

Underground Storage Tank Closure Report

Prepared for:

U.S. Army Corps of Engineers
Metro New York Area
Building 611, Fort Totten
Flushing, New York 11359

Site:

Building Nos. 276, 277, 278
UST Nos. 276N, 276S, 277N, 277S, 278N, 278S
Sievers-Sandberg United States Army Reserve Center
Pedricktown, New Jersey

Prepared by:

Earth Tech, Inc.
2229 Tomlynn Street
Richmond, Virginia 23230

October 23, 1997

Contract No. DACW31-95-D-0097
Delivery Order No. 0015

ET Job No. 21574



**DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
METRO AREA RESIDENT OFFICE
1900 HEMPSTEAD TURNPIKE, SUITE 316
EAST MEADOW, NEW YORK 11554**

REPLY TO
ATTENTION OF:
CENAN-CO-ME

5 December 1997

MEMORANDUM THRU Area Engineer, Metro New York Area

FOR HQ 77th U.S. Army Reserve Command
ATTN: AFRC-ANY-SE (Env.)
Building 200, Fort Totten
Flushing, New York 11359-1016

SUBJECT: Contract No. DACW51-95-D-0097, Delivery Order # 15
Containment Structure Removal and/or Upgrade at Various Locations within
EPA Regions I, II and III
Sievers-Sandberg USARC, Pedricktown, New Jersey

1. Forwarded for your review and records is the Job Completion Reports for the removal of one 550 gallon fuel oil underground storage tank at each of the following buildings: 276N, 276S, 277N, 277S, 278N and 278S at the Sievers-Sandberg USARC in Pedricktown, New Jersey.
2. This work was performed under delivery order modification no. 1501.
3. POC is the undersigned or Edmund Louie-Ng at 718-352-1888.

A handwritten signature in black ink, appearing to read "Donald P. Braun".

Donald P. Braun, P.E.
Resident Engineer

Encl. as

Client: United States Army Corps of Engineers
Project Name: Sievers-Sandberg United States Army Reserve Center, Building No. 276N
ET Job No.: 21574

This document has been reviewed for technical content and quality, clarity, and style in accordance with the internal QA/QC procedures of Earth Tech, Inc.

Acknowledgments:

Technical Review:

<u>Candice Smittle</u> (Name)	<u>Env Scientist</u> (Title)	<u>10/23/97</u> (Date)
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Style Review:

<u>Stephen Maly for Mary Linton</u> (Name)	<u>Rb Manager</u> (Title)	<u>10/23/97</u> (Date)
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Final Review:

<u>Janis Gooden</u> (Name)	<u>Staff Scientist</u> (Title)	<u>10-23-97</u> (Date)
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New Jersey Subsurface Evaluator (No. 0017909):

<u>C. Linton</u> (Name)	<u>Env Scientist</u> (Title)	<u>10/7/97</u> (Date)
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New Jersey Professional Engineer (No. 33056):

<u>J. Linton</u> (Name)	<u>Associate Principal</u> (Title)	<u>10/16/97</u> (Date)
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EXECUTIVE SUMMARY

This report details the clean closure of an underground storage tank (UST) and fulfills the requirements of site investigation reporting activities as detailed in the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (NJAC 7:26E - 3.10) and was conducted in accordance with the approved closure plan for the site.

Earth Tech, Inc. (Earth Tech) was contracted by the U.S. Army Corps of Engineers (USACE), Baltimore District, to remove a 550-gallon No. 2 heating oil UST (designated ~~278N~~^{276N}) located east of Building No. 276 at the Sievers-Sandberg United States Army Reserve Center (USARC) in Pedricktown, New Jersey. The work was conducted under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. Earth Tech is an NJDEP-approved Closure Contractor (Registration No. US00537).

The UST was previously used to store No. 2 heating oil for heating purposes and was empty. On August 25, 1997, Earth Tech excavated and removed the UST. Upon removal, the condition of the UST was examined by an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The UST was in good condition with no visible holes. No soil staining was observed beneath the former UST and groundwater was not encountered in the excavation. Earth Tech cut and cleaned the UST, which was then transported by Superior Sanitation Services to BFI of Philadelphia, Pennsylvania, for disposal. The rinsate water generated during tank cleaning activities was transported by Casie Protank Environmental Services for disposal at Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey.

No soil staining was observed beneath the former UST. Photoionization detector (PID) field screening of excavated soils indicated volatile organic vapor levels ranging from 0.0 parts per million (ppm) to 15.0 ppm. The excavated soils were used as backfill material.

Earth Tech collected four confirmatory soil samples from the excavation floor. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1, using an NJDEP-certified laboratory. All four confirmatory soil samples contained TPH concentrations below the method quantitation limits. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4).

Based on field observations and analytical data, Earth Tech recommends no further action relative to former UST 276N at Building No. 276.

1.0 INTRODUCTION

Earth Tech, an underground storage tank (UST) Closure Contractor (Certification No. US00537) approved by the New Jersey Department of Environmental Protection (NJDEP), was contracted by the United States Army Corps of Engineers (USACE), Baltimore District, to remove USTs at the Sievers-Sandberg United States Army Reserve Center (USARC), Pedricktown, New Jersey, under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. This report details the clean closure of an UST located at Building No. 276 of the Sievers-Sandberg USARC. A Site Location Map is included as Figure 1 in Appendix A. This report fulfills the requirements of site investigation reporting as detailed in the New Jersey Technical Requirements for Site Remediation (NJAC 7:26E-3.10), and provides an overview of the site investigation activities, analytical results, and recommendations.

The Sievers-Sandberg USARC property was acquired by the USACE in 1917, and the Delaware Ordnance Depot was established at Pedricktown in 1918. The depot became the backup storage facility for the Picatinny and Frankfort Arsenals and the Aberdeen Proving Ground. In 1960, the Pedricktown facility became the headquarters for the 42nd and 43rd Artillery, which commanded the Nike Missile Sites in the Philadelphia area. In 1965, the Salem County Technical Institute gained control of the site. In the late 1960s, the 79th Army Reserve Command and the 21st Corps were replaced by the 78th Division of the Army Reserves, which is still stationed at the facility. The eastern portion of the property is currently leased by Salem Community College.

Building No. 276 is a residential building. A 550-gallon fiberglass UST (designated UST 276N) was formerly used to store No. 2 heating oil for the building. The UST was removed because the source of heat at the building is being converted to natural gas. See Plate A1 in Appendix A for a site plan of the Sievers-Sandberg USARC. The UST was not a regulated tank (per NJAC 58:10); however, an UST Closure Plan was submitted to the NJDEP prior to initiating closure activities. The NJDEP UST Closure Approval is included in Appendix B.

2.0 SITE ASSESSMENT

On August 25, 1997, Earth Tech removed one 550-gallon fiberglass UST at the site. Figure 2 in Appendix A shows the general site layout and the location of the UST. Photographic documentation of site activities is included in Appendix C. The UST was oriented parallel to the east side of Building No. 276. No utility lines were located in the vicinity of the UST. A second tank (UST 276S) was removed from Building No. 276 and a separate tank closure report was prepared and submitted to the NJDEP.

Upon tank removal, the UST condition was examined by Ms. Christina Harris, an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The tank was observed to be in good condition with no holes or pitting. No soil staining was observed in the excavation or along the excavation sidewalls. The UST measured approximately 6 feet long by 4 feet in diameter. Earth Tech personnel cut the UST at both ends to provide ventilation and access for tank cleaning. The tank was then cleaned using a pressure washer. The rinsate was collected and transported by Casie Protank Environmental Services for disposal at Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey. The tank disposal certificate is included in Appendix D. The liquid disposal manifest is included in Appendix E.

Earth Tech personnel examined the UST excavation after removing the tank. No soil staining was observed beneath the former UST. Groundwater was not encountered in the excavation. Based on the photoionization detector (PID) field screening of excavated soils, no soils were deemed contaminated (i.e., no PID readings greater than 100 parts per million [ppm]).

Confirmatory soil samples were collected in accordance with NJAC 7:26E-6.4. Earth Tech personnel collected a total of four soil samples from the excavation (PED-276N-SS01, PED-276N-SS02, PED-276N-SS03, and PED-276N-SS04). Field screening of each soil sample using the PID indicated volatile organic vapor readings ranging from 0.4 ppm to 1.0 ppm. Figure 2 in Appendix A depicts the soil sample locations. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1. The samples were analyzed by Industrial & Environmental Analysts, Inc. (IEA), an NJDEP-certified laboratory.

All four samples contained TPH concentrations below the method quantitation limits. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4). Certificates of analysis and chain-of-custody forms are included as Appendix F. Because the tank is not regulated, an executed NJDEP Site Inspection Report Checklist is not included in this report.

Table 1 Soil Analytical Results

Sample Designation and Location	Date Sampled	Depth (fbg)	PID (ppm)	TPH 418.1 (mg/Kg)	Quantitation Limits (mg/Kg)
PED-276N-SS01 east excavation floor	8/25/97	9	1.0	BQL	11
PED-276N-SS02 south excavation floor	8/25/97	9	0.8	BQL	10
PED-276N-SS03 west excavation floor	8/25/97	9	0.8	BQL	11
PED-276N-SS04 north excavation floor	8/25/97	9	0.4	BQL	11
<i>Notes:</i> TPH Total petroleum hydrocarbons fbg Feet below grade BQL Below quantitation limit mg/Kg Milligram per kilogram PID Photoionization detector ppm Parts per million					

The stockpiled soil generated during UST removal, along with imported backfill, was used to backfill the excavation. No soils associated with the UST closure were removed from the site.

3.0 CONCLUSIONS

The following is a summary of Earth Tech's site investigation, findings, and tank closure activities for UST No. 276N at Building No. 276 on the Sievers-Sandberg USARC:

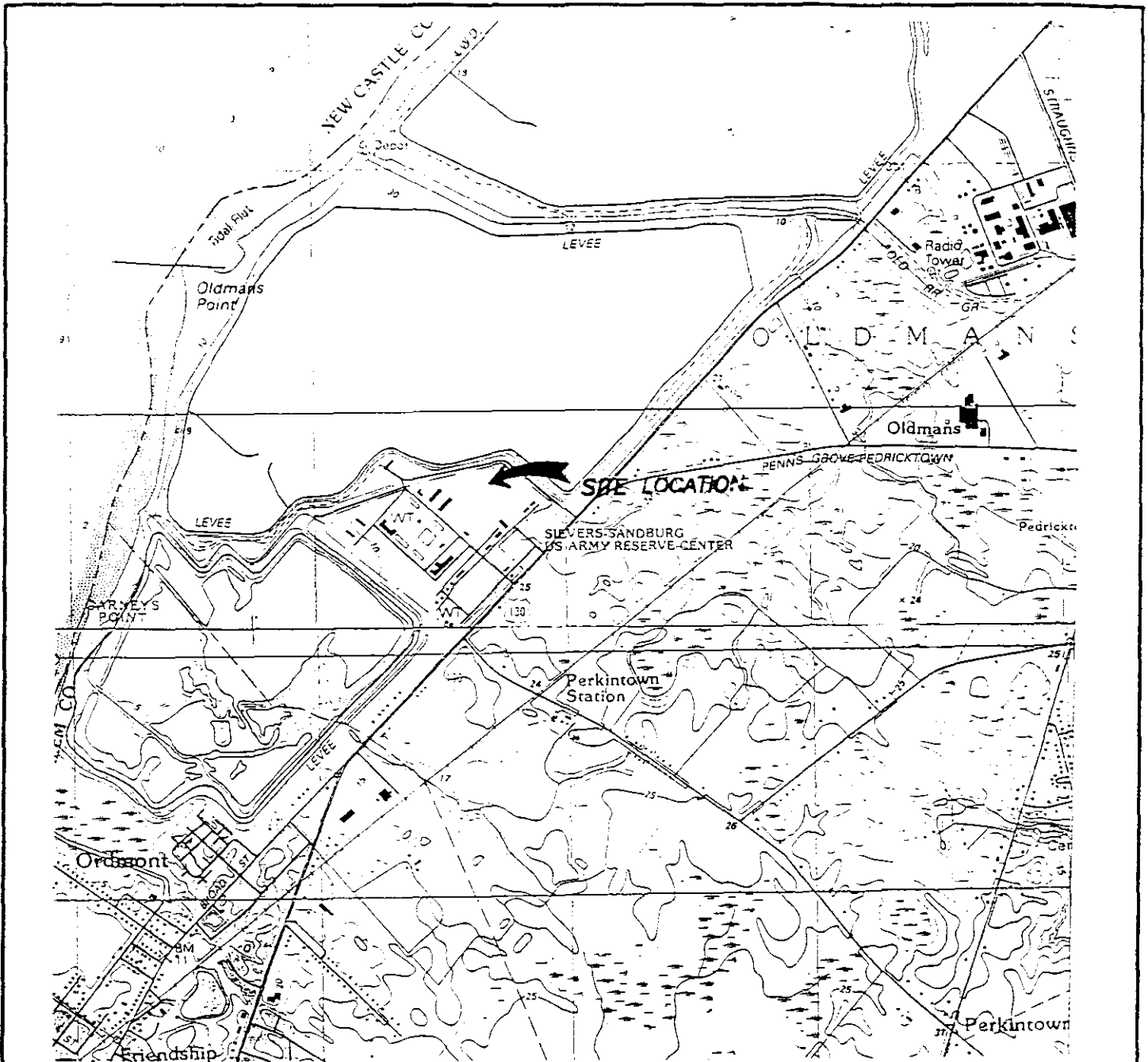
- On August 25, 1997, Earth Tech removed one 550-gallon, fiberglass UST used to store No. 2 heating oil for Building No. 276.

- No holes or pitting were observed in the tank.
- The cleaned UST was transported for disposal to BFI of Philadelphia, Pennsylvania.
- No stained soils were observed in the tank excavation. Groundwater was not encountered in the excavation.
- PID field screening was performed for excavated soils and for soil samples. Vapor readings ranged from 0.0 ppm to 15.0 ppm.
- Four confirmatory soil samples were collected from the base of the UST excavation. Analytical results for the four confirmatory soil samples indicated TPH concentrations below the method quantitation limits.

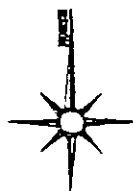
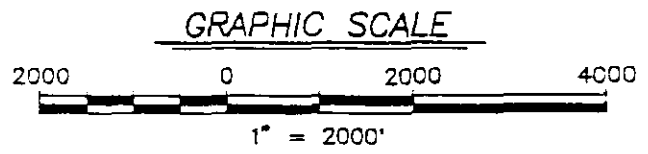
Based on the site investigation results, Earth Tech recommends no further action relative to former UST 276N at Building No. 276.

Appendix A

Figures

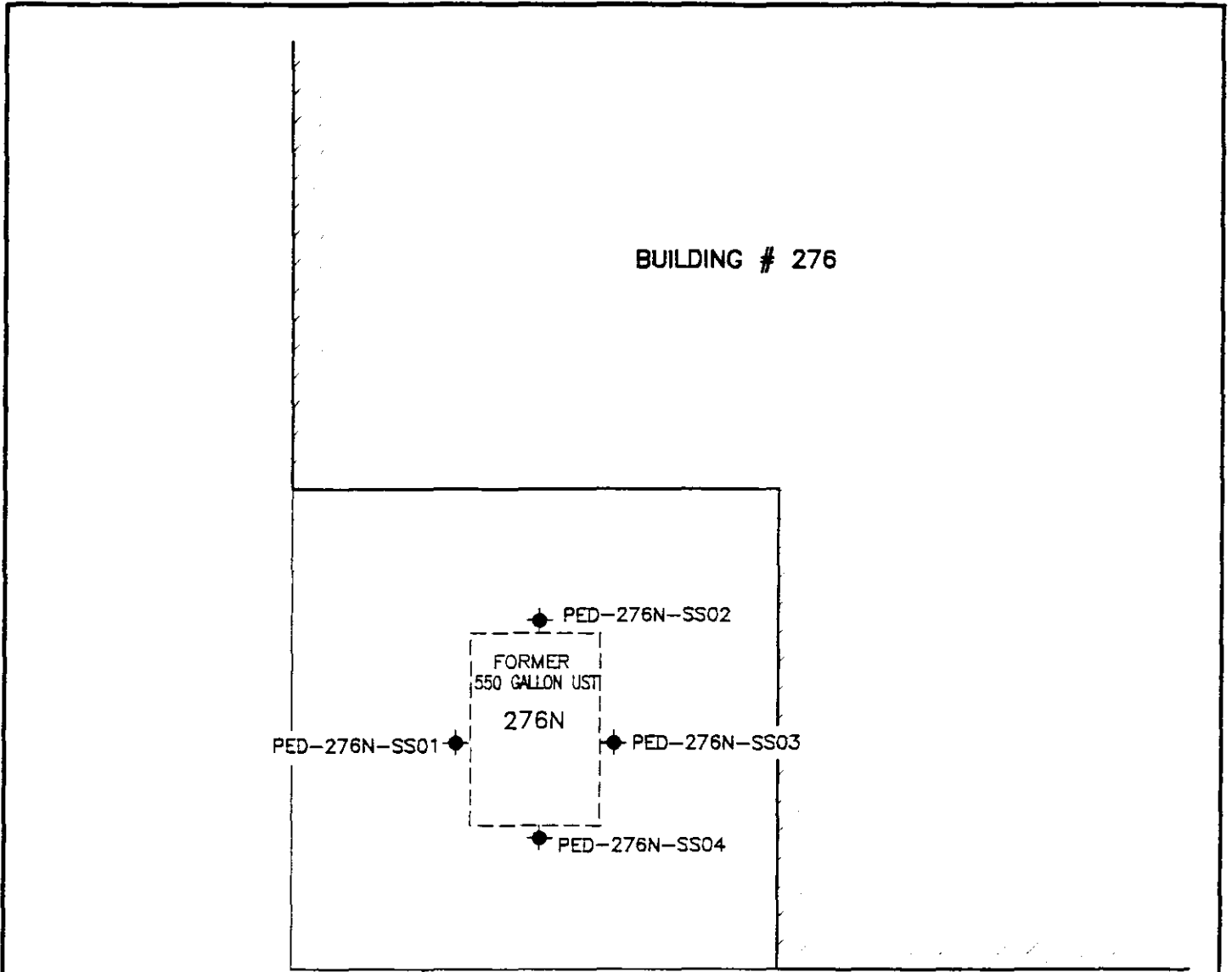


SOURCE:
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 MARCUS HOOK, PA-NJ-DEL 1993
 PHOTOREVISED 1995
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 PENNS GROVE, NJ-DEL 1993
 PHOTOREVISED 1995
 CONTOUR INTERVAL = 10 FEET

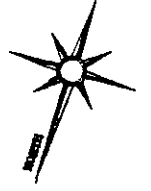


PROJECT: SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER PEDRICKTOWN, NEW JERSEY	
PROJECT MANAGER: J.R.C.	PROJECT NO.: 21574
DRAWN BY: B.W.D.	REVIEWER: C.S.S.

EARTH TECH <small>A TICO INTERNATIONAL LTD. COMPANY</small>	
FIGURE TITLE: SITE LOCATION AND TOPOGRAPHY	
DATE: 8/16/97	SCALE: AS SHOWN
FIGURE NO.: 1	



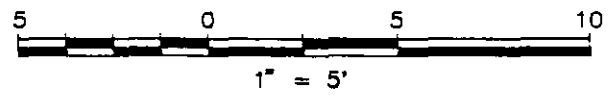
EXTENT OF EXCAVATION
FOR UST #276N




LEGEND

◆ PED-276N-SS03 SOIL SAMPLE LOCATION AND DESIGNATION

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG USARC PEDRICKTOWN, NEW JERSEY		EARTH  TECH	
PROJECT MANAGER: J.C.C.		PROJECT NO.: 21574.01	
DRAWN BY: B.W.D.		REVIEWED BY: K.G.B.	
DATE: 9/29/97		SCALE: AS SHOWN	
FIGURE TITLE: GENERAL SITE DIAGRAM UST #276N		FIGURE NO.: 2	

Appendix B
NJDEP UST Closure Approval

**UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

**DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028**

TMS # C97-0793

UST # 0071994

SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER
BUILDING 273, ROUTE 130
PEDRICKTOWN

SALEM

**THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et. seq:**

REMOVAL OF: six 550 gallon #2 fuel/oil UST(s), and appurtenant piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in the Attachment enclosed within.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

CONTACT PERSON:

JANIS CROWDER

TELEPHONE:

904-354-6409

EFFECTIVE DATE: 08/14/97

**THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.**

H. R. Patel
Joshua Gradwohl, SUPERVISOR
BUREAU OF FIELD OPERATIONS (705)

Appendix C
Photographic Documentation



Photograph No.: 1 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Building 276N before tank removal activities.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: South.



Photograph No.: 2 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: 550-gallon UST being removed from ground.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: South.



Photograph No.: 3 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Bottom of UST 276N excavation.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: Detail.



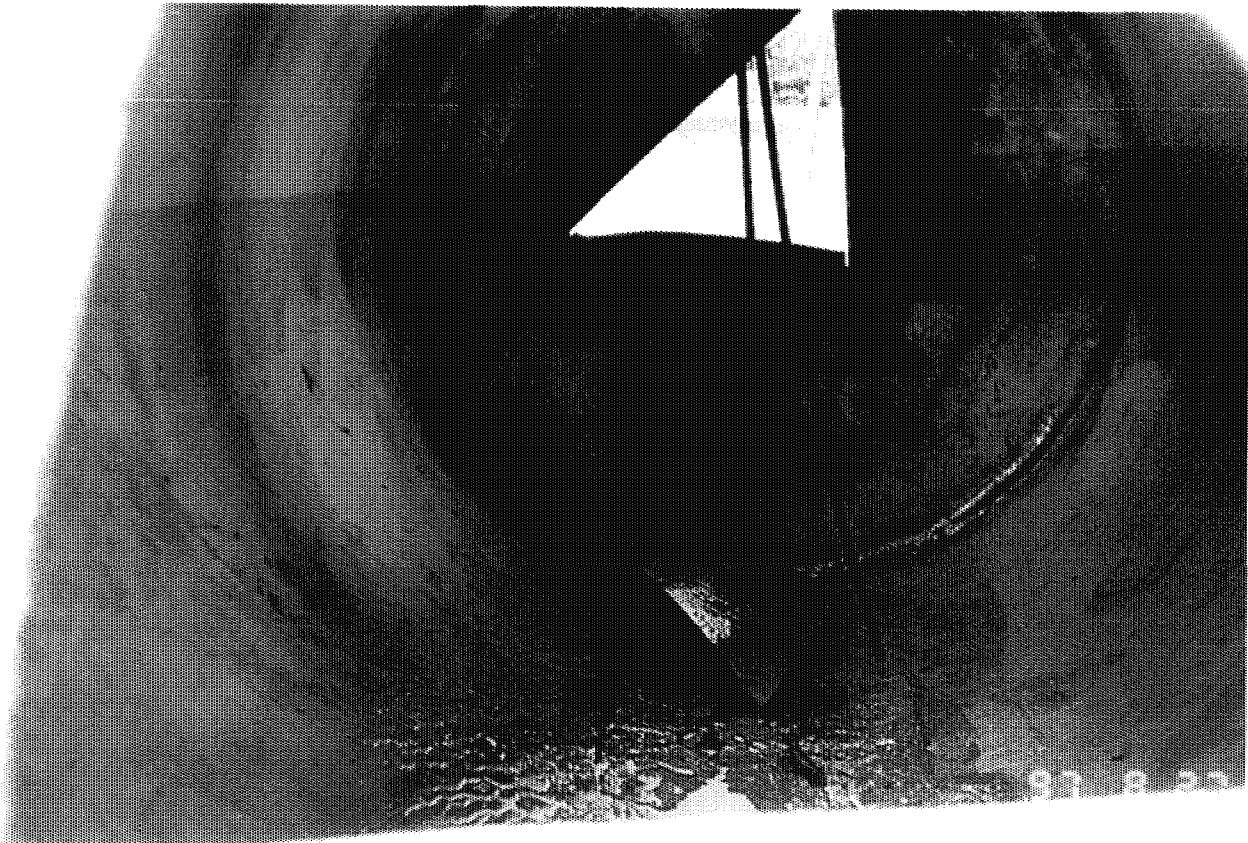
Photograph No.: 4 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Four ventilation soil samples were collected from tank excavation. View: Detail.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97



Photograph No.: 5 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Tanks cleaned using pressure washer.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 6 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97

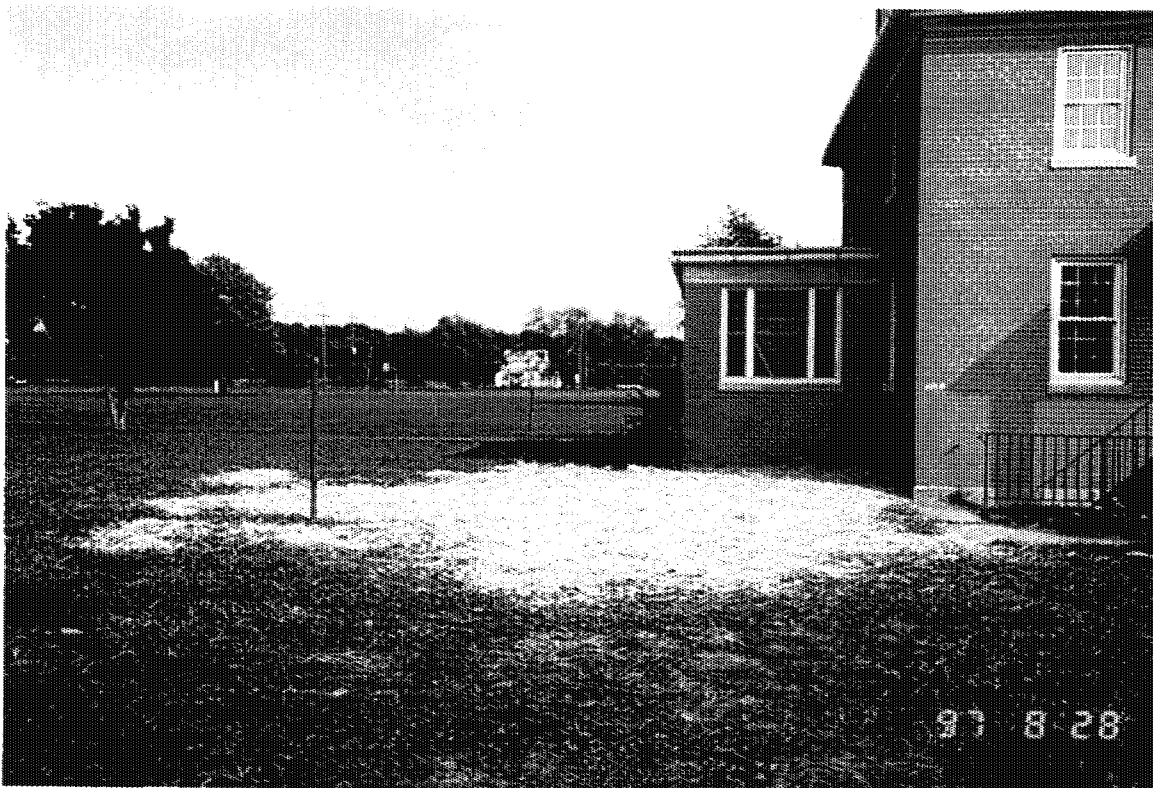
Description: Cleaned UST with holes rendering it unusable.

View: Detail.



Photograph No.: 7 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Tank was loaded into rolloff box for disposal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 8 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276N)
Photographer: B. Rayfield
Description: Excavation backfilled and restored with seed and straw.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/28/97
View: Detail.

Appendix D
Tank Disposal Certificate

Sep-23-97 10:23A

DOTY TANK ACT

P.02
002



Environmental Technology Incorporated (dha. EoA/Rch)

Certification of Tank Disposal

An agreement with American Petroleum Institute recommended practice

Client: **USACE** Job No: **21574** Date: **9/27/97**

Site from which the tank was removed: **Sixmas-Sandburg Reserve Center**

Site to which the tank is to be transported for final disposal:

Tank Description

Type: **50-gallon** Material: **Fiberglass** Condition: **Excellent**

Previous Contents: **Heating Oil**

Tank Markings: **None**

Cleaning Certification

This is to certify that the above described tank has been cleaned in accordance with API methods and procedures and has been rendered suitable for disposal as scrap. All product residues were removed and the interior of the tank was tested and found to be free of harmful vapors.

Prepared by: **[Signature]** Company: **Environmental Technology Incorporated** Date: **9/27/97**

Transportation

This is to certify that the above described tank has been received and will be transported to the disposal site as described above.

Received by: **[Signature]** Shipper or Receiver: **SUPERIOR SANITATION** Date:

Received for Disposal

This is to certify that the above described tank has been received for disposal and will be disposed of in accordance with applicable regulatory requirements.

Received by: **[Signature]** Disposal Facility: **[Signature]** Date:

Comments

Fiberglass tank demolished in roll-off box for disposal after cleaning interior.

© 1997 Environmental Technology Incorporated

Appendix E
Liquid Disposal Manifest

CASIE / PROTANK

ENVIRONMENTAL SERVICES

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. NTD121010920168	Document No. 11184	2. Page 1 3013
3. Generator's Name and Mailing Address Selvers-Sandberg Reserve Ctr. Route #130 Bedricktown NJ 08067			A. Non-hazardous Manifest Document Number NHZ0200 7448	
4. Generator's Phone (609) 758-7143			B. State Generator's ID SAME	
5. Transporter 1 Company Name Casie Ecology Oil Salvage Inc.		6. US EPA ID Number NJ 10 10 14 15 19 19 15 16 19 13		C. State Trans. ID 3 1 1 2 6 15 5
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (609) 535-44
9. Designated Facility Name and Site Address Casie Ecology Oil Salvage, Inc. T-2 2119 W. Mill Rd Trenton NJ 08602		10. US EPA ID Number 10 10 10 14 15 19 19 15 16 19 13		E. State Trans. ID
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No. Type	13. Total Quantity
a. UNIDENTIFIED LIQUID WASTE				14. Unit (Wt/Vol)
				Waste No.
J. Additional Descriptions for Materials Listed Above			← Shipping Codes for Wastes Listed Above	
a.			a.	c.
b.			b.	d.
15. Special handling instructions and Additional information				
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.				
I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 and by applicable state law.				
Printed/Typed Name		Signature		Month Day
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.				
Printed/Typed Name		Signature		Month Day

In case of an emergency or spill, immediately call CASIE (800) 354-2584

GENERATOR

TRANSPORTER

FACILITY

Appendix F

Laboratory Certificates and Chain-of-Custody



IEA
An Aquanon Company

September 8, 1997

Christina Harris
Earth Tech
2231 Tomlynn Street
Richmond VA 23230

IEA Project No.: 2070037P/9708503
IEA Reference No.: W9708391
Client Project I.D.: 22818 PEDRICKTOWN

Dear Ms. Harris,

Transmitted herewith are the results of analyses on eight samples submitted to our laboratory.

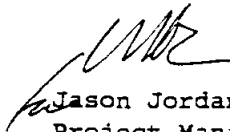
The samples were received intact.

Analyses were performed according to approved methodologies and meet the requirements of the IEA Quality Assurance Program except where noted. Please see the enclosed reports for your results and a copy of the Chain of Custody documentation.

Thank you for selecting IEA for your sample analysis. Please do not hesitate to call me at 1-919-677-0090 or 1-800-444-9919 should you have any questions regarding this report. We look forward to serving you in the future.

Very truly yours,

IEA, Inc.



Jason Jordan
Project Manager

IEA/AEN-NORTH CAROLINA CERTIFICATIONS

Certifying State	Program Type	Lab ID #
Alabama	DW	40210
Arizona	DW, WW (Radiolog. Only)	AZ0572
California	DW, WW, HW Radiolog.	1768
Connecticut	DW, WW, Radiolog.	PH-0135
Iowa	WW	352
Kansas	DW, HW, WW, Radiolog.	E-10158
Kentucky	DW	90049
Maryland	DW, Radiolog.	259
Massachusetts	DW, WW	M-NC039
New Jersey	DW, WW Radiolog.	67719 67681
New York	Radiolog.	11422
North Carolina	DW WW Radiolog.	DW 37720 WW 84 Rad 37720
South Carolina	DW, WW, HW	99021
Tennessee	DW UST App List	02914
Utah	Radiolog. RCRA	E-206 E-226
Virginia	DW, Radiolog.	00179
West Virginia	DW	9908C
Wisconsin	WW	998051010

DW = Drinking Water WW = Wastewater HW = Hazardous Waste Radiolog. = Radiological

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-037 Matrix: Soil
IEA Sample #: 9708503 Date Received: N/A
Client Name: Earth Tech Date Sampled: N/A
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: QC Blank

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 413.1	10 mg/Kg	BQL	08/28/97	09/04/97	CRC / KS

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits
N/A = Not Applicable
Corresponding Samples: 9708503-01 through 08
FORM TPHIRS Rev. 103196

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-037 Matrix: Soil
IEA Sample #: 9708503-05 Date Received: 08/27/97
Client Name: Earth Tech Date Sampled: 08/25/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-276S-SS01

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	10 mg/Kg	BQL	08/28/97	09/04/97	CRC / KS

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-037 Matrix: Soil
IEA Sample #: 9708503-06 Date Received: 08/27/97
Client Name: Earth Tech Date Sampled: 08/25/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-276S-SS02

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 413.1	11 mg/Kg	BQL	08/28/97	09/04/97	CRC / KS

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-037 Matrix: Soil
IEA Sample #: 9708503-07 Date Received: 08/27/97
Client Name: Earth Tech Date Sampled: 08/25/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-276S-SS03

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	BQL	08/28/97	09/04/97	CRC / KS

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-037 Matrix: Soil
IEA Sample #: 9708503-08 Date Received: 08/27/97
Client Name: Earth Tech Date Sampled: 08/25/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-276S-SS04

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	BQL	08/28/97	09/04/97	CRC / KS

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial and Environmental Analysts, Inc. (IEA)
LCS Report for Petroleum Hydrocarbons

IEA Project #:	2070-037	Matrix:	Soil
IEA Sample #:	9708503	Date Received:	N/A
Client Name:	Earth Tech	Date Sampled:	N/A
Client Project I.D.:	22818 Pedricktown	Date Prepared:	08/28/97
Sample I.D.:	LCS 08/28/97	Date Analyzed:	09/04/97
Parameter:	TPH by IR		

Client Number	Method	Spike Added	Spike (mg) Recovered	% Recovery	Blank Conc. (mg)
LCS	EPA 418.1	2.0 mg	2.0 mg	100	10

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Spike recovery range: 60% - 140%
Corresponding Samples: 9708503-01 through 08
N/A = Not Applicable

Industrial and Environmental Analysts, Inc. (IEA)
MS/MSD Report for Petroleum Hydrocarbons

IEA Project #:	2070-037	Matrix:	Soil
IEA Sample #:	9708503-01	Date Received:	08/27/97
Client Name:	Earth Tech	Date Sampled:	08/25/97
Client Project I.D.:	22818 Pedricktown	Date Prepared:	08/28/97
Sample I.D.:	PED-276N-SS01	Date Analyzed:	09/04/97
Parameter:	TPH by IR		

Client Number	Method	Spike Added	Spike (mg) Recovered	% Recovery	Sample Conc. (mg)
9708263-01 MS	EPA 418.1	2.1 mg	1.4 mg	67	BQL
9708263-01 MSD	EPA 418.1	2.1 mg	1.4 mg	67	BQL

RPD Acceptance Range
0 % < 35%

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Spike recovery range: 60% - 140%
RPD = Relative Percent Difference
MCF = Moisture Correction Factor
Corresponding Samples: 9708503-01 through 08
N/A = Not Applicable

Organic Sample Preparation Log
 Petroleum Hydrocarbons in Soil - IR

IEA Sample ID	Client Sample ID	Weight Extracted (g)	% Solid	Dry wt. (g)	Final Volume (ml)	Abs.	ug	Dilution	Recovery (mg/kg)	Adj. QI	Comments
Field Blank	N/A	N/A	N/A	N/A	N/A	0.000		N/A	N/A	N/A	(Correlation Acceptance > 0.997)
0.4 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A	0.029		N/A	N/A	N/A	Correlation Coefficient 0.9998
1.2 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A	0.085		N/A	N/A	N/A	
2.0 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A	0.146		N/A	N/A	N/A	
8.0 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A	0.572		N/A	N/A	N/A	
16 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A	1.080		N/A	N/A	N/A	Method Blank
B1K 8/28	N/A	40.00		40.00	100ml	0.010	0.047	1.0	< 10	N/A	
LC5 8/28	N/A	40.00		40.00		0.141	2.0		100%	2.0	
4708263-01M5	3070-034	36.75	91.88	36.75		0.086	1.2		54%	2.2	
01M5P		36.75	91.88	36.75		0.108	1.5		68%	2.2	
01		36.75	91.88	36.75		0.011	0.062		< 11	11	
02		37.88	94.33	37.88		0.014	0.10		< 11	11	
03		38.35	95.45	38.35		0.082	1.1		29	10	
04		37.75	94.27	37.75		0.001	-0.066		< 11	11	
4708263-01M5	3070-026	40.00	84.92	35.57		0.539	7.8	20	0DL	2.2	
01M5P		35.57	84.92	35.57		0.467	6.8	20	0DL	2.2	
01		35.57	84.92	35.57		0.476	6.9	20	3900	220	
02		35.78	89.33	35.78		0.157	2.2	1.0	61	11	
03		37.52	93.38	37.52		0.344	5.0	1.0	130	11	
04		35.97	87.94	35.97		0.162	2.3	1.0	640	110	
05		36.54	91.14	36.54		0.284	4.1	1.0	110	11	
4708503-01M5	3070-037	40.00	93.61	37.44		0.102	1.4		67%	2.1	
01M5P		37.44	93.61	37.44		0.102	1.4		67%	2.1	
01		37.44	93.61	37.44		0.001	-0.086		< 11	11	
02		38.14	94.92	38.14		0.004	-0.041		< 10	10	
03		37.66	93.99	37.66		0.005	-0.027		< 11	11	
04		36.57	91.05	36.57		0.011	0.062		< 11	11	
05		39.30	97.81	39.30		0.005	-0.027		< 10	10	
06		37.45	93.02	37.45		0.009	0.032		< 11	11	

Test Name	TPH in Soil - IR	Est. Start	8/28/97
Test Codes	PHC-02	Analysis Date	4/4/97
Witness	8/29/97	Prep. Review Date	
		Notchbook	
		Analyst	emf

Organic Sample Preparation Log
Petroleum Hydrocarbons in Soil - II

IEA Sample ID	Client Sample ID	Weight Extracted (g)	% Solid	Dry wt. (g)	Final Volume (ml)	Alv.	mg	Dilution	Results (mg/kg)	Adj. Q1	Comments
Free Blank	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	(Correlation Acceptance > 0.992) Correlation Coefficient
0.4 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	
1.2 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	
2.0 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	
8.0 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	
16 mg/100 ml. std	N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A	Method Blank US Acceptance Range 60% - 140%
97 OK 203-07	2070037	40.17	91.96	36.94	100ml	0.007	0.0027	1.0	< 11	11	
OK		40.02	92.10	36.86	↓	0.013	0.091	↓	< 11	11	
9/14/97											

Test Name	TPH in Soil - IR	Spike Lot #	SP17-098	Est. Start	8/22/97	Notebook	
Test Codes	PHC_02	Free Solvent Lot #	182360	Analysis Date		Analyst	
Witness		Silica Gel Lot #	955799A	Prep. Review/Date			



ILA
An Aquarion Company

3000 WESTON PKWY.
CARY, N.C. 27513
PH # 919-677-0090
FAX # 919-677-0427

CHAIN OF CUSTODY RECORD

NO. 85168

REGULATORY CLASSIFICATION - PLEASE SPECIFY			
<input type="checkbox"/> NPDES	<input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> RCRA	<input type="checkbox"/> OTHER _____
<input type="checkbox"/> STATE CERT. SPECIFY _____			

COMPANY/LOCATION

Page _____ of _____

PROJECT #	PROJECT NAME				CONTAINERS # OF	MATRIX			REQUESTED PARAMETERS
						SOIL	WATER	OTHER	
SAMPLERS: (PLEASE PRINT)	SIGNATURE								
SAMPLE I.D. (28 CHARACTER MAXIMUM)	DATE	TIME	COMP	GRAB					
270-8501	1/2/01				1	✓			
103-8502	1/2/01				1	✓			
103-270-8503	1/2/01			X	1	✓		X	103-270-8503 parameters including xylenes, benzene, toluene, ethyl benzene, and all other hydrocarbons.
103-270-8503	1/2/01			✓	1	✓		X	

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY	DATE	TIME
[Signature]	1/2/01		[Signature]	1/2/01	9:45
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY	DATE	TIME
[Signature]			[Signature]	1/2/01	9:45

IEA QUOTE NO.	IEA PROJECT NO.
W9708391	
PROJECT MANAGER (PLEASE PRINT)	P.O. NO.
[Signature]	

REMARKS ON SAMPLE RECEIPT	IEA REMARKS	FIELD REMARKS / COMMENTS
<input type="checkbox"/> BOTTLE INTACT <input type="checkbox"/> PRESERVED <input checked="" type="checkbox"/> CHILLED <input type="checkbox"/> CUSTODY SEALS <input type="checkbox"/> SEALS INTACT <input type="checkbox"/> SEE REMARKS	RECEIPT TEMPERATURE: 40° Per client request change of method	2070-037P

EA009

Underground Storage Tank Closure Report

Prepared for:
U.S. Army Corps of Engineers
Metro New York Area
Building 611, Ft. Totten
Flushing, New York 11359

Site:
Building No. 276
UST No. 276S
Sievers-Sandberg United States Army Reserve Center
Pedricktown, New Jersey

Prepared by:
Earth Tech, Inc.
2229 Tomlynn Street
Richmond, Virginia 23230

October 23, 1997

Contract No. DACW31-95-D-0097
Delivery Order No. 0015

ET Job No. 21574

Client: United States Army Corps of Engineers
Project Name: Sievers-Sandberg United States Army Reserve Center, Building No. 276S
ET Job No.: 21574

This document has been reviewed for technical content and quality, clarity, and style in accordance with the internal QA/QC procedures of Earth Tech, Inc.

Acknowledgments:

Technical Review:

<u>Candice Somill</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/23/97</u> (Date)
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Style Review:

<u>Stephen Maly for Mary Lubin</u> (Name)	<u>Pub Manager</u> (Title)	<u>10/23/97</u> (Date)
--	-------------------------------	---------------------------

Final Review:

<u>Jamie Clarke</u> (Name)	<u>Staff Scientist</u> (Title)	<u>10-23-97</u> (Date)
-------------------------------	-----------------------------------	---------------------------

New Jersey Subsurface Evaluator (No. 0017909):

<u>C. Plothen</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/7/97</u> (Date)
-----------------------------	----------------------------------	--------------------------

New Jersey Professional Engineer (No. 33056):

<u>AS/R</u> (Name)	<u>Associa Principal</u> (Title)	<u>10/16/97</u> (Date)
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Appendix D	Tank Disposal Certificate
Appendix E	Liquid Disposal Manifest
Appendix F	Laboratory Certificates and Chain-of-Custody

EXECUTIVE SUMMARY

This report details the clean closure of an underground storage tank (UST) and fulfills the requirements of site investigation reporting activities as detailed in the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (NJAC 7:26E - 3.10) and was conducted in accordance with the approved closure plan for the site.

Earth Tech was contracted by the U.S. Army Corps of Engineers (USACE), Baltimore District, to remove a 550-gallon No. 2 heating oil UST (designated UST 276S) located west of Building No. 276 at the Sievers-Sandberg United States Army Reserve Center (USARC) in Pedricktown, New Jersey. The work was conducted under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. Earth Tech is an NJDEP-approved Closure Contractor (Registration No. US00537).

The UST was previously used to store No. 2 heating oil for heating purposes and was empty. On August 25, 1997, Earth Tech excavated and removed the UST. Upon removal, the condition of the UST was examined by an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The UST was in good condition with no visible holes. No soil staining was observed beneath the former UST, and groundwater was not encountered in the excavation. Earth Tech cut and cleaned the UST, which was then transported by Superior Sanitation Services to BFI of Philadelphia, Pennsylvania, for disposal. The rinsate water generated during tank cleaning activities was removed by Casie Protank Environmental Services and transported for disposal to Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey.

No soil staining was observed beneath the former UST. Photoionization detector (PID) field screening of the excavated soils and the soil samples indicated volatile organic vapor levels ranging from 0.0 parts per million (ppm) to 3.0 ppm. The excavated soils were used as backfill material.

Earth Tech collected four confirmatory soil samples from the excavation floor. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1, using an NJDEP-certified laboratory. All four confirmatory soil samples contained TPH concentrations below the method quantitation limits. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4).

Based on field observations and analytical data, Earth Tech recommends no further action relative to former UST 276S at Building No. 276.

1.0 INTRODUCTION

Earth Tech, an underground storage tank (UST) Closure Contractor (Certification No. US00537) approved by the New Jersey Department of Environmental Protection (NJDEP), was contracted by the United States Army Corps of Engineers (USACE), Baltimore District, to remove USTs at the Sievers-Sandberg United States Army Reserve Center (USARC), Pedricktown, New Jersey, under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. This report details the clean closure of an UST located at Building No. 276 of the Sievers-Sandberg USARC. A Site Location Map is included as Figure 1 in Appendix A. This report fulfills the requirements of site investigation reporting as detailed in the New Jersey Technical Requirements for Site Remediation (NJAC 7:26E-3.10), and provides an overview of the site investigation activities, analytical results, and recommendations.

The Sievers-Sandberg USARC property was acquired by the USACE in 1917, and the Delaware Ordnance Depot was established at Pedricktown in 1918. The depot became the backup storage facility for the Picatinny and Frankfort Arsenals and the Aberdeen Proving Ground. In 1960, the Pedricktown facility became the headquarters for the 42nd and 43rd Artillery, which commanded the Nike Missile Sites in the Philadelphia area. In 1965, the Salem County Technical Institute gained control of the site. In the late 1960s, the 79th Army Reserve Command and the 21st Corps were replaced by the 78th Division of the Army Reserves, which is still stationed at the facility. The eastern portion of the property is currently leased by Salem Community College.

Building No. 276 is a former residential building. A 550-gallon fiberglass UST (designated 276S) was formerly used to store No. 2 heating oil for the building. The UST was removed because the source of heat at the building is being converted to natural gas. See Plate A1 in Appendix A for a site plan of the Sievers-Sandberg USARC. The UST was not a regulated tank (per NJAC 58:10); however, an UST Closure Plan was submitted to the NJDEP prior to initiating closure activities. The NJDEP UST Closure Approval is included in Appendix B.

2.0 SITE ASSESSMENT

On August 25, 1997, Earth Tech removed one 550-gallon fiberglass UST at the site. Figure 2 in Appendix A shows the general site layout and the location of the UST. Photographic documentation of site activities is included in Appendix C. The UST was oriented parallel to the west side of Building No. 276. No utility lines were located in the vicinity of the UST. A second tank (276N) was removed from Building No. 276, and a separate tank closure report was prepared and submitted to the NJDEP.

Upon tank removal, the UST condition was examined by Ms. Christina Harris, an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The tank was observed to be in good condition with no holes or pitting. No soil staining was observed in the excavation or along the excavation sidewalls. The UST measured approximately 6 feet long by 4 feet in diameter. Earth Tech personnel cut the UST at both ends to provide ventilation and access for tank cleaning. The tank was then cleaned using a pressure washer. The rinsate was collected by Casie Protank Environmental Services and transported for disposal to Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey. The tank disposal certificate is included in Appendix D. The liquid disposal manifest is included in Appendix E.

Earth Tech personnel examined the UST excavation after removing the tank. No soil staining was observed beneath the former UST. Groundwater was not encountered in the excavation. Based on the photoionization detector (PID) field screening of the excavated soils, no soils were deemed contaminated (i.e., no PID readings greater than 100 parts per million [ppm]).

Confirmatory soil samples were collected in accordance with NJAC 7:26E-6.4. Earth Tech personnel collected a total of four soil samples from the excavation (PED-276S-SS01, PED-276S-SS02, PED-276S-SS03, and PED-276S-SS04). Field screening of each soil sample using the PID indicated volatile organic vapor readings ranging from 1.3 ppm to 3.0 ppm. Figure 2 in Appendix A depicts the soil sample locations. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1. The samples were analyzed by Industrial & Environmental Analysts, Inc. (IEA), an NJDEP-certified laboratory.

All four samples contained TPH concentrations below the method quantitation limits. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4). Certificates of analysis and chain-of-custody forms are included as Appendix F. Because the tank is not regulated an executed NJDEP Site Inspection Report Checklist is not included in this report.

Table 1 Soil Analytical Results

Sample Designation and Location	Date Sampled	Depth (fbg)	TPH 418.1 (mg/Kg)	PID (ppm)	Detection Limits (mg/Kg)
PED-276S-SS01 east excavation floor	8/25/97	9	BQL	2.2	10
PED-276S-SS02 south excavation floor	8/25/97	9	BQL	3.0	11
PED-276S-SS03 west excavation floor	8/25/97	9	BQL	1.3	11
PED-276S-SS04 north excavation floor	8/25/97	9	BQL	1.7	11
<i>Notes:</i> TPH Total petroleum hydrocarbons fbg Feet below ground BQL Below quantitation limits mg/Kg Milligram per kilogram PID Photoionization detector ppm Parts per million					

The stockpiled soil generated during UST removal, along with imported backfill, was used to backfill the excavation. No soils associated with the UST closure were removed from the site.

3.0 CONCLUSIONS

The following is a summary of Earth Tech's site investigation, findings, and tank closure activities for UST No. 276S at Building No. 276 on the Sievers-Sandberg USARC:

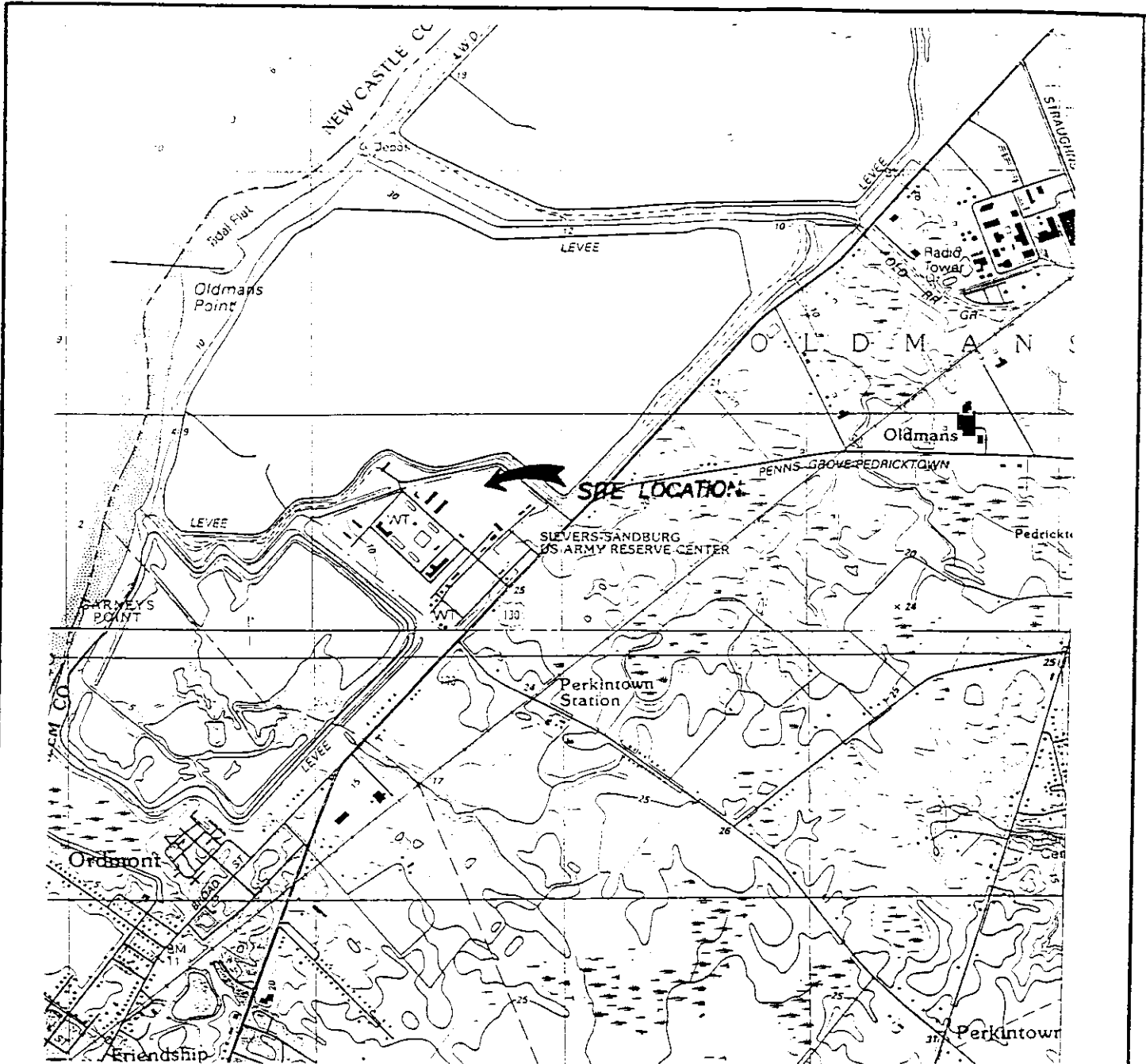
- On August 25, 1997, Earth Tech removed one 550-gallon, fiberglass UST used to store No. 2 heating oil for Building No. 276.

- No holes or pitting were observed in the tank.
- The cleaned UST was transported for disposal to BFI of Philadelphia, Pennsylvania.
- No stained soils were observed in the tank excavation. Groundwater was not encountered in the excavation.
- PID field screening was performed for excavated soils and on soil samples. Vapor readings ranged from 0.0 ppm to 3.0 ppm.
- Four confirmatory soil samples were collected from the UST excavation. Analytical results for the four soil samples indicated TPH concentrations below the method quantitation limits of 10 milligrams per Kilogram (mg/Kg) and 11 mg/Kg.

Based on the site investigation results, Earth Tech recommends no further action relative to former UST 276S at Building No. 276.

Appendix A

Figures

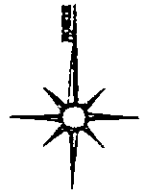
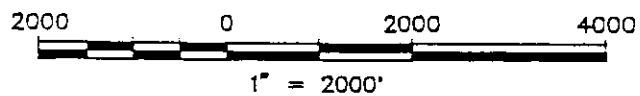


SOURCE:
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 MARCUS HOOK, PA-NJ-DEL 1993
 PHOTOREVISED 1995

U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 PENNS GROVE, NJ-DEL 1993
 PHOTOREVISED 1995

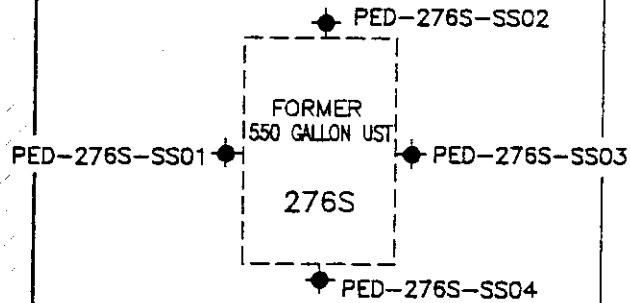
CONTOUR INTERVAL = 10 FEET

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER PEDRICKTOWN, NEW JERSEY		EARTH TECH <small>A TYCO INTERNATIONAL LTD. COMPANY</small>	
PROJECT MANAGER: J.R.C.		PROJECT NO.: 21574	
DRAWN BY: R.W.D.		REVIEWER: G.S.S.	
DATE: 8/15/99	SCALE: 1" = 2000'	FIGURE NO.: 1	

BUILDING # 276



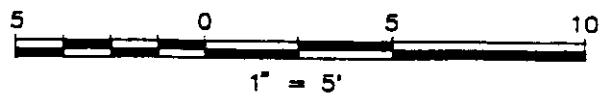
EXTENT OF EXCAVATION
FOR UST #276S




LEGEND

◆ PED-276S-SS03 SOIL SAMPLE LOCATION AND DESIGNATION

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG USARC PEDRICKTOWN, NEW JERSEY		EARTH  TECH	
PROJECT MANAGER: J.C.C.		PROJECT NO.: 21574.01	
DRAWN BY: B.W.D.		REVIEWED BY: K.G.B.	
DATE: 9/29/97	SCALE: AS SHOWN	FIGURE NO.: 2	

Appendix B

NJDEP UST Closure Approval

**UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

**DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028**

TMS # C97-0793

UST # 0071994

SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER
BUILDING 273, ROUTE 130
PEDRICKTOWN

SALEM

**THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et seq:**

REMOVAL OF: six 550 gallon #2 fuel/oil UST(s), and appurtenant piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in the Attachment enclosed within.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

CONTACT PERSON:

JANIS CROWDER

TELEPHONE:

804-354-6409

EFFECTIVE DATE: 08/14/97

**THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.**

H. R. Patel
Joshua Gradwohl, SUPERVISOR
BUREAU OF FIELD OPERATIONS (705)

Appendix C
Photographic Documentation



Photograph No.: 1 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: Building 276S prior to excavation activities.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: South.



Photograph No.: 2 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: 550-gallon UST and associated piping were removed from excavation.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: Southeast.



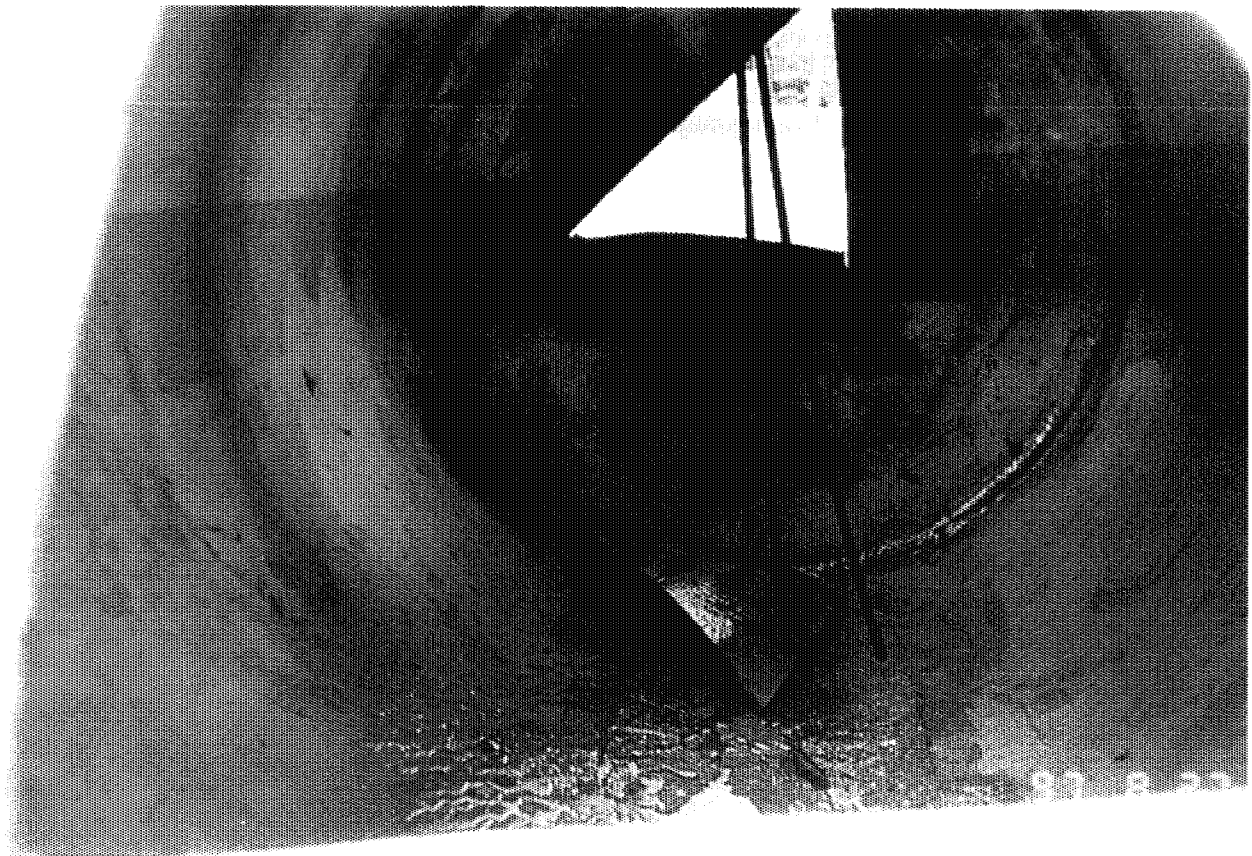
Photograph No.: 3 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: Excavation was backfilled with clean excavated soil.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: West.



Photograph No.: 4 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: Tanks cleaned using pressure washer.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



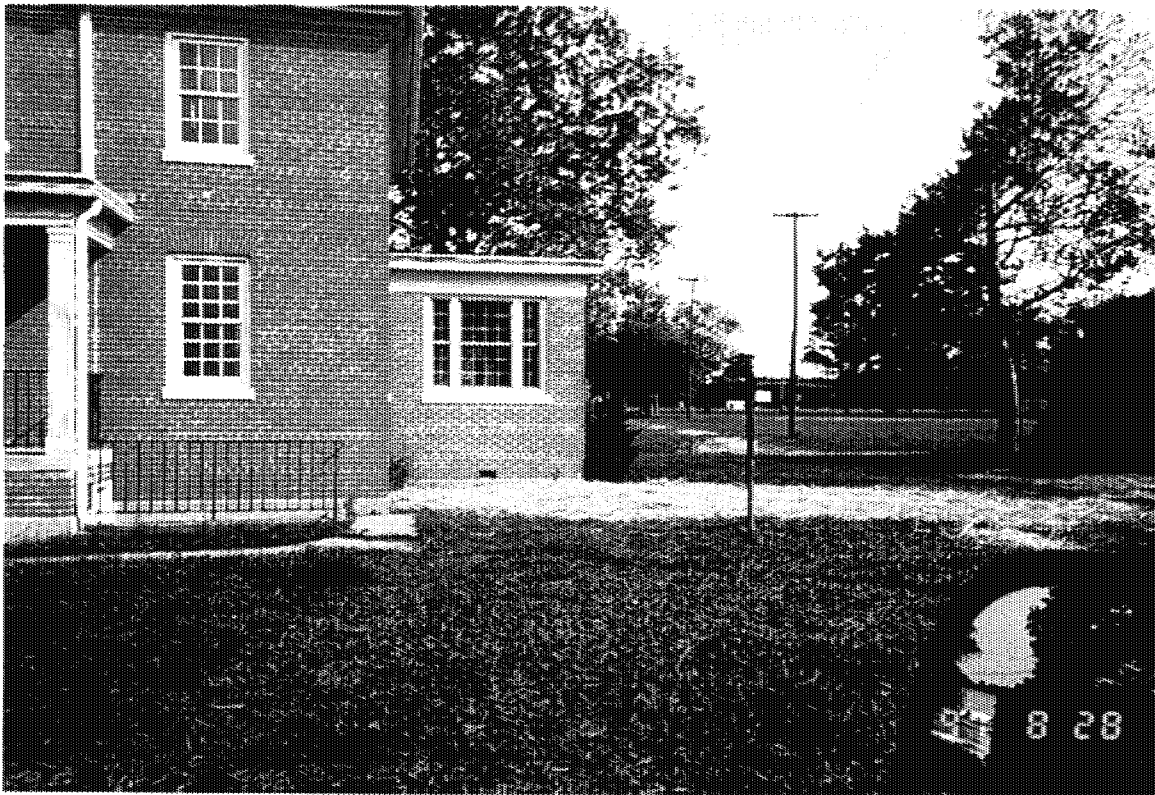
Photograph No.: 5 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: Cleaned UST with holes rendering it unusable.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 6 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S)
Photographer: B. Rayfield
Description: Tank was loaded into rolloff box for disposal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 7 Contract No.: DACW31-95-D-0097 Earth Tech Job No. 21574
Location: Pedricktown U.S. Army Reserve Center (Bldg 276S) D.O. No.: 016
Photographer: B. Rayfield Date: 8/28/97
Description: Building 276S excavation backfilled and restored with seed and straw. View: South.

tech

engineering & construction total water management

environmental services & remediation transportation

Underground Storage Tank Closure Report

Prepared for:
U.S. Army Corps of Engineers
Metro New York Area
Building 611, Fort Totten
Flushing, New York 11359

Site:
Building No. 277
UST No. 277N
Sievers-Sandberg United States Army Reserve Center
Pedricktown, New Jersey

Prepared by:
Earth Tech, Inc.
2229 Tomlynn Street
Richmond, Virginia 23230

October 23, 1997

Contract No. DACW31-95-D-0097
Delivery Order No. 0015

ET Job No. 21574

Client: United States Army Corps of Engineers
Project Name: Sievers-Sandberg United States Army Reserve Center, Building No. 277N
ET Job No.: 21574

This document has been reviewed for technical content and quality, clarity, and style in accordance with the internal QA/QC procedures of Earth Tech, Inc.

Acknowledgments:

Technical Review:

<u>Candice Somerville</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/23/97</u> (Date)
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Style Review:

<u>Steph M. ... Dr. Mary R. ...</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/23/97</u> (Date)
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Final Review:

<u>Janis Gowder</u> (Name)	<u>Staff Scientist</u> (Title)	<u>10-23-97</u> (Date)
-------------------------------	-----------------------------------	---------------------------

New Jersey Subsurface Evaluator (No. 6017909):

<u>Cliff ...</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/27/97</u> (Date)
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New Jersey Professional Engineer (No. 33056):

<u>[Signature]</u> (Name)	<u>Associate Principal</u> (Title)	<u>10-16-97</u> (Date)
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Appendix C	Photographic Documentation
Appendix D	Tank Disposal Certificate
Appendix E	Liquid Disposal Manifest
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EXECUTIVE SUMMARY

This report details the clean closure of an underground storage tank (UST) and fulfills the requirements of site investigation reporting activities as detailed in the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (NJAC 7:26E - 3.10), and was conducted in accordance with the approved closure plan for the site.

Earth Tech was contracted by the U.S. Army Corps of Engineers (USACE), Baltimore District, to remove a 550-gallon No. 2 heating oil UST located east of Building No. 277 at the Sievers-Sandberg United States Army Reserve Center (USARC) in Pedricktown, New Jersey. The work was conducted under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. Earth Tech is an NJDEP-approved Closure Contractor (Registration No. US00537).

The UST was previously used to store No. 2 heating oil for heating purposes and was empty. On August 26, 1997, Earth Tech excavated and removed the UST. Upon removal, the condition of the UST was examined by an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The UST was in good condition with no visible holes. No soil staining was observed beneath the former UST and groundwater was not encountered in the excavation. Earth Tech cut and cleaned the UST, which was then transported by Superior Sanitation Services to BFI of Philadelphia, Pennsylvania, for disposal. The rinsate water generated during tank cleaning activities was transported by Casie Protank Environmental Services for disposal at Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey.

No soil staining was observed beneath the former base of the UST. Photoionization detector (PID) field screening of excavated soils and soil samples indicated volatile organic vapor levels ranging from 0.0 parts per million (ppm) to 7.0 ppm. The excavated soils were used as backfill material.

Earth Tech collected four confirmatory soil samples from the excavation floors. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1, using an NJDEP-certified laboratory. Three samples, PED-277N-SS01, PED-277N-SS02, and PED-277N-SS04, contained TPH concentrations below the method quantitation limits of 10 milligrams per kilogram (mg/Kg), 11 mg/Kg, and 12 mg/Kg, respectively. The sample collected from the west side of the excavation, PED-277N-SS03, had a TPH concentration of 110 mg/Kg, which is below the most stringent NJDEP Soil Cleanup Criteria of 10,000 mg/Kg for total organic compounds in soils. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4).

Based on field observations and analytical data, Earth Tech recommends no further action relative to former UST 277N at Building No. 277.

1.0 INTRODUCTION

Earth Tech, an underground storage tank (UST) Closure Contractor (Certification No. US00537) approved by the New Jersey Department of Environmental Protection (NJDEP), was contracted by the United States Army Corps of Engineers (USACE), Baltimore District, to remove USTs at the Sievers-Sandberg United States Army Reserve Center (USARC), Pedricktown, New Jersey, under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. This report details the clean closure of an UST located at Building No. 277 of the Sievers-Sandberg USARC. A Site Location Map is included as Figure 1 in Appendix A. This report fulfills the requirements of site investigation reporting as detailed in the New Jersey Technical Requirements for Site Remediation (NJAC 7:26E-3.10), and provides an overview of the site investigation activities, analytical results, and recommendations.

The Sievers-Sandberg USARC property was acquired by the USACE in 1917, and the Delaware Ordinance Depot was established at Pedricktown in 1918. The depot became the backup storage facility for the Picatinny and Frankfort Arsenals and the Aberdeen Proving Ground. In 1960, the Pedricktown facility became the headquarters for the 42nd and 43rd Artillery, which commanded the Nike Missile Sites in the Philadelphia area. In 1965, the Salem County Technical Institute gained control of the site. In the late 1960s, the 79th Army Reserve Command and the 21st Corps were replaced by the 78th Division of the Army Reserves, which is still stationed at the facility. The eastern portion of the property is currently leased by Salem Community College.

Building No. 277 is a former residential building. A 550-gallon fiberglass UST (designated UST 277N) at the site was formerly used to store No. 2 heating oil for the building. The UST was removed because the source of heat at the building is being converted to natural gas. See Plate A1 in Appendix A for a site plan of the Sievers-Sandberg USARC. The UST was not a regulated tank (per NJAC 58:10); however, an UST Closure Plan was submitted to the NJDEP prior to initiating closure activities. The NJDEP UST Closure Approval is included in Appendix B.

2.0 SITE ASSESSMENT

On August 26, 1997, Earth Tech removed one 550-gallon fiberglass UST at the site. Figure 2 in Appendix A shows the general site layout and the location of the UST. Photographic documentation of site activities is included in Appendix C. The UST was oriented parallel to the east side of Building No. 277. No utility lines were located in the vicinity of the UST. A second tank (UST 276S) was removed from Building No. 276 and a separate tank closure report was prepared and submitted to the NJDEP.

Upon tank removal, the UST condition was examined by Ms. Christina Harris, an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The tank was observed to be in good condition with no holes or pitting. No soil staining was observed in the excavation or along the excavation sidewalls. The UST measured approximately 6 feet long by 4 feet in diameter. Earth Tech personnel cut the UST at both ends to provide ventilation and access for tank cleaning. The tank was then cleaned using a pressure washer. The rinsate was collected by Casie Protank Environmental Services and transported for disposal at Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey. The tank disposal certificate is included in Appendix D. A liquid disposal manifest is included in Appendix E.

Earth Tech personnel examined the UST excavation after removing the tank. No soil staining was observed beneath the former UST. Groundwater was not encountered in the excavation. Based on the photoionization detector (PID) field screening of the excavated soils, no soils were deemed contaminated (i.e., no PID readings greater than 100 parts per million [ppm]).

Confirmatory soil samples were collected in accordance with NJAC 7:26E-6.4. Earth Tech personnel collected a total of four soil samples from the excavation (PED-277N-SS01, PED-277N-SS02, PED-277N-SS03, and PED-277N-SS04). Field screening of each soil sample using the PID indicated volatile organic vapor readings ranging from 2.8 ppm to 7.0 ppm. Figure 2 in Appendix A depicts the soil sample locations. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1. The samples were analyzed by Industrial & Environmental Analysts, Inc. (IEA), an NJDEP-certified laboratory.

Three samples, PED-277N-SS01, PED-277N-SS02, and PED-277N-SS04, contained TPH concentrations below the method quantitation limit of 10 milligrams per kilogram (mg/Kg), 11 mg/Kg, and 12 mg/Kg, respectively. One sample, PED-277N-SS03, collected from the west end of the excavation, had a TPH concentration of 110 mg/Kg, which is below the most stringent NJDEP Soil Cleanup Criteria of 10,000 mg/Kg for total organic compounds in soils. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4). Certificates of analysis and chain-of-custody forms are included as Appendix F. Because the tank is not regulated, an executed NJDEP Site Inspection Report Checklist is not included in this report.

Table 1 Soil Analytical Results

Sample Designation and Location	Date Sampled	Depth (fbg)	PID (ppm)	TPH 418.1 (mg/Kg)	Quantitation Limits (mg/Kg)
PED-277N-SS01 east excavation floor	8/26/97	9	4.0	BQL	10
PED-277N-SS02 south excavation floor	8/26/97	9	3.0	BQL	11
PED-277N-SS03 west excavation floor	8/26/97	9	7.0	110	12
PED-277N-SS04 north excavation floor	8/26/97	9	2.8	BQL	12
<i>Notes:</i> TPH Total petroleum hydrocarbons mg/Kg Milligram per kilogram fbg Feet below grade BQL Below quantitation limit PID Photoionization detector ppm Parts per million					

The stockpiled soil generated during UST removal, along with imported backfill, was used to backfill the excavation. No soils associated with the UST closure were removed from the site.

3.0 CONCLUSIONS

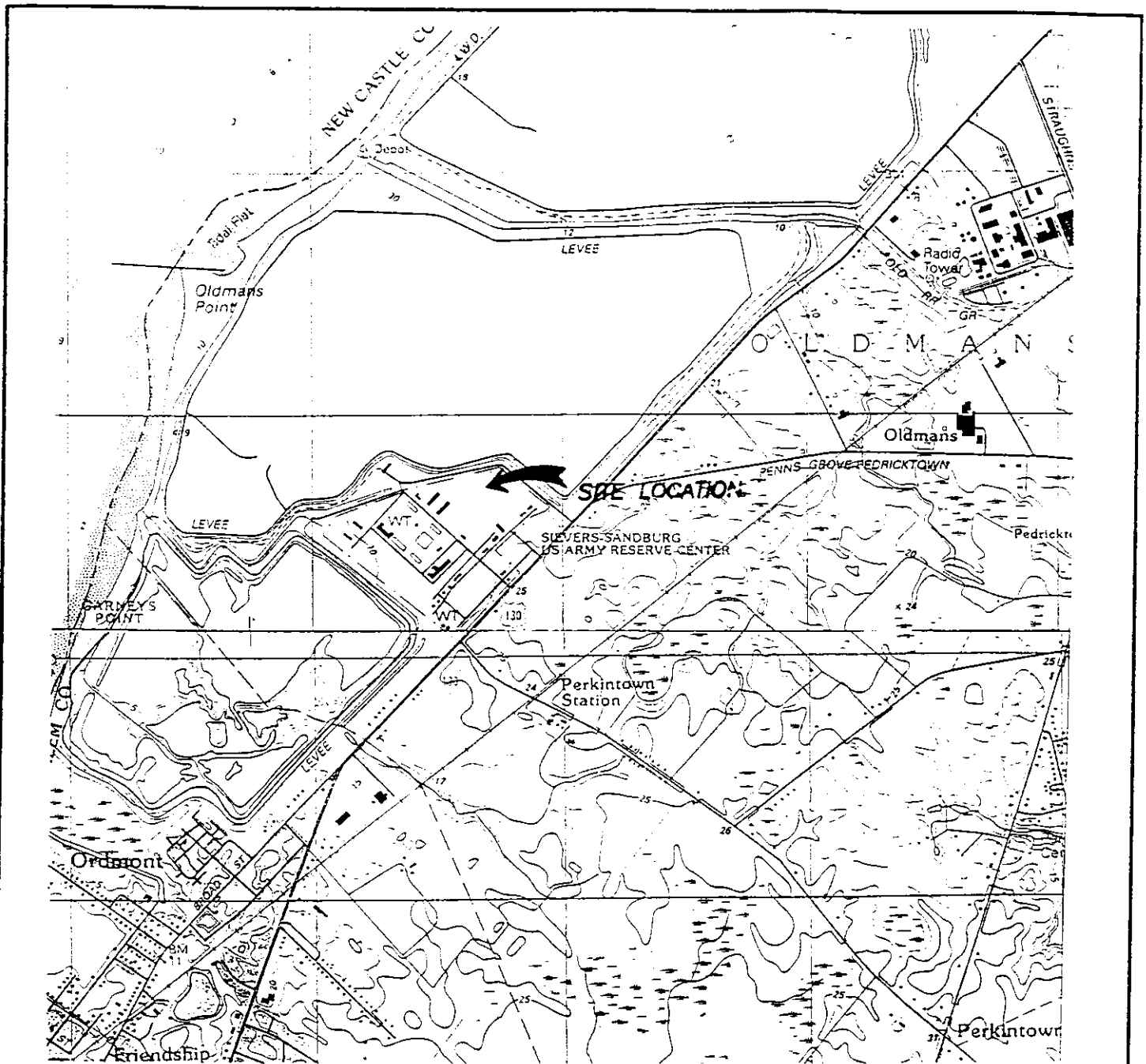
The following is a summary of Earth Tech's site investigation, findings, and tank closure activities for UST No. 277N at Building No. 277 on the Sievers-Sandberg USARC:

- On August 26, 1997, Earth Tech removed one 550-gallon, fiberglass UST used to store No. 2 fuel oil for Building No. 277.
- No holes or pitting were observed in the tank.
- The cleaned UST was transported for disposal to BFI of Philadelphia, Pennsylvania.
- No stained soils were observed in the tank excavation. Groundwater was not encountered in the excavation.
- PID field screening was performed for excavated soils and soil samples. Vapor readings ranged from 0.0 ppm to 7.0 ppm.
- Four confirmatory soil samples were collected from the UST excavation. Soil sample PED-277N-SS03, collected from the west end of the excavation, contained a TPH concentration of 110 mg/Kg, which is below the NJDEP criteria of 10,000 mg/Kg for total organic compounds in soils. The remaining three confirmatory samples had TPH concentrations below the method quantitation limit.

Based on the site investigation results, Earth Tech recommends no further action relative to former UST 277N at Building No. 277.

Appendix A

Figures

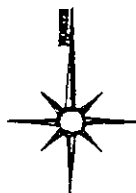
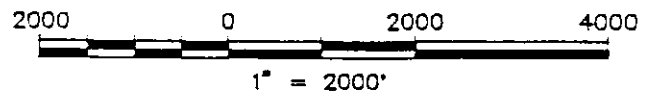


SOURCE:
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 MARCUS HOOK, PA-NJ-DEL 1993
 PHOTOREVISED 1995

U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 PENNS GROVE, NJ-DEL 1993
 PHOTOREVISED 1995

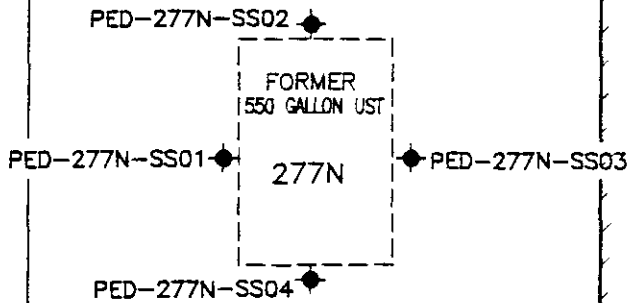
CONTOUR INTERVAL = 10 FEET

GRAPHIC SCALE



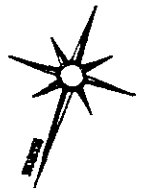
PROJECT: SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER PEDRICKTOWN, NEW JERSEY		EARTH TECH <small>A TUCO INTERNATIONAL LTD. COMPANY</small>	
PROJECT MANAGER: J.R.C.		PROJECT NO.: 21574	
DRAWN BY: B.W.D.		REVIEWER: C.S.S.	
DATE: 8/18/97		SCALE: 1" = 2000'	
FIGURE TITLE: SITE LOCATION AND TOPOGRAPHY		FIGURE NO.: 1	

BUILDING # 277



EXTENT OF EXCAVATION
FOR UST #277N

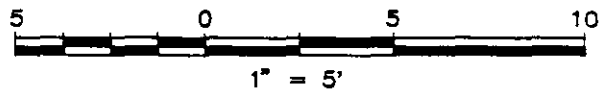
SERVICE ROAD




LEGEND

◆ PED-277N-SS03 SOIL SAMPLE LOCATION AND DESIGNATION

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG USARC PEDRICKTOWN, NEW JERSEY		EARTH  TECH	
PROJECT MANAGER: J.C.C.		PROJECT NO.: 21574.01	
DRAWN BY: B.W.D.		REVIEWED BY: K.G.B.	
DATE: 9/29/97		SCALE: AS SHOWN	
FIGURE TITLE: GENERAL SITE DIAGRAM UST #277N		FIGURE NO.: 2	

Appendix B
NJDEP UST Closure Approval

**UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

**DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028**

TMS # C97-0793

UST # 0071994

SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER
BUILDING 273, ROUTE 150
PEDRICKTOWN

SALEM

**THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et. seq:**

REMOVAL OF: six 550 gallon #2 fuel\oil UST(s), and appurtenant piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in the Attachment enclosed within.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

CONTACT PERSON:

JANIS CROWDER

TELEPHONE:

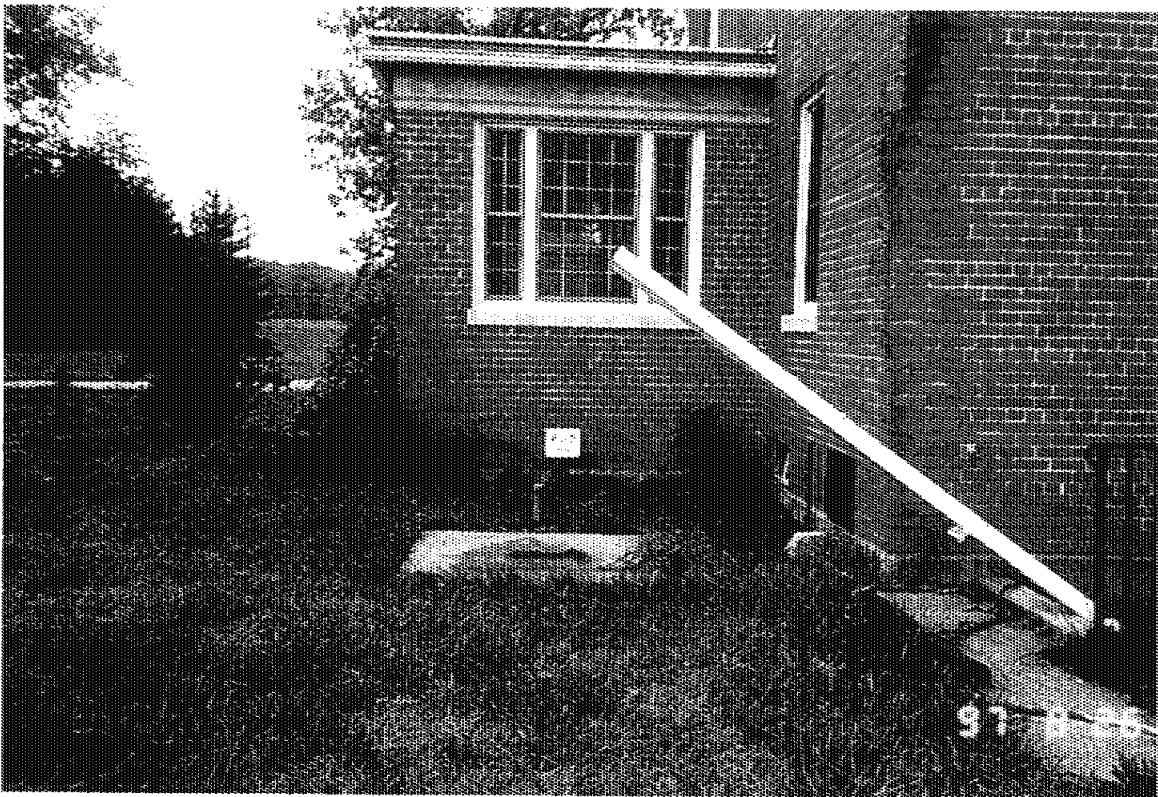
804-354-5409

EFFECTIVE DATE: 08/14/97

**THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.**

H. R. Patel
Joshua Gradwohl, SUPERVISOR (705)
BUREAU OF FIELD OPERATIONS

Appendix C
Photographic Documentation



Photograph No.: 1 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Building 277N prior to excavation activities.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: South.



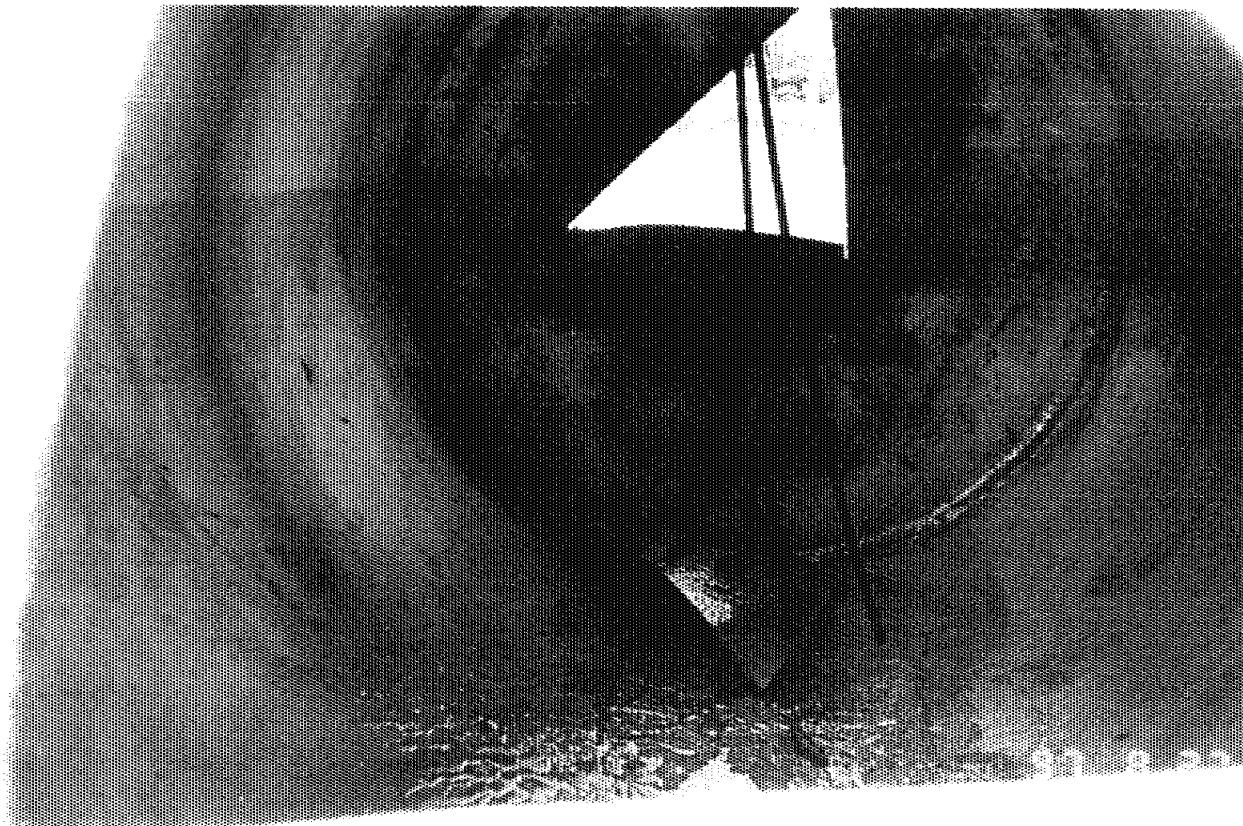
Photograph No.: 2 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Excavation after tank removal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: East.



Photograph No.: 3 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Tanks cleaned using pressure washer.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



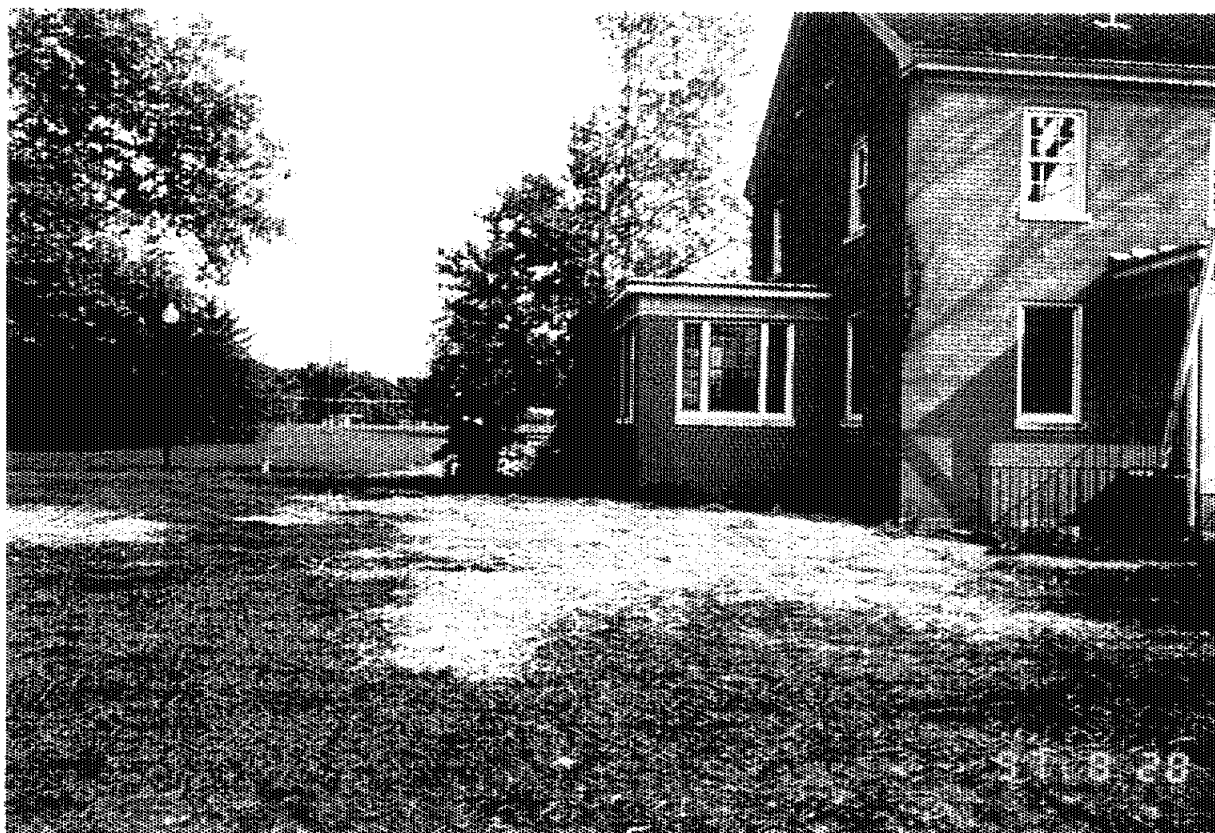
Photograph No.: 4 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Cleaned UST with holes rendering it unusable.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 5 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Tank was loaded into rolloff box for disposal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 6 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277N)
Photographer: B. Rayfield
Description: Building 277N excavation backfilled and restored with seed and straw.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/28/97
View: South.

Appendix D
Tank Disposal Certificate

Sep 23 97 10:23A

EARTH TECH INC

P.03
001



Environmental Technology Incorporated (d/b/a. Earth Tech) Certification of Tank Disposal

In accordance with American Petroleum Institute recommended practices

Client: **USACE** Job No: **21574** Date: **8/23/97**

Site to which the tank is to be transported for final disposal: **Severs-Sandburn Reservoir Center, Manhattan, NJ**

Tank Description

Size: **550-gallon** Type tank, shape, and condition: **Fiberglass Excellent**

Previous contents: **Heating Oil**
Tank markings: **None**

Cleaning Certification

This is to certify that the above described tank has been cleaned in accordance with API methods and procedures and has been rendered suitable for disposal as scrap. All product residues were removed and the interior of the tank was tested and found to be free of harmful vapors.

Signature: *[Signature]* Company: **Environmental Technology Incorporated** Date: **8/23/97**

Transportation

This is to certify that the above described tank has been received and will be transported to the disposal site as described above.

Signature: *[Signature]* Driver or Hauler: _____ Date: _____

Received for Disposal

This is to certify that the above described tank has been received for disposal and will be disposed of in accordance with applicable regulatory requirements.

Signature: *[Signature]* Disposal Facility: **White Township** Date: _____

Comments

Fiberglass tank demolished in roll-off box for disposal after draining interior.

Appendix E
Liquid Disposal Manifest

CASIE / PROTANK

ENVIRONMENTAL SERVICES

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

In case of an emergency or spill, immediately call CASIE (800) 354-2584

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. ATD 1210090018	Document No. 1114	2. Page 1 8 of 3
3. Generator's Name and Mailing Address Selvers-Sandberg Reserve Ctr. Route #130 Bedricktown NJ 08067			A. Non-hazardous Manifest Document Number NHZ0200 7448	
4. Generator's Phone (609) 753-7143			B. State Generator's ID SAME	
5. Transporter 1 Company Name Casie Ecology Oil Salvage, Inc.		6. US EPA ID Number N 17 10 10 14 15 19 19 15 16 19 13		C. State Trans. ID 3 1 1 2 15 4
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (609) 636-44
9. Designated Facility Name and Site Address Casie Ecology Oil Salvage, Inc. T-4 1100 N. Mill Rd Trenton NJ 08660		10. US EPA ID Number N 17 10 10 14 15 19 19 15 16 19 13		E. State Trans. ID
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No. Type	13. Total Quantity
a. UNIDENTIFIED LIQUID, A.O.C. 15091, 111			1000	360
b.				
c.				
d.				
J. Additional Descriptions for Materials Listed Above			K. Handling Codes for Wastes Listed Above	
a.			a.	c.
b.			b.	d.
15. Special handling instructions and Additional Information				
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition according to applicable international and national government regulations.				
I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.				
Printed/Typed Name		Signature		Month Day
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.				
Printed/Typed Name		Signature		Month Day

Appendix F

Laboratory Certificates and Chain-of-Custody

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-01 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-277N-SS01

Parameter	Method	Quantitation	Results	Date	Date
		Limits		Prepared	Analyzed
TPH by IR	EPA 418.1	10 mg/Kg	BQL	09/09/97	09/11/97 BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR

Quantitation limits and results have been adjusted for moisture correction factor

BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-02 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-277N-SS02

Parameter	Method	Quantitation		Results	Date	Date	Analyst
		Limits			Prepared	Analyzed	
TPH by IR	EPA 418.1	11 mg/Kg		BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-03 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PSD-277N-SS03

Parameter	Method	Quantitation		Date	Date
		Limits	Results	Prepared	Analyzed Analyst
TPH by IR	EPA 418.1	12 mg/Kg	110	09/09/97	09/11/97 BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #:	2070-038	Matrix:	Soil
IEA Sample #:	9708533-04	Date Received:	08/28/97
Client Name:	Earth Tech	Date Sampled:	08/26/97
Client Proj. I.D.:	22818 Pedricktown		
Sample I.D.:	PED-277N-SS04		

Parameter	Method	Quantitation		Results	Date	Date	Analyst
		Limits			Prepared	Analyzed	
TPH by IR	EPA 419.1	12 mg/Kg		BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
 Quantitation limits and results have been adjusted for moisture correction factor
 BQL = Below Quantitation Limits

CHAIN OF CUSTODY RECORD

WORK ORDER #: _____

DUE DATE : _____

COMPANY: EARTH TECH
 ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
 PHONE #: (804) 358-5888 FAX #: (804) 354-0300
 P.O. #: M6501065353 804
 PROJECT MANAGER: JANIS CROWDER
 PROJECT ID/LOCATION: PEDRICKTOWN/22818

- | SAMPLE TYPE | CONTAINER TYPE |
|---------------------|----------------|
| 1. WASTEWATER | P - PLASTIC |
| 2. SOIL | G - GLASS |
| 3. SLUDGE | V - VOA |
| 4. OIL | |
| 5. DRINKING WATER | |
| 6. WATER (GW/MW/SW) | |
| 7. OTHER (SPECIFY) | |

ANALYSES

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE	SPECIAL INSTRUCTIONS/COMMENTS	
			SIZE	TYPE	#	DATE	TIME			
	PED-277N-SS01	2	4oz	G	1	8/26	1011	4°C	X	TPH - DRG 418.1 LEFT TPH > 1000 ppm run for 8260 volatile organics plus 15 packs including xylene - target compound but a priority pollutant volatile organics with library search per NJ DEP.
	PED-277N-SS02						1012		X	
	PED-277N-SS03						1013		X	
	PED-277N-SS04						1014		X	
	PED-277S-SS01						1140		X	
	PED-277S-SS01B						1141		X	
	PED-277S-SS02						1142		X	
	PED-277S-SS03						1143		X	
	PED-277S-SS04						1145		X	
	PED-278N-SS01						1255		X	
	PED-278N-SS02						1256		X	
	PED-278N-SS03						1257		X	
	PED-278N-SS04						1258		X	

SAMPLED BY: <u>Betha Kay</u>	DATE: <u>8-26-97</u>	QUOTATION #:
RELINQUISHED BY: <u>Betha Kay</u>	DATE: <u>8-27-97</u>	RECEIVED BY: <u>FEDEX</u>
RELINQUISHED BY:	DATE:	AIRBILL # <u>400717735</u>
METHOD OF SHIPMENT:	DATE:	RECEIVED FOR LAB BY: <u>[Signature]</u>
	TIME:	COOLER TEMPERATURE: <u>1/6</u>

RUSH BUSINESS DAY TURN AROUND

ROUTINE

Sample disposal information
 Are there any other known or suspected contaminants in these samples other than those listed above?



#1 EA, INC.

15 Wiggins Ave., Bedford, MA 01730
Telephone: (617) 275-3330
Fax: (617) 275-7478

CHAIN OF CUSTODY RECORD

WORK ORDER #: _____

DUE DATE : _____

COMPANY: EARTH TECH
ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
PHONE #: (804) 358-5858 FAX #: (804) 354-0300
P.O. #: MT 5010 6533
PROJECT MANAGER: JANIS CROWDER
PROJECT ID/LOCATION: Pedrickham 22818

SAMPLE TYPE	CONTAINER TYPE	ANALYSES									
		1. WASTEWATER	P - PLASTIC	2. SOIL	G - GLASS	3. SLUDGE	V - VOA	4. OIL	5. DRINKING WATER	6. WATER (GW/MW/SW)	7. OTHER (SPECIFY)
		<i>TPH - PPS 418.1</i> <i>TLP PCRAMETALS</i> <i>+ Be, Ni</i> <i>per Janis Crowder</i> <i>5/5/20/48</i>									

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE	SPECIAL INSTRUCTIONS/COMMENTS	
			SIZE	TYPE	#	DATE	TIME			
	PED-2785-SS01	2	4oz	G	1	8/26	1520	4°C	X	
	PED-2785-SS01									
	PED-2785-SS02	2	4oz		1	8/26	1521	4°C	X	
	PED-2785-SS03	2	4oz		1		1522	4°C	X	
	PED-2785-SS04	2	4oz	↓	1	↓	1523	4°C	X	
	PED-DC	3	1 liter	G	1	8/27	1440	4°C	X	IF TPH > 1000 ppm run for 8260 volatile organics plus 15 packs including xylenes, target compound list or priority pollutant volatile organics with library search per NJDEP
										2010-038

SAMPLED BY: Behmaka
 DATE: 8-26-97
 TIME: _____

RELINQUISHED BY: Behmaka
 DATE: 8-27-97
 TIME: _____

RELINQUISHED BY: _____
 DATE: _____
 TIME: _____

METHOD OF SHIPMENT: _____

QUOTATION #: _____

RECEIVED BY: FEDEX
 AIRBILL # 400717355
 RECEIVED FOR LAB BY: Bill
 COOLER TEMPERATURE: _____

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected
 contaminants in these samples other than _____

Underground Storage Tank Closure Report

Prepared for:
U.S. Army Corps of Engineers
Metro New York Area
Building 611, Fort Totten
Flushing, New York 11359

Site:
Building No. 277
UST No. 277S
Sievers-Sandberg United States Army Reserve Center
Pedricktown, New Jersey

Prepared by:
Earth Tech, Inc.
2229 Tomlynn Street
Richmond, Virginia 23230

October 23, 1997

Contract No. DACW31-95-D-0097
Delivery Order No. 0015

ET Job No. 21574

Client: United States Army Corps of Engineers
Project Name: Sievers-Sandberg United States Army Reserve Center, Building No. 277S
ET Job No.: 21574

This document has been reviewed for technical content and quality, clarity, and style in accordance with the internal QA/QC procedures of Earth Tech, Inc.

Acknowledgments:

Technical Review:

<u>Candice Smill</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/23/97</u> (Date)
--------------------------------	----------------------------------	---------------------------

Style Review:

<u>Stephen M. Daly, Esq. Mary Frith</u> (Name)	<u>Asst. Manager</u> (Title)	<u>10/23/97</u> (Date)
---	---------------------------------	---------------------------

Final Review:

<u>Janis Conder</u> (Name)	<u>Staff Scientist</u> (Title)	<u>10/29/97</u> (Date)
-------------------------------	-----------------------------------	---------------------------

New Jersey Subsurface Evaluator (No. 0017969):

<u>C. Claffin</u> (Name)	<u>Env. Scientist</u> (Title)	<u>10/7/97</u> (Date)
-----------------------------	----------------------------------	--------------------------

New Jersey Professional Engineer (No. 33056):

<u>[Signature]</u> (Name)	<u>Associate Principal</u> (Title)	<u>10-16-97</u> (Date)
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Appendix E	Liquid Disposal Manifest
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EXECUTIVE SUMMARY

This report details the clean closure of an underground storage tank (UST) and fulfills the requirements of site investigation reporting activities as detailed in the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (NJAC 7:26E - 3.10) and was conducted in accordance with the approved closure plan for the site.

Earth Tech was contracted by the U.S. Army Corps of Engineers (USACE), Baltimore District, to remove a 550-gallon heating oil UST (designated 278S) located east of Building No. 277 at the Sievers-Sandberg United States Army Reserve Center (USARC) in Pedricktown, New Jersey. The work was conducted under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. Earth Tech is an NJDEP-approved Closure Contractor (Registration No. US00537).

The UST was previously used to store No. 2 fuel oil for heating purposes and was empty. On August 26, 1997, Earth Tech excavated and removed the UST. Upon removal, the condition of the UST was examined by an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The UST was in good condition with no visible holes. No soil staining was observed beneath the former UST and groundwater was not encountered in the excavation. Earth Tech cut and cleaned the UST, which was then transported by Superior Sanitation Services to BFI of Philadelphia, Pennsylvania, for disposal. The rinsate water generated during tank cleaning activities was transported by Casie Protank Environmental Services for disposal to Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey.

No soil staining was observed beneath the former UST. Photoionization detector (PID) field screening of excavated soil and soil samples indicated volatile organic vapor levels ranging from 0.0 parts per million (ppm) to 5.0 ppm. The excavated soils were used as backfill material.

Earth Tech collected four confirmatory soil samples from the excavation floor. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1, using an NJDEP-certified laboratory. Three samples contained TPH concentrations below the method quantitation limit of 11 milligrams per kilogram (mg/Kg). One sample, PED-277S-SS04, had a TPH concentration of 14 mg/Kg, which is below the most stringent NJDEP Soil Cleanup Criteria of 10,000 mg/Kg for total organic compounds in soil. All sampling was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4).

Based on field observations and analytical data, Earth Tech recommends no further action relative to former UST 277S at Building No. 277.

1.0 INTRODUCTION

Earth Tech an underground storage tank (UST) Closure Contractor (Certification No. US00537) approved by the New Jersey Department of Environmental Protection (NJDEP), was contracted by the United States Army Corps of Engineers (USACE), Baltimore District, to remove USTs at the Sievers-Sandberg United States Army Reserve Center (USARC), Pedricktown, New Jersey, under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. This report details the clean closure of an UST located at Building No. 277 of the Sievers-Sandberg USARC. A Site Location Map is included as Figure 1 in Appendix A. This report fulfills the requirements of site investigation reporting as detailed in the New Jersey Technical Requirements for Site Remediation (NJAC 7:26E-3.10), and provides an overview of the site investigation activities, analytical results, and recommendations.

The Sievers-Sandberg USARC property was acquired by the USACE in 1917, and the Delaware Ordnance Depot was established at Pedricktown in 1918. The depot became the backup storage facility for the Picatinny and Frankfort Arsenals and the Aberdeen Proving Ground. In 1960, the Pedricktown facility became the headquarters for the 42nd and 43rd Artillery, which commanded the Nike Missile Sites in the Philadelphia area. In 1965, the Salem County Technical Institute gained control of the site. In the late 1960s, the 79th Army Reserve Command and the 21st Corps were replaced by the 78th Division of the Army Reserves, which is still stationed at the facility. The eastern portion of the property is currently leased by Salem Community College.

Building No. 277 is a former residential building. A 550-gallon fiberglass UST (designated UST 277S) at the site was formerly used to store No. 2 heating oil for the building. The UST was removed because the source of heat at the building is being converted from heating oil to natural gas. See Plate A1 in Appendix A for a site plan of the Sievers-Sandberg USARC. The UST was not a regulated tank (per NJAC 58:10); however, the UST was registered and an UST Closure Plan submitted to the NJDEP prior to initiating closure activities. The NJDEP UST Closure Approval is included in Appendix B.

2.0 SITE ASSESSMENT

On August 26, 1997, Earth Tech removed one 550-gallon fiberglass UST at the site. Figure 2 in Appendix A shows the general site layout and the location of the UST. Photographic documentation of site activities is included in Appendix C. The UST was oriented parallel to the west side of Building No. 277. No utility lines were located in the vicinity of the UST. A second tank (UST 277N) was removed from Building No. 277 and a separate tank closure report was prepared and submitted to the NJDEP.

Upon tank removal, the UST condition was examined by Ms. Christina Harris, an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The tank was observed to be in good condition with no holes or pitting. No soil staining was observed in the excavation or along the excavation sidewalls. The UST measured approximately 6 feet long by 4 feet in diameter. Earth Tech personnel cut the UST at both ends to provide ventilation and access for tank cleaning. The tank was then cleaned using a pressure washer. The rinsate was collected by Casie Protank Environmental Services and transported for disposal to Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey. The tank disposal certificate is included in Appendix D. The liquid disposal manifest is included in Appendix E.

Earth Tech personnel examined the UST excavation after removing the tank. No soil staining was observed beneath the former UST. Groundwater was not encountered in the excavation. Based on the photoionization detector (PID) field screening of excavated soils, no soils were deemed contaminated (i.e., no PID readings greater than 100 parts per million [ppm]).

Confirmatory soil samples were collected in accordance with NJAC 7:26E-6.4. Earth Tech personnel collected a total of four soil samples from the walls of the excavation (PED-277S-SS01, PED-277S-SS02, PED-277S-SS03, and PED-277S-SS04). Field screening of each soil sample using the PID indicated volatile organic vapor readings ranging from 0.2 ppm to 0.4 ppm. Figure 2 in Appendix A depicts the soil sample locations. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1. The samples were analyzed by Industrial & Environmental Analysts, Inc. (IEA), an NJDEP-certified laboratory.

Three samples contained TPH concentrations below the method quantitation limit of 11 milligrams per kilogram (mg/Kg). One sample, PED-277S-SS04, had TPH concentrations of 14 mg/Kg, which is below the most stringent NJDEP Soil Cleanup Criteria of 10,000 mg/Kg for total organic compounds in soil. All sampling was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4). Certificates of analysis and chain-of-custody forms are included as Appendix F. Because the tank is not regulated, an executed NJDEP Site Inspection Report Checklist is not included in this report.

Table 1 Soil Analytical Results

Sample Designation and Location	Date Sampled	Depth (fbg)	PID (ppm)	TPH 418.1 (mg/Kg)	Quantitation Limits (mg/Kg)
PED-277S-SS01 east excavation floor	8/26/97	9	0.4	BQL	11
PED-277S-SS02 south excavation floor	8/26/97	9	0.2	BQL	11
PED-277S-SS03 west excavation floor	8/26/97	9	0.3	BQL	11
PED-277S-SS04 north excavation floor	8/26/97	9	0.3	14	11
<i>Notes:</i> TPH Total petroleum hydrocarbons fbg Feet below grade mg/Kg Milligram per kilogram PID Photoionization detector ppm Parts per million BQL Below quantitation limits					

The stockpiled soil generated during UST removal, along with imported backfill, was used to backfill the excavation. No soils associated with the UST closure were removed from the site.

3.0 CONCLUSIONS

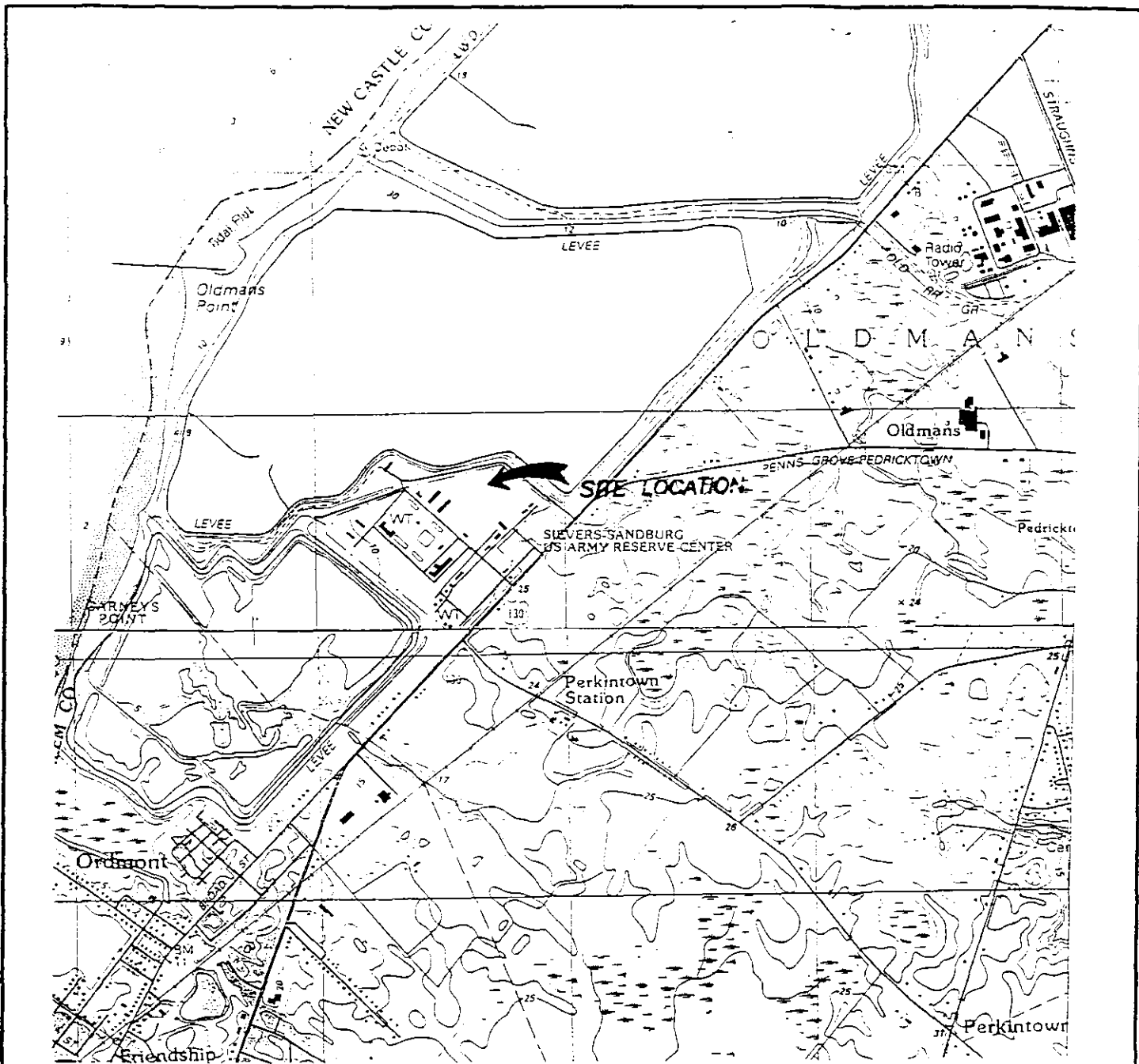
The following is a summary of Earth Tech's site investigation, findings, and tank closure activities for UST 277S at Building 277 on the Sievers-Sandberg USARC:

- On August 16, 1997, Earth Tech removed one 550-gallon, fiberglass UST used to store No. 2 heating oil for Building No. 277.
- No holes or pitting were observed in the tank.
- The cleaned UST was transported for disposal to BFI of Philadelphia, Pennsylvania.
- No stained soils were observed in the tank excavation. Groundwater was not encountered in the excavation.
- PID field screening was performed for excavated soils and soil samples. Vapor readings ranged from 0.0 ppm to 5.0 ppm.
- Four confirmatory soil samples were collected from the UST excavation. Soil sample PED-277S-SS04, collected from the north end of the excavation, indicated a TPH concentration of 14 mg/Kg, which is below the NJDEP criteria of 10,000 mg/Kg for total organic compounds in soils. The remaining three confirmatory samples had TPH concentrations below the method quantitation limit of 11 mg/Kg.

Based on the site investigation results, Earth Tech recommends no further action relative to former UST 277S at Building No. 277.

Appendix A

Figures

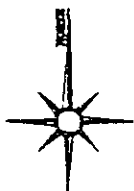
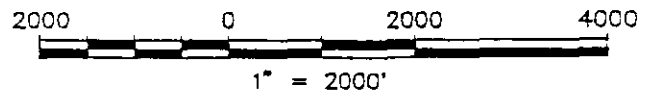


SOURCE:
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 MARCUS HOOK, PA-NJ-DEL 1993
 PHOTOREVISED 1995

U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 PENNS GROVE, NJ-DEL 1993
 PHOTOREVISED 1995

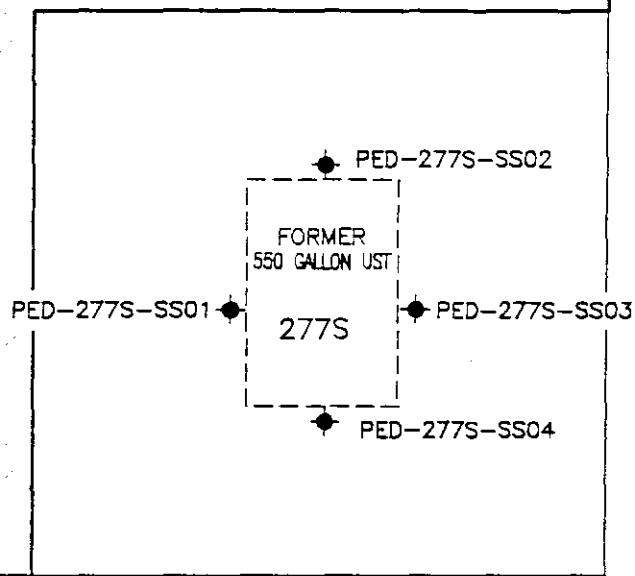
CONTOUR INTERVAL = 10 FEET

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER PEDRICKTOWN, NEW JERSEY		EARTH TECH <small>A TUCO INTERNATIONAL LTD. COMPANY</small>	
PROJECT MANAGER: J.R.C.		PROJECT NO.: 21574	
DRAWN BY: S.W.D.		REVIEWER: C.S.S.	
DATE: 8/19/97		SCALE: AS SHOWN	
FIGURE TITLE: SITE LOCATION AND TOPOGRAPHY		FIGURE NO.: 1	

BUILDING # 277



EXTENT OF EXCAVATION
FOR UST #277S

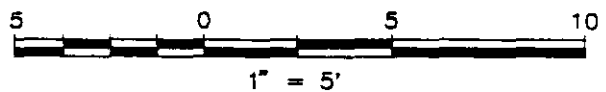
SERVICE ROAD




LEGEND

◆ PED-277S-SS03 SOIL SAMPLE LOCATION AND DESIGNATION

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG USARC PEDRICKTOWN, NEW JERSEY	
PROJECT MANAGER: J.C.C.	PROJECT NO.: 21574.01
DRAWN BY: B.W.D.	REVIEWED BY: K.G.B.

EARTH  TECH	
FIGURE TITLE: GENERAL SITE DIAGRAM UST #277S	
DATE: 9/29/97	SCALE: AS SHOWN
FIGURE NO.:	2

Appendix B
NJDEP UST Closure Approval

**UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

**DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028**

TMS # C97-0793

UST # 0071994

SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER
BUILDING 273, ROUTE 130
PEDRICKTOWN

SALEM

**THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et. seq:**

REMOVAL OF: six 550 gallon #2 fuel (oil) UST(s), and appurtenant piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in the Attachment enclosed within.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

CONTACT PERSON:

JANIS CROWDER

TELEPHONE:

804-354-6409

EFFECTIVE DATE: 08/14/97

**THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.**

H. R. Patel
Joshua Gradwohl, SUPERVISOR
BUREAU OF FIELD OPERATIONS (105)

Appendix C
Photographic Documentation



Photograph No.: 1 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277S)
Photographer: B. Rayfield
Description: Building 277S prior to excavation activities.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: South.



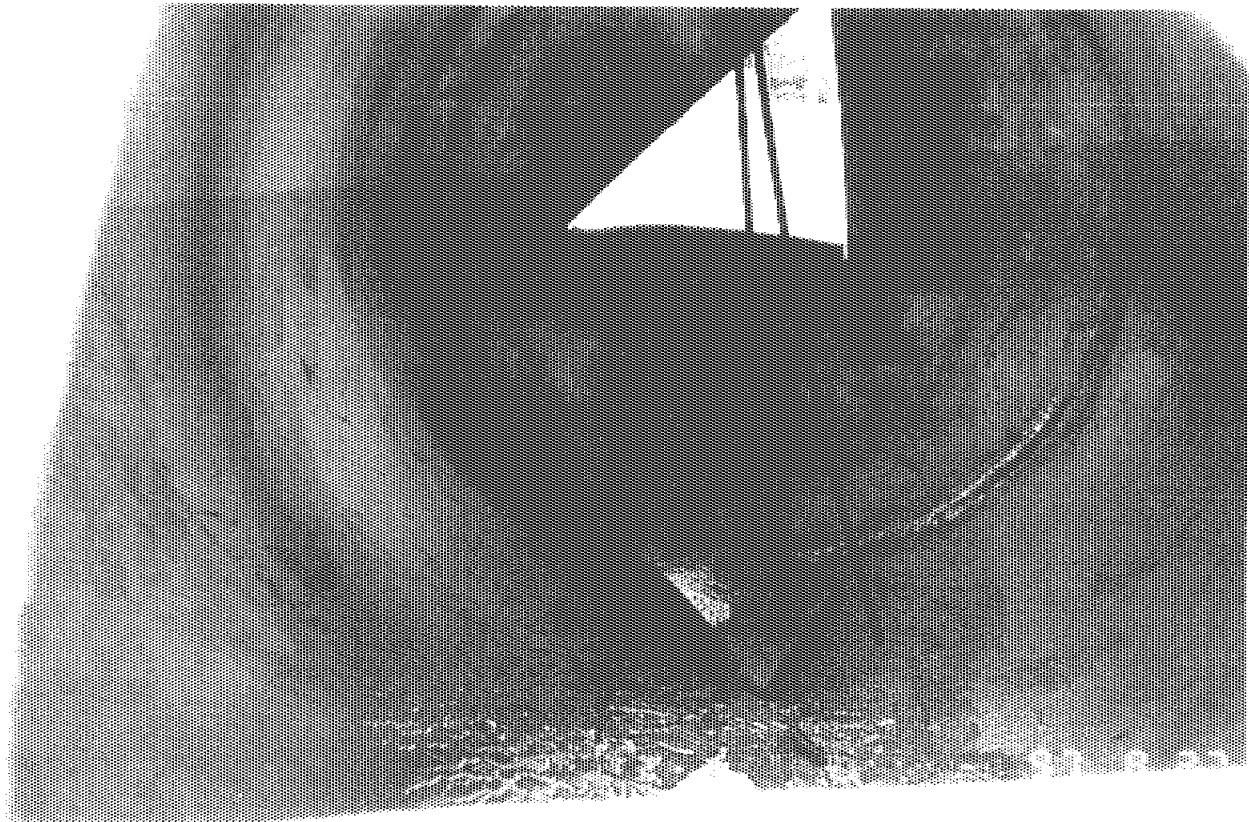
Photograph No.: 2 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277S)
Photographer: B. Rayfield
Description: Excavation after tank removal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/25/97
View: Detail.



Photograph No.: 3 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 2775)
Photographer: B. Rayfield
Description: Tanks cleaned using pressure washer.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



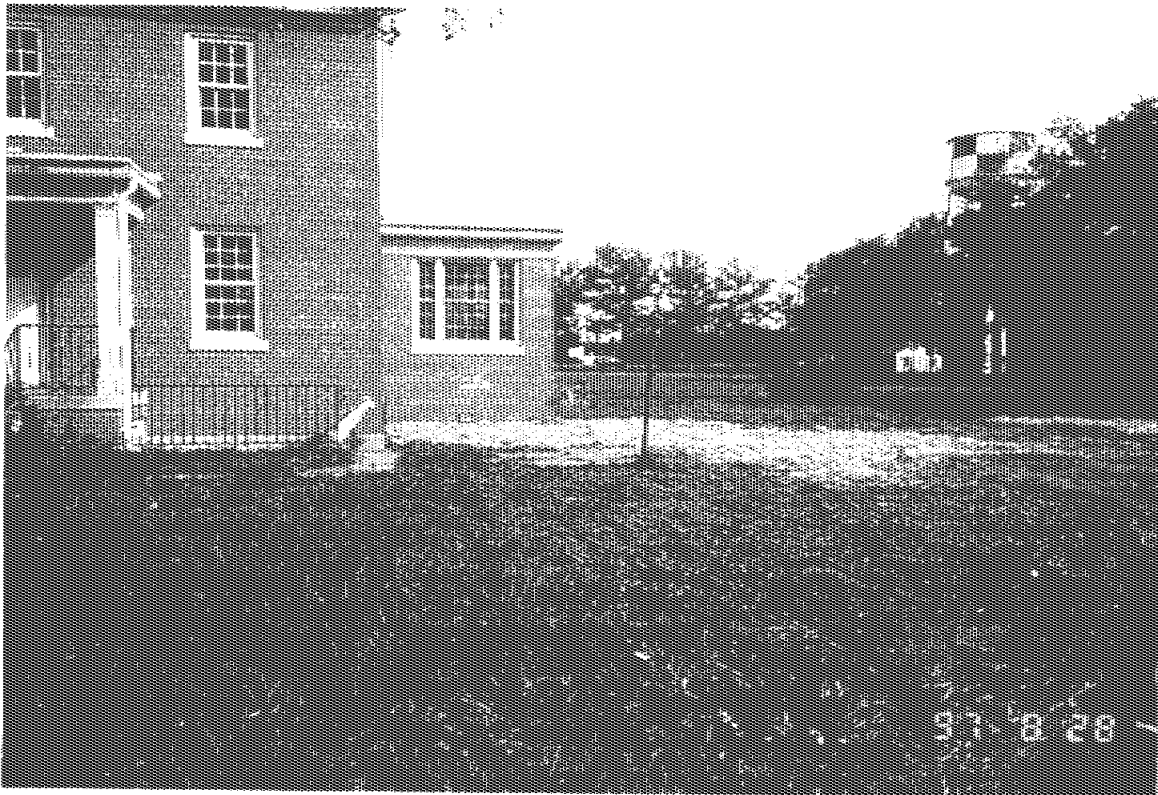
Photograph No.: 4 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 2775)
Photographer: B. Rayfield
Description: Cleaned UST with holes rendering it unusable.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 5 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277S)
Photographer: B. Rayfield
Description: Tank was loaded into rolloff box for disposal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 6 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 277S)
Photographer: B. Rayfield
Description: Building 277S excavation backfilled and restored with seed and straw.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/28/97
View: South.

Appendix D
Tank Disposal Certificate

Sep-23-97 10:24A

2025 1001 XCT

P.05

0005



Environmental Technology Incorporated (d.b.a. EARTH TECH) Certification of Tank Disposal

In accordance with American Petroleum Institute recommended practices

Client: USACE Job No: 21579 Date: 8/23/97

Site from which the tank was removed: Sixties - Sandburg Reserve Center

Site to which the tank is to be transported for final disposal:

Tank Description

Type: 50-gal. Fiberglass Condition: Excellent

Previous Contents: Heating Oil

Tank Markings: None

Cleaning Certification

This is to certify that the above described tank has been cleaned in accordance with APT methods and procedures and has been rendered suitable for disposal as scrap. All product residues were removed and the interior of the tank was tested and found to be free of harmful vapors.

Accepted: [Signature] Company: Environmental Technology Incorporated Date: 8/23/97

Transportation

This is to certify that the above described tank has been received and will be transported to the disposal site as specified above.

Accepted: [Signature] Inspector or Tester: _____ Date: _____

Received for Disposal

This is to certify that the above described tank has been received for disposal and will be disposed of in accordance with applicable regulatory requirements.

Accepted: [Signature] Disposal Facility: Phil's Recycling Date: _____

Comments

Fiberglass tank demolished in roll-off box for disposal after cleaning interior.

© 1995 Environmental Technology Incorporated

Appendix E
Liquid Disposal Manifest

CASIE / PROTANK

ENVIRONMENTAL SERVICES

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

In case of an emergency or spill, immediately call CASIE (800) 354-2584

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. ATD42101920168	Document No. 11043	2. Page 1 8 of 5
3. Generator's Name and Mailing Address Selvers-Sandberg Reserve Ctr. Route #130 Bedfordtown, NJ 08867			A. Non-hazardous Manifest Document Number NHZ0200 7448	
4. Generator's Phone (800) 753-7143		6. US EPA ID Number		B. State Generator's ID SAME
5. Transporter 1 Company Name Casie Ecology Oil Salvage Inc.		7. US EPA ID Number NJ 10 10 14 15 19 19 15 16 19 13		C. State Trans. ID 3 1 12 6 15 15
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (800) 354-2584
9. Designated Facility Name and Site Address Casie Ecology Oil Salvage, Inc. T/A 3109 N. Mill Rd Middletown, NJ 08860		10. US EPA ID Number NJ 17 10 14 15 19 19 15 16 19 13		E. State Trans. ID
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No. Type	13. Total Quantity
a. DELETED			100	360
b.				
c.				
d.				
14. Additional Descriptions for Materials Listed Above			15. Handling Codes for Wastes Listed Above	
a.			a.	
b.			b.	
16. Special Handling Instructions and Additional Information				
17. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition according to applicable international and national government regulations.				
I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279, or by applicable state law.				
Printed/Typed Name		Signature		Month Day
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.				
Printed/Typed Name		Signature		Month Day

Appendix F

Laboratory Certificates and Chain-of-Custody

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-05 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-277S-SS01

Parameter	Method	Quantitation		Results	Date	Date
		Limits			Prepared	Analyzed
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR

Quantitation limits and results have been adjusted for moisture correction factor

BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
 Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
 IEA Sample #: 9708533-06 Date Received: 08/28/97
 Client Name: Earth Tech Date Sampled: 08/26/97
 Client Proj. I.D.: 22818 Pedricktown
 Sample I.D.: PED-277S-SS01D

Parameter	Method	Quantitation Limits	Results	Date	Date	Analyst
				Prepared	Analyzed	
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
 Quantitation limits and results have been adjusted for moisture correction factor
 BQL = Below Quantitation Limits.

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-07 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-277S-SS02

Parameter	Method	Quantitation	Results	Date	Date	Analyst
		Limits		Prepared	Analyzed	
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-08 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: FED-2775-SS03

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR

Quantitation limits and results have been adjusted for moisture correction factor

BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-09 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-277S-SS04

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	14	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
Quantitation limits and results have been adjusted for moisture correction factor
BCL = Below Quantitation Limits

CHAIN OF CUSTODY RECORD

WORK ORDER #: _____

DUE DATE : _____

COMPANY: EARTH TECH
 ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
 PHONE #: (804) 358-5100 FAX #: (804) 354-0300
 P.O. #: M65066553 804
 PROJECT MANAGER: JANIS CROWDER
 PROJECT ID/LOCATION: PEDRICKTOWN/22818

- | SAMPLE TYPE | CONTAINER TYPE |
|--------------------|----------------|
| 1. WASTEWATER | P - PLASTIC |
| 2. SOIL | G - GLASS |
| 3. SLUDGE | V - VOA |
| 4. OIL | |
| 5. DRINKING WATER | |
| 6. WATER (GWMW/SW) | |
| 7. OTHER (SPECIFY) | |

ANALYSES

TPH - DRG 418.1

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE	SPECIAL INSTRUCTIONS/COMMENTS	
			SIZE	TYPE	#	DATE	TIME			
	PED-277N-SS01	2	4oz	G	1	8/26	1011	4°C	X	
	PED-277N-SS02						1012		X	
	PED-277N-SS03						1013		X	LF TPH > 1000 ppm run for 8260 volatile organics plus 15 packs including xylenes - target compound list a priority pollutant volatile organics with library search per NJ DEP.
	PED-277N-SS04						1014		X	
	PED-277S-SS01						1140		X	
	PED-277S-SS01D						1141		X	
	PED-277S-SS02						1143		X	
	PED-277S-SS03						1145		X	
	PED-277S-SS04						1145		X	
	PED-278N-SS01						1255		X	
	PED-278N-SS02						1256		X	
	PED-278N-SS03						1257		X	
	PED-278N-SS04						1258		X	

2000-038
 2098-¹¹¹⁵ 91467

SAMPLED BY: <u>Betha Ray</u>	DATE: <u>8-26-97</u>	QUOTATION #:
RELINQUISHED BY: <u>Betha Ray</u>	DATE: <u>8-27-97</u>	RECEIVED BY: <u>FEDEX</u>
RELINQUISHED BY:	DATE:	AIRBILL # <u>400717735</u>
METHOD OF SHIPMENT:	DATE:	RECEIVED FOR LAB BY: <u>[Signature]</u>
	TIME:	DATE: <u>8-28-97</u>
	TIME:	TIME: <u>- 1300</u>
		COOL OR TEMPERATURE:

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected contaminants in these samples other than those listed above?



HEALTH

15 Wiggins Ave., Bedford, MA 01730
Telephone: (617) 275-3330
Fax: (617) 275-7478

CHAIN OF CUSTODY RECORD

WORK ORDER #: _____

DUE DATE : _____

COMPANY: EARTH TECH
ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
PHONE #: (804) 358-5858 FAX #: (804) 354-0300
P.O. #: MT 5010 65353
PROJECT MANAGER: JANIS CROWDER
PROJECT ID/LOCATION: Pedrickham 22818

- | SAMPLE TYPE | CONTAINER TYPE |
|---------------------|----------------|
| 1. WASTEWATER | P - PLASTIC |
| 2. SOIL | G - GLASS |
| 3. SLUDGE | V - VOA |
| 4. OIL | |
| 5. DRINKING WATER | |
| 6. WATER (GW/MW/SW) | |
| 7. OTHER (SPECIFY) | |

ANALYSES

TPH - DRS 418.1
 TLP RCPA METALS
 + Be, Ni
 per Janis Crowder
 5/8/28/97

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE												SPECIAL INSTRUCTIONS/ COMMENTS
			SIZE	TYPE	#	DATE	TIME													
	PED-2785-SS01	2	4oz	G	1	8/26	1520	4°C	X											
	PED-2785-SS01																			
	PED-2785-SS02	2	4oz		1	8/26	1521	4°C	X											
	PED-2785-SS03	2	4oz		1		1522	4°C	X											
	PED-2785-SS04	2	4oz	↓	1	↓	1523	4°C	X											
	PED-DC	3	1 liter	G	1	8/27	1440	4°C	X											

IF TPH > 1000 ppm run for 8260 volatile organics plus 15 peaks including xlenes, target compound list on priority pollutant volatile organics with library search per NJ DEP

2010-038

AMPLIFIED BY: Beth Akaf DATE: 8-26-97
 RELINQUISHED BY: Beth Akaf DATE: 8-27-97
 RELINQUISHED BY: _____ DATE: _____
 METHOD OF SHIPMENT: _____

QUOTATION #: _____
 RECEIVED BY: FEDEX DATE: _____
 AIRBILL # 400717735 TIME: _____
 RECEIVED FOR LAB BY: Bill DATE: 8-28-97
 TIME: (12)

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected contaminants in these samples other than _____

tech

engineering & construction total water management

environmental services & remediation transportation

Underground Storage Tank Closure Report

Prepared for:
U.S. Army Corps of Engineers
Metro New York Area
Building 611, Ft. Totten
Flushing, New York 11359

Site:
Building No. 278
UST No. 278S
Sievers-Sandberg United States Army Reserve Center
Pedricktown, New Jersey

Prepared by:
Earth Tech, Inc.
2229 Tomlynn Street
Richmond, Virginia 23230

October 23, 1997

Contract No. DACW31-95-D-0097
Delivery Order No. 0015

ET Job No. 21574

Client: United States Army Corps of Engineers
Project Name: Sievers-Sandberg United States Army Reserve Center, Building No. 278S
ET Job No.: 21574

This document has been reviewed for technical content and quality, clarity, and style in accordance with the internal QA/QC procedures of Earth Tech, Inc.

Acknowledgments:

Technical Review:

<u>Candice Somerville</u> (Name)	<u>ENV SCIENTIST</u> (Title)	<u>10/23/97</u> (Date)
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Style Review:

<u>Stephanie DeVore for Mary Ruffin</u> (Name)	<u>Pub Manager</u> (Title)	<u>10/23/97</u> (Date)
---	-------------------------------	---------------------------

Final Review:

<u>Janis Cerasola</u> (Name)	<u>Staff Scientist</u> (Title)	<u>10/23/97</u> (Date)
---------------------------------	-----------------------------------	---------------------------

New Jersey Subsurface Evaluator (No. 0017909):

<u>C. Clifton</u> (Name)	<u>ENV. Scientist</u> (Title)	<u>10/7/97</u> (Date)
-----------------------------	----------------------------------	--------------------------

New Jersey Professional Engineer (No. 33056):

<u>Perkins</u> (Name)	<u>Associate Principal</u> (Title)	<u>10-16-97</u> (Date)
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Appendix B	NJDEP UST Closure Approval
Appendix C	Photographic Documentation
Appendix D	Tank Disposal Certificate
Appendix F	Laboratory Certificates and Chain-of-Custody
Appendix E	Liquid Disposal Manifest

EXECUTIVE SUMMARY

This report details the clean closure of an underground storage tank (UST) and fulfills the requirements of site investigation reporting activities as detailed in the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (NJAC 7:26E - 3.10) and was conducted in accordance with the approved closure plan for the site.

Earth Tech was contracted by the U.S. Army Corps of Engineers (USACE), Baltimore District, to remove a 550-gallon UST located east of Building No. 278 at the Sievers-Sandberg United States Army Reserve Center (USARC) in Pedricktown, New Jersey. The work was conducted under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. Earth Tech is an NJDEP-approved Closure Contractor (Registration No. US00537).

The UST was previously used to store No. 2 heating oil for heating purposes and was empty. On August 26, 1997, Earth Tech excavated and removed the UST. Upon removal, the condition of the UST was examined by an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The UST was in good condition with no visible holes. No soil staining was observed beneath the former UST and groundwater was not encountered in the excavation. Earth Tech cut and cleaned the UST, which was then transported by Superior Sanitation Services to BFI of Philadelphia, Pennsylvania, for disposal. The rinsate water generated during tank cleaning activities was removed by Casie Protank Environmental Services and transported for disposal to Casie Ecology Oil Salvage, Inc., of Vineland, New Jersey.

No soil staining was observed beneath the former UST. Photoionization detector (PID) field screening indicated volatile organic vapor levels ranging from 0.0 parts per million (ppm) to 7.0 ppm. The excavated soils were used as backfill material.

Earth Tech collected four confirmatory soil samples from the excavation sidewalls. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1, using an NJDEP-certified laboratory. All of the confirmatory soil samples (PED-278S-SS01, PED-278S-SS02, PED-278S-SS03, and PED-278S-SS04) contained TPH concentrations below the method quantitation limits of 12 milligrams per kilogram (mg/Kg), 11 mg/Kg, 10 mg/Kg, and 11 mg/Kg, respectively. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4).

Based on field observations and analytical data, Earth Tech recommends no further action relative to the former UST 278S at Building No. 278.

1.0 INTRODUCTION

Earth Tech an underground storage tank (UST) Closure Contractor (Certification No. US00537) approved by the New Jersey Department of Environment (NJDEP), was contracted by the United States Army Corps of Engineers (USACE), Baltimore District, to remove USTs at the Sievers-Sandberg United States Army Reserve Center (USARC), Pedricktown, New Jersey, under Contract No. DACW31-95-D-0097, Delivery Order No. 0015. This report details the clean closure of an UST located at Building No. 278 of the Sievers-Sandberg USARC. A Site Location Map is included as Figure 1 in Appendix A. This report fulfills the requirements of site investigation reporting as detailed in the New Jersey Technical Requirements for Site Remediation (NJAC 7:26E-3.10), and provides an overview of the site investigation activities, analytical results, and recommendations.

The Sievers-Sandberg USARC property was acquired by the USACE in 1917, and the Delaware Ordnance Depot was established at Pedricktown in 1918. The depot became the backup storage facility for the Picatinny and Frankfort Arsenals and the Aberdeen Proving Ground. In 1960, the Pedricktown facility became the headquarters for the 42nd and 43rd Artillery, which commanded the Nike Missile Sites in the Philadelphia area. In 1965, the Salem County Technical Institute gained control of the site. In the late 1960s, the 79th Army Reserve Command and the 21st Corps were replaced by the 78th Division of the Army Reserves, which is still stationed at the facility. The eastern portion of the property is currently leased by Salem Community College.

Building No. 278 is a former residential building. A 550-gallon fiberglass UST (designated 278S) at the site was formerly used to store No. 2 heating oil for heating the building. The UST was removed because the heat source for the building is being converted from heating oil to natural gas. See Plate A1 in Appendix A for a site plan of the Sievers-Sandberg USARC. The UST was not a regulated tank (per NJAC 58:10); however, the UST was registered and an UST Closure Plan submitted to the NJDEP prior to initiating closure activities. The NJDEP UST Closure Approval is included in Appendix B.

2.0 SITE ASSESSMENT

On August 26, 1997, Earth Tech removed one 550-gallon fiberglass UST at the site. A second tank (UST 278N) was removed from Building 278 and a separate tank closure report was prepared and submitted to the NJDEP. Figure 2 in Appendix A shows the general site layout and the location of the UST. Photographic documentation of site activities is included in Appendix C. The UST was oriented parallel to the west side of Building No. 278. No utility lines were located in the vicinity of the UST.

Upon tank removal, the UST condition was examined by Ms. Christina Harris, an NJDEP-licensed UST Subsurface Evaluator (License No. 0017909). The tank was observed to be in good condition with no holes or pitting. No soil staining was observed in the excavation or along the excavation sidewalls. The UST measured approximately 6 feet long by 4 feet in diameter. Earth Tech personnel cut the UST at both ends to provide ventilation and access for tank cleaning. The tank was then cleaned using a pressure washer. The rinsate water was collected by Casie Protank Environmental Services and transported to Casie Ecology Oil Salvage, Inc. of Vineland, New Jersey, for disposal. The tank disposal certificate is included in Appendix D. The liquid disposal manifest is included in Appendix E.

Earth Tech personnel examined the UST excavation after removing the tank. No soil staining was observed beneath the former UST. Groundwater was not encountered in the excavation. Based on the PID field screening, no soils were deemed contaminated (i.e., no photoionization detector [PID] readings greater than 100 parts per million [ppm]).

Confirmatory soil samples were collected in accordance with NJAC 7:26E-6.4. Earth Tech personnel collected a total of four soil samples from the walls of the excavation (PED-278S-SS01, PED-278S-SS02, PED-278S-SS03, and PED-278S-SS04). Field screening of each soil sample using the PID indicated volatile organic vapor readings ranging from 0.0 ppm to 7.0 ppm. Figure 2 in Appendix A depicts the soil sample locations. Each sample was submitted for laboratory analysis for the presence and concentration of total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) Method 418.1. The samples were analyzed by Industrial & Environmental Analysts, Inc. (IEA), an NJDEP-certified laboratory.

All four samples contained TPH concentrations below the method quantitation limit. All sampling and analysis was performed in accordance with NJDEP Post-Remedial Action Requirements (NJAC 7:26E - 6.4). Certificates of analysis and chain-of-custody forms are included as Appendix F. Because the tank is unregulated, an executed NJDEP Site Inspection Report Checklist is not included in this report.

Table 1 Soil Analytical Results

Sample Designation and Location	Date Sampled	Depth (fbg)	PID (ppm)	TPH 418.1 (mg/Kg)	Quantitation Limits (mg/Kg)
PED-278S-SS01 east excavation floor	8/26/97	9	1.2	BQL	12
PED-278S-SS02 south excavation floor	8/26/97	9	7.0	BQL	11
PED-278S-SS03 west excavation floor	8/26/97	9	1.2	BQL	10
PED-278S-SS04 north excavation floor	8/26/97	9	0.8	BQL	11
<i>Notes:</i> TPH Total petroleum hydrocarbons fbg Feet below grade mg/Kg Milligram per kilogram PID Photoionization detector ppm Parts per million BQL Below quantitation limit					

The stockpiled soil generated during UST removal, along with imported backfill, was used to backfill the excavation. No soils associated with the UST closure were removed from the site.

3.0 CONCLUSIONS

The following is a summary of Earth Tech's site investigation, findings, and tank closure activities for UST No. 278S at Building No. 278 on the Sievers-Sandberg USARC:

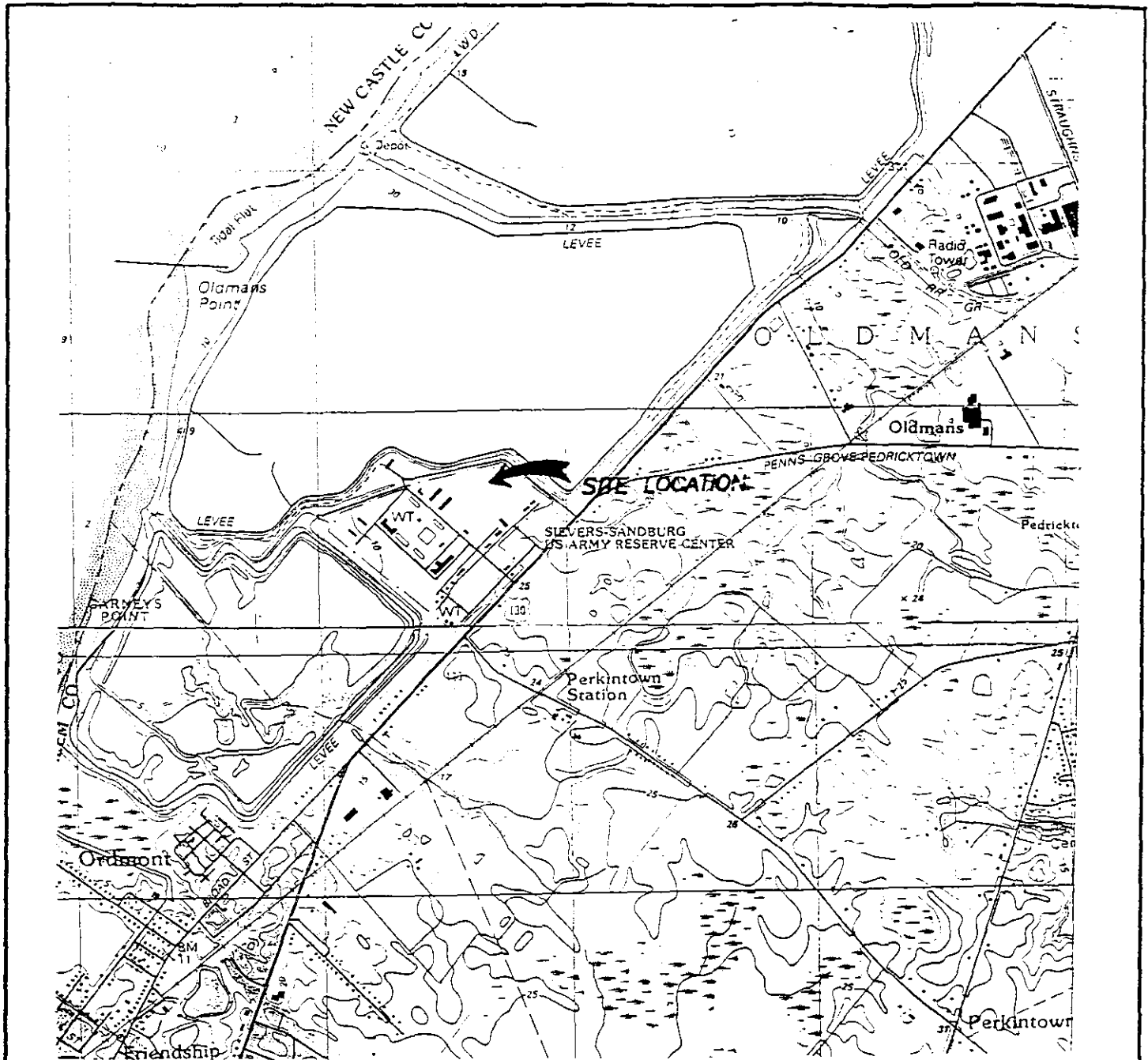
- On August 26, 1997, Earth Tech removed one 550-gallon, fiberglass UST used to store No. 2 heating oil for Building No. 278.

- No holes or pitting were observed in the tank.
- The cleaned UST was transported for disposal to BFI of Philadelphia, Pennsylvania.
- No stained soils were observed in the tank excavation.
- PID field screening was performed for excavated soils and soil samples. Vapor readings ranged from 0.0 ppm to 7.0 ppm.
- Four confirmatory soil samples were collected from the base of the UST excavation. The analytical results of soil samples indicated TPH concentrations below the method quantitation limits.

Based on the site investigation results, Earth Tech recommends no further action relative to former UST 278S at Building No. 278.

Appendix A

Figures



SOURCE:
 U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 MARCUS HOOK, PA-NJ-DEL 1993
 PHOTOREVISED 1995

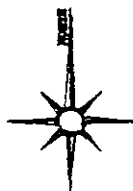
U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
 PENNS GROVE, NJ-DEL 1993
 PHOTOREVISED 1995


CONTOUR INTERVAL = 10 FEET

GRAPHIC SCALE

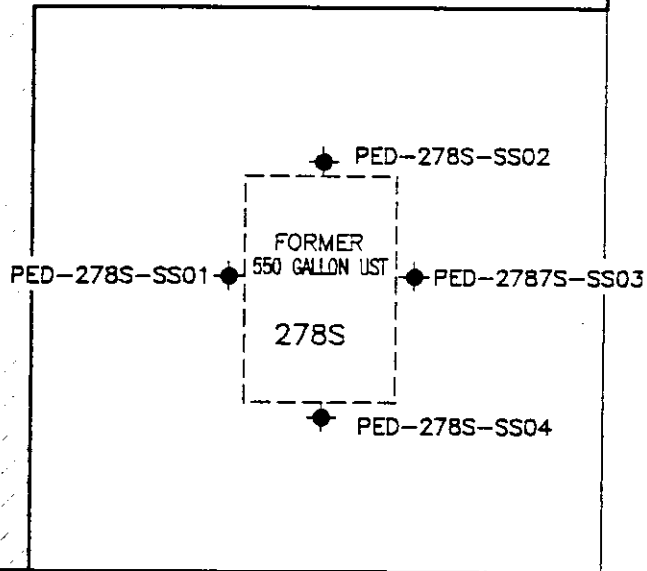


1" = 2000'



PROJECT: SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER PEDRICKTOWN, NEW JERSEY		EARTH  TECH A tyco INTERNATIONAL LTD. COMPANY	
PROJECT MANAGER: J.R.C.		PROJECT NO.: 21574	
DRAWN BY: B.W.D.		DATE: 5/15/97	SCALE: AS SHOWN
		REVIEWER: C.S.S.	
		FIGURE NO.: 1	

BUILDING # 278



EXTENT OF EXCAVATION FOR UST #278S

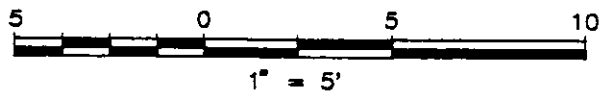
SERVICE ROAD




LEGEND

◆ PED-278S-SS03 SOIL SAMPLE LOCATION AND DESIGNATION

GRAPHIC SCALE



PROJECT: SIEVERS-SANDBERG USARC PEDRICKTOWN, NEW JERSEY		EARTH  TECH	
PROJECT MANAGER: J.C.C.		PROJECT NO.: 21574.01	
DRAWN BY: B.W.D.		REVIEWED BY: K.C.B.	DATE: 9/29/97
SCALE: AS SHOWN		FIGURE NO.: 2	

Appendix B
NJDEP UST Closure Approval

**UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL**

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

**DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028**

TMS # C97-0793

UST # 0071994

SIEVERS-SANDBERG U.S. ARMY RESERVE CENTER
BUILDING 273, ROUTE 130
PEDRICKTOWN

SALEM

**THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM
THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et. seq:**

REMOVAL OF: six 550 gallon #2 fuel/oil UST(s), and appurtenant
piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in the Attachment enclosed within.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

CONTACT PERSON:

JANIS CROWDER

TELEPHONE:

804-354-6409

EFFECTIVE DATE: 08/14/97

**THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.**

H. R. Patel
Joshua Gradwohl, SUPERVISOR
BUREAU OF FIELD OPERATIONS (705)

Appendix C

Photographic Documentation



Photograph No.: 1 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Building 278S prior to excavation activities.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/26/97
View: South.



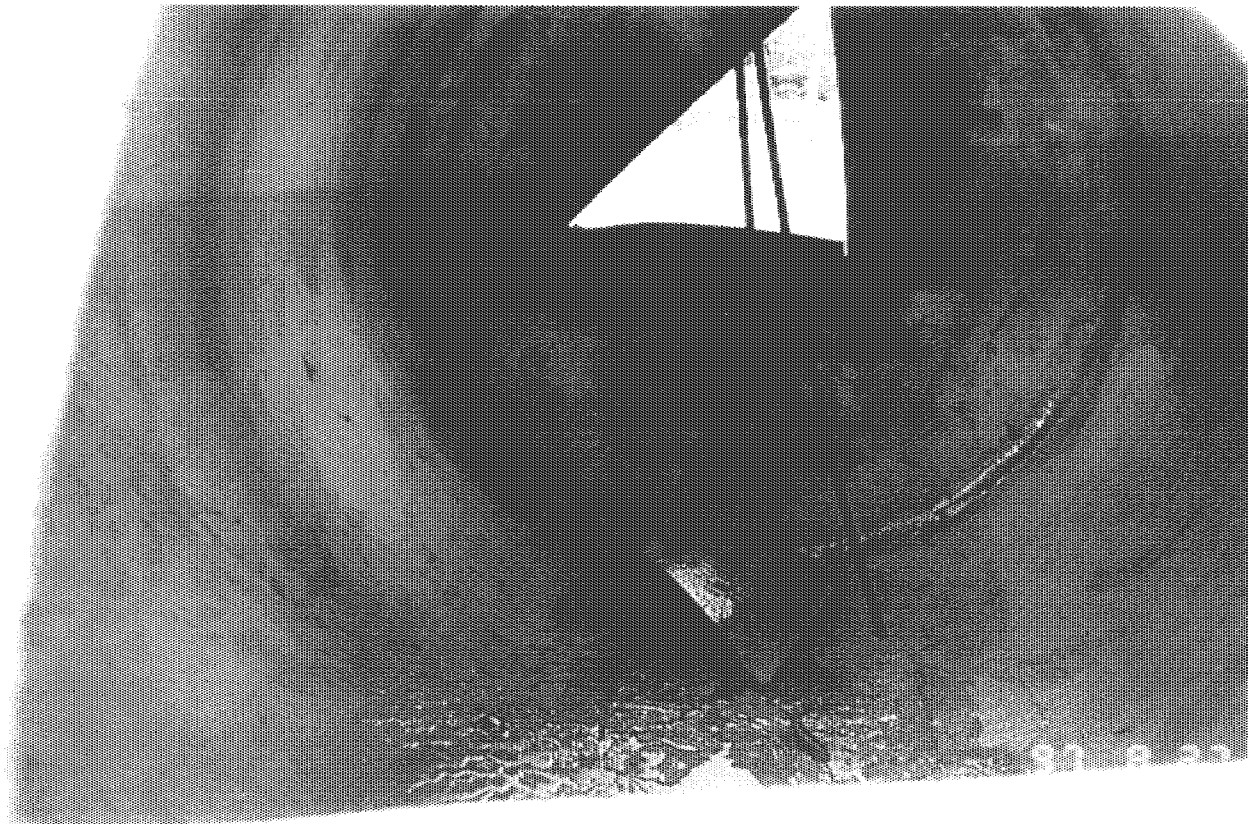
Photograph No.: 2 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Tank removed and staged for cleaning.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 3 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Tanks cleaned using pressure washer.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



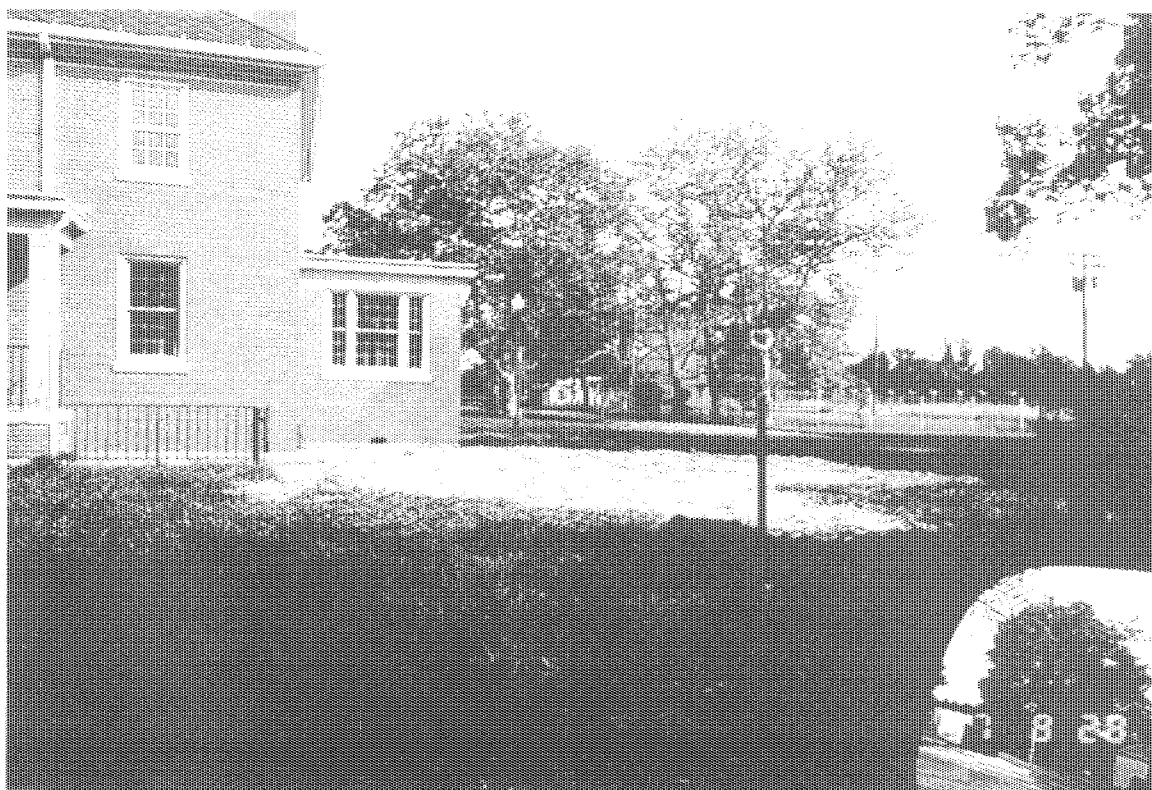
Photograph No.: 4 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Cleaned UST with holes rendering it unusable.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 5 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Tank was loaded into rolloff box for disposal.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/27/97
View: Detail.



Photograph No.: 6 Contract No.: DACW31-95-D-0097
Location: Pedricktown U.S. Army Reserve Center (Bldg 278S)
Photographer: B. Rayfield
Description: Building 278S excavation backfilled and restored with seed and straw.

Earth Tech Job No. 21574
D.O. No.: 016
Date: 8/28/97
View: South.

Appendix D
Tank Disposal Certificate



Environmental Technology Incorporated (d.b.a. Earth Tech) Certification of Tank Disposal

In accordance with American Petroleum Institute recommended practices

Client: USACE Job No: 21574 Date: 9/23/97

Site from which the tank was removed: Seven-Sandburg Reserve Center

Site to which the tank is to be transported for final disposal:

Tank Description

Capacity: 550-gallon Type (incl. location and): Fiberglass Condition: Excellent

Previous Contents: Heating Oil

Tank markings: None

Cleaning Certification

This is to certify that the above described tank has been cleaned in accordance with API methods and procedures and has been rendered suitable for disposal as scrap. All product residues were removed and the interior of the tank was tested and found to be free of harmful vapors.

Prepared by: C. Hoffman Company: Environmental Technology Incorporated Date: 9/23/97

Transportation

This is to certify that the above described tank has been received and will be transported to the disposal site as specified above.

Received by: [Signature] Shipper or Receiver Date:

Received for Disposal

This is to certify that the above described tank has been received for disposal and will be disposed of in accordance with applicable regulatory requirements.

Received by: [Signature] Disposal Facility: Phil Transco Date:

Comments

Fiberglass tank demolished in roll-off box for disposal after cleaning interior

Appendix E
Liquid Disposal Manifest

CASIE / PROTANK

ENVIRONMENTAL SERVICES

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No. ATDVL1019E0168	Document No. 1174	2. Page 1 8013
3. Generator's Name and Mailing Address Selvers-Sandberg Reserve Ctr. Route #130 Bedricktown NC 28607			A. Non-hazardous Manifest Document Num NHZ0200 7448	
4. Generator's Phone (900) 759-7143			B. State Generator's ID SAME	
5. Transporter 1 Company Name Casie Ecology Oil Salvage Inc.		6. US EPA ID Number NC17101415191919161913		C. State Trans. ID 3 1 12 15 <
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (800) 535-44
9. Designated Facility Name and Site Address Casie Ecology Oil Salvage, Inc. T&A 3119 N. Mill Rd Wendland NC 28606		10. US EPA ID Number NC17101415191919161913		E. State Trans. ID
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No. Type	13. Total Quantity
a. FLAMMABLE LIQUID, N.O.S. (Fuel Oil)			10	360
b.				
c.				
d.				
J. Additional Descriptions for Materials Listed Above			K. Shipping Codes for Wastes Listed Above	
a.			a.	c.
b.			b.	d.
15. Special Handling Instructions and Additional Information				
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 of any applicable state law.				
Printed/Typed Name		Signature		Month Day
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day
Printed/Typed Name		Signature		Month Day
19. Discrepancy Indication Space				
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in item 19.				
Printed/Typed Name		Signature		Month Day

In case of an emergency or spill, immediately call CASIE (800) 354-2584

GENERATOR

TRANSPORTER

FACILITY

Appendix F

Laboratory Certificates and Chain-of-Custody

Industrial & Environmental Analysts, Inc. (IEA)
 Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
 IEA Sample #: 9708533-14 Date Received: 08/28/97
 Client Name: Earth Tech Date Sampled: 08/26/97
 Client Proj. I.D.: 22818 Pedricktown
 Sample I.D.: PED-278S-SS01

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	12 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
 Quantitation limits and results have been adjusted for moisture correction factor
 BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #:	2070-038	Matrix:	Soil
IEA Sample #:	9708533-15	Date Received:	08/28/97
Client Name:	Barth Tech	Date Sampled:	08/26/97
Client Proj. I.D.:	22818 Pedricktown		
Sample I.D.:	PED-278S-SS02		

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR
 Quantitation limits and results have been adjusted for moisture correction factor
 BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-16 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-278S-SS03

Parameter	Method	Quantitation		Results	Date	Date
		Limits			Prepared	Analyzed
TPH by IR	EPA 418.1	10 mg/Kg		BQL	09/09/97	09/11/97 BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR

Quantitation limits and results have been adjusted for moisture correction factor

BQL = Below Quantitation Limits

Industrial & Environmental Analysts, Inc. (IEA)
Petroleum Hydrocarbons by IR

IEA Project #: 2070-038 Matrix: Soil
IEA Sample #: 9708533-17 Date Received: 08/28/97
Client Name: Earth Tech Date Sampled: 08/26/97
Client Proj. I.D.: 22818 Pedricktown
Sample I.D.: PED-2785-SS04

Parameter	Method	Quantitation Limits	Results	Date Prepared	Date Analyzed	Analyst
TPH by IR	EPA 418.1	11 mg/Kg	BQL	09/09/97	09/11/97	BW

Comments:

TPH by IR = Petroleum Hydrocarbons by IR

Quantitation limits and results have been adjusted for moisture correction factor

BQL = Below Quantitation Limits

CHAIN OF CUSTODY RECORD

WORK ORDER #: _____
 DUE DATE : _____

COMPANY: EARTH TECH
 ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
 PHONE #: (804) 358-5800 FAX #: (804) 354-0300
 P.O. #: M650106553 804
 PROJECT MANAGER: JANIS CROWDER
 PROJECT ID/LOCATION: PEDRICKTOWN/22818

- SAMPLE TYPE** **CONTAINER TYPE**
- 1. WASTEWATER P - PLASTIC
 - 2. SOIL G - GLASS
 - 3. SLUDGE V - VOA
 - 4. OIL
 - 5. DRINKING WATER
 - 6. WATER (GW/MW/SW)
 - 7. OTHER (SPECIFY)

ANALYSES

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE	SPECIAL INSTRUCTIONS/ COMMENTS
			SIZE	TYPE	#	DATE	TIME		
	PED-277N-SS01	2	4/2	G	1	8/26	1011	4°C	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH - DRG 418.1</p> <p>LF TPH > 1000 ppm run for 8260 volatile organics plus 15 packs including xylenes, target compound list a priority pollutant volatile organics with library search per NJ DEP.</p>
	PED-277N-SS02						1012		
	PED-277N-SS03						1013		
	PED-277N-SS04						1014		
	PED-277S-SS01						1140		
	PED-277S-SS01B						1141		
	PED-277S-SS02						1142		
	PED-277S-SS03						1143		
	PED-277S-SS04						1145		
	PED-278N-SS01						1255		
	PED-278N-SS02						1256		
	PED-278N-SS03						1257		
	PED-278N-SS04						1258		

200-038
 2078 nrc 2/14/97

SAMPLED BY: Betha Key DATE: 8-26-97 QUOTATION #:

RELINQUISHED BY: Betha Key DATE: 8-27-97 RECEIVED BY: FEDEX DATE: _____

RELINQUISHED BY: _____ TIME: _____ AIRBILL # 400717735 TIME: _____

METHOD OF SHIPMENT: _____ DATE: 8-28-97 RECEIVED FOR LAB BY: [Signature] DATE: _____

COOLER TEMPERATURE: _____ TIME: 1320

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected contaminants in these samples other than those listed above?



TOX, INC.

CHAIN OF CUSTODY RECORD

15 Wiggins Ave., Bedford, MA 01730
Telephone: (617) 275-3330
Fax: (617) 275-7478

WORK ORDER #: _____

DUE DATE : _____

COMPANY: EARTH TECH
 ADDRESS: 2229 Tomlyn St.
Richmond, VA 23230
 PHONE #: (804) 358-5858 FAX #: (804) 354-0300
 P.O. #: ML501065353
 PROJECT MANAGER: JANIS CROWDER
 PROJECT ID/LOCATION: Pedrickton 22818

SAMPLE TYPE	CONTAINER TYPE	ANALYSES									
		1. WASTEWATER	P - PLASTIC	2. SOIL	G - GLASS	3. SLUDGE	V - VOA	4. OIL	5. DRINKING WATER	6. WATER (GW/MM/SW)	7. OTHER (SPECIFY)
		<i>TPH - 205418.1</i> <i>TLP PCRAMETALS</i> <i>+ 8c, Ni.</i> <i>for Janis Crowder</i> <i>JJ 8/20/97</i>									

TOXIKON #	SAMPLE IDENTIFICATION	SAMPLE TYPE	CONTAINER			SAMPLING		PRESERVATIVE									SPECIAL INSTRUCTIONS/ COMMENTS
			SIZE	TYPE	#	DATE	TIME										
	PED-2785-SS01	2	4oz	G	1	8/26	1520	4°C	X								
	PED-2785-SS02																
	PED-2785-SS02	2	4oz		1	8/26	1521	4°C	X								
	PED-2785-SS03	2	4oz		1		1522	4°C	X								
	PED-2785-SS04	2	4oz	↓	1	↓	1523	4°C	X								
	PED-DC	3	1 liter	G	1	8/27	1440	4°C	X								

IF TPH > 1000 ppm run for 8260 volatile organics plus 15 packs including xylenes, target compound list or priority pollutant volatile organics with library search per NJDEP

2010-038

SAMPLED BY: Beth Makay
 DATE: 8-26-97
 TIME: _____

RELINQUISHED BY: Beth Makay
 DATE: 8-27-97
 TIME: _____

RELINQUISHED BY: _____
 DATE: _____
 TIME: _____

METHOD OF SHIPMENT

QUOTATION #:

RECEIVED BY: FEDEX
 DATE: _____
 TIME: _____

RECEIVED FOR LAB BY: _____
 DATE: _____
 TIME: _____

COOLER TEMPERATURE

RUSH BUSINESS DAY TURN AROUND
 ROUTINE
 Sample disposal information
 Are there any other known or suspected contaminants in these samples other than those listed above?