemical/61092.html](http://www.dec.ny.gov/chemical/61092.html) . It's *quick*, it's *free*, and it will help keep you *better informed*.



As a listserv member, you will periodically receive site-related information/announcements for all contaminated sites in the county(ies) you select.

You may continue also to receive paper copies of site information for a time after you sign up with a county listserv, until the transition to electronic distribution is complete.

**Note:** Please disregard if you received this notice by way of a county email listserv.



Garrison Commander  
10000 10<sup>th</sup> Mountain Division Drive  
Fort Drum, NY 13602

Public Works  
85 first Street West  
Fort Drum, NY 13602-5097

Watertown Daily Times  
Attn: Gordon Block  
260 Washington Street  
Watertown, NY 13601

WWTI / My ABC 50  
Attn: Holly Boname  
1222 Arsenal Street  
Watertown, NY 13601

North Country Public Radio  
Attn: Community Calendar  
St. Lawrence University  
Canton, NY 13617-1475

Cheryl D. Lane  
County Clerk  
175 Arsenal Street  
County Courthouse  
Watertown, NY 13601-2528

Allen T. Drake  
108 Red Lake Road  
Theresa, NY 13691

John d. Peck  
23892 County Route 47  
Carthage, NY 13619

Ronald C. Taylor  
Leray Town Supervisor  
25991 Beckwith Road  
Evan Mills, NY 13637

Directorate of Family and  
Morale, Welfare, and Recreation  
Second Floor – Clark Hall  
10720 Mt. Belvedere Blvd.  
Fort Drum, NY 13602

Water Supplier  
The Development Authority of the  
North Country  
317 Washington Street  
Watertown, NY 13601

Carthage Republican-Tribune  
P.O. Box 549  
Carthage, NY 13619

YNN  
340 Eastern Boulevard  
Watertown, NY 13601

Carolyn d. Fitzpatrick, Chair  
Jefferson County Board of Legislators  
County Building, 175 Arsenal Street  
Watertown, NY 13601

Jean A. Bilow, Director  
Jefferson County Public Health  
531 Meade Street  
Watertown, NY 13601

Michael Montigelli  
107 Rodgers Road  
Black River, NY 13612

James A. Nabywaniec  
25183 US Route 11  
Calcium, NY 13616

Cheryl K. Horton  
Philadelphia Town Supervisor  
31321 County Route 29  
Philadelphia, NY 13673

Media Relations Officer  
Main Office  
Public Affairs Office  
10012 S. Riva Ridge Loop  
Fort Drum, NY 13602-5028

Newzjunky Inc.  
Attn: Stephen Smith  
P.O. Box 914  
Watertown, NY 13601

WWNY-TV 7News  
120 Arcade Street  
Watertown, NY 13601

WTNY Radio  
Attn: Nathan Lehman  
134 Mullin Street  
Watertown, NY 13601

Robert F. Hagemann, III  
Jefferson County Administrator  
County Building  
175 Arsenal Street  
Watertown, NY 13601

Donald R. Canfield, Director  
Department of Planning  
175 Arsenal Street  
Watertown, NY 13601

Michael F. Astafan  
811 South James Street  
Carthage, NY 13619

John R. Shaw  
Antwerp Town Supervisor  
40794 County Route 24  
Antwerp, NY 13608-3302

Paul H. Smith  
Wilna Town Supervisor  
20101 Strickland Road  
Carthage, NY 13619

**Electronic copies:**

R. Schick, Director, Division of Environmental Remediation  
A. English, Director, Bureau of Technical Support  
K. Lewandowski, Chief, Site Control Section  
J. Harrington, Director, Remedial Bureau A  
P. Taylor, RHWRE, Region 6  
L. Ambreau, Regional Permit Administrator, Region 6  
S. Litwhiler, Regional CPS, Region 6  
K. Anders, NYSDOH  
W. Kuehner, NYSDOH  
L. Ennist, DER, Bureau of Program Management  
J. Swartwout, Remedial Bureau A  
H. Bishop, Project Manager  
S. Heigel, Site Control Section