United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 2532
Charles Wood Area

COPY

NJDEP UST Registration No. 0081515-22

December 1997

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 2532

CHARLES WOOD AREA
NJDEP UST REGISTRATION NO. 0081515-22

DECEMBER 1997

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

PREPARED BY:

SMC ENVIRONMENTAL SERVICES GROUP
501 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

PROJECT NO. 2429-3080

2532.DOC

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EXECUTIVE SUMMARY

UST Closure

On September 19, 1995, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated July 18, 1995 at the Charles Wood area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081515-22 (Fort Monmouth ID No. 2532), was located south of Building 2532 in the Charles Wood area of U.S. Army, Fort Monmouth. UST No. 0081515-22 was a 550-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.* The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation.* Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank. Post-excavation samples were collected on September 27, 1995 and contained levels of TPHC ranging in concentration from 484 to 960 mg/kg.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with native topsoil and restored to its original condition.

Conclusions and Recommendations

Based on the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 0081515-22 at Building 2532.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081515-22, was closed at Building 2532 at the Charles Wood area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on September 19, 1995. Refer to site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP on July 18, 1995. The UST was a steel 550-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081515-22 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0081515-22 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST Closure Approval Letter and signed Site Assessment Summary form for UST No. 0081515-22 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils, and reviewing analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

This UST Closure and Site Investigation Report has been prepared by SMC Environmental Services Group, to assist the U.S. Army DPW in complying with the NJDEP-BUST regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in the final section of this report.

1.2 SITE DESCRIPTION

Building 2532 is located in the Charles Wood area of the Fort Monmouth Army Base, as shown on Figure 1. UST No. 0081515-22 was located south of Building 2532 and appurtenant piping ran approximately thirteen (13) feet north from the excavation to Building 2532. The fill port area was located directly above the tank. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 2532. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Charles Wood area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Charles Wood area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and ironoxide encrusted (Minard).

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Charles Wood area range from 20 feet above mean seal level (MSL) to 71 feet above MSL.

Hydrogeology

The water table aquifer in the Charles Wood area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Six well records for monitor wells installed at locations within the Charles Wood area in February 1981 were used for reference. The wells were completed to total depths ranging from 20 to 25 feet below ground surface (bgs). Water was encountered at depths ranging from 5 to 12 feet bgs.

The lithologic descriptions for these borings described deposits that were primarily fine to coarse, glauconitic sands, with traces of gravel, silt, and clay. These sediments are part of the Hornerstown Marl, from the Tertiary Period (Paleocene Series, approximately 58 to 66 Ma). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Shallow groundwater is locally influenced within the Charles Wood area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Charles Wood area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. Building 2532 is located approximately 300 feet north of Wampum Brook, the nearest water body. Based on the Charles Wood area topography, the groundwater flow in the area of Building 2532 is anticipated to be to the south.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were identified by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

The UST was completely emptied of all liquids prior to removal from the excavation. Approximately 75 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Co., Inc. to the Lionetti Oil Recovery Co. Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest (NJA-2204646).

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a hole was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed. Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The steel tank was transported to Mazza & Sons, Inc. for disposal in compliance with all applicable regulations and laws. See Appendix F for photographs of the tank.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Name of transporter/contact person
- Former contents

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Investigation Activities.

- Subsurface Evaluator: Eugene W. Lesinski
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-0989
  NJDEP Certification No.: 0014537

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (908) 532-4359
  NJDEP Company Certification No.: 13461

- Hazardous Waste Hauler: Lionetti Oil Recovery Co. Inc
  Phone Number: (908) 721-0900
  NJDEP Hazardous Waste Hauler No.: S6247

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping did not exhibit any evidence of potential contamination.

2.3 SOIL SAMPLING

On September 19, 1995, samples were obtained with plastic spoons and the excavated area was backfilled. In order to obtain proper samples, the site was re-excavated to its original dimensions and resampled. On September 27, 1995, following the re-excavation, post-excavation soil samples A, B, C, D, E, and F (DUP C) were collected from a total of five (5) locations of the UST excavation. Excavation bottom and sidewall samples were collected along the excavation floor at a depth of 8.0 feet below ground surface (bgs). Sample E was collected along the former piping length of the excavation, which was approximately thirteen (13) feet in length. The piping sample was collected at a depth of 2.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on September 27, 1995. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on September 27, 1995, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained levels of TPHC ranging in concentration from 484 to 960 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2532 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 0081515-22 at Building 2532.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 2532, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	Analysis Method
A	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1
B	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1
C	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1
D	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1
E	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1
F (DUP C)	9/27/95	9/27/95	Soil	Post-Excavation	TPHC	418.1

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 2

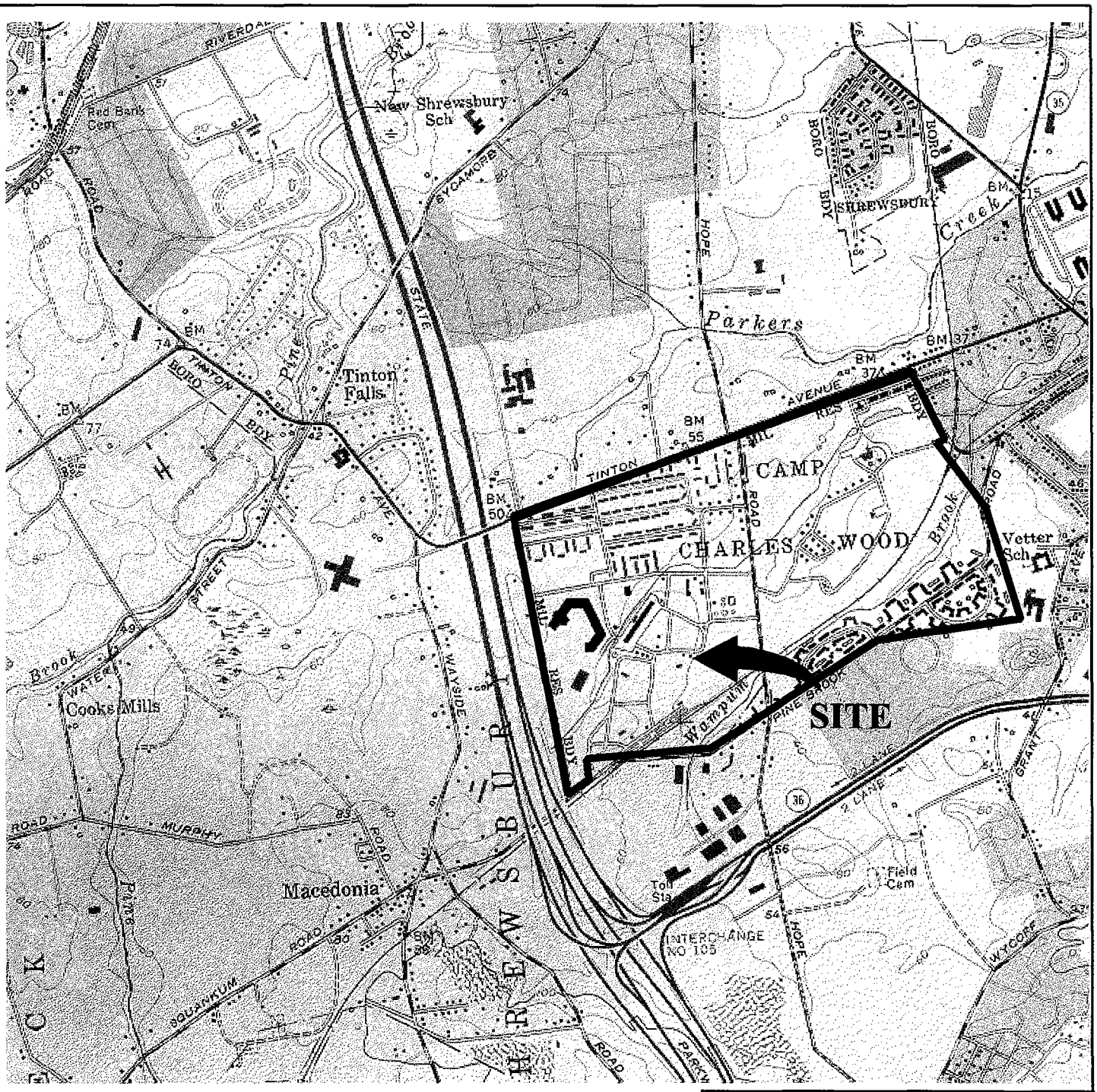
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 2532, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Sample Quantitation Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/8.0'	1947.1	9/27/95	9/27/95	Total Solid	--	--	95 %	--	--
				418.1	100	yes	640	10,000	No
B/8.0'	1947.2	9/27/95	9/27/95	Total Solid	--	--	91 %	--	--
				418.1	100	yes	485	10,000	No
C/8.0'	1947.3	9/27/95	9/27/95	Total Solid	--	--	94 %	--	--
				418.1	100	yes	690	10,000	No
D/8.0'	1947.4	9/27/95	9/27/95	Total Solid	--	--	92 %	--	--
				418.1	100	yes	484	10,000	No
E/2.0'	1947.5	9/27/95	9/27/95	Total Solid	--	--	93 %	--	--
				418.1	100	yes	960	10,000	No
F (DUP C)/8.0'	1947.6	9/27/95	9/27/95	Total Solid	--	--	93 %	--	--
				418.1	100	yes	661	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
ND	Not detected above stated sample quantitation limit
--	Not applicable
TPHC	Total Petroleum Hydrocarbons

FIGURES



LONG BRANCH, NJ

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE -SERIES V822

New Jersey

Quadrangle Location

Mapped, edited and published by the Geological Survey

FIGURE 1

SITE LOCATION MAP

Building 2532

Charles Wood Area

Fort Monmouth Army Base

Monmouth County, NJ

SMC Environmental Services Group

Engineers, Managers, Scientists, & Planners

Valley Forge, Pennsylvania

Scale:	1"=2,000'	Date:	DEC 1997

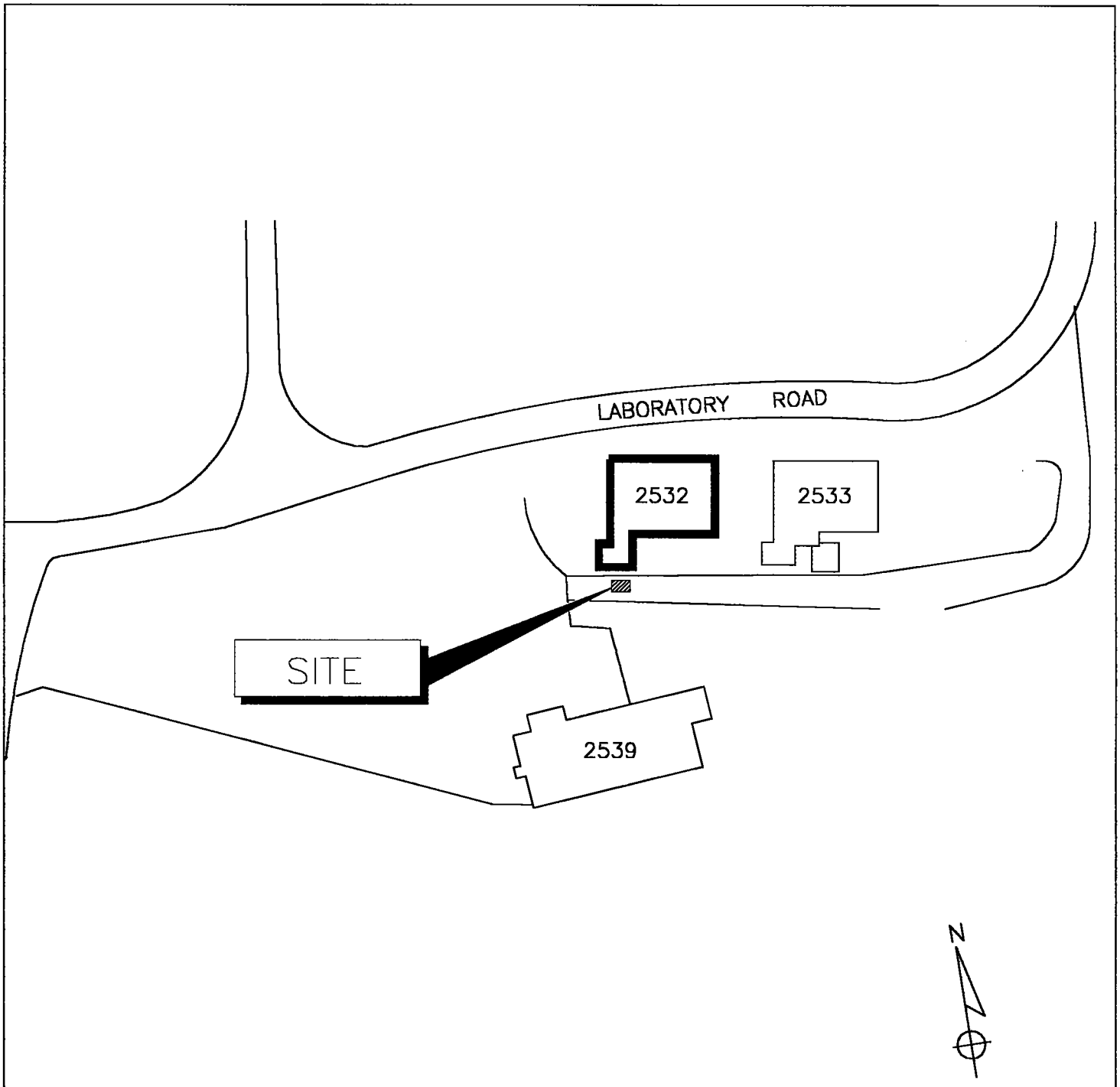


FIGURE 2
SITE MAP
BUILDING 2532
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=100' | DATE: DEC. 1997

2532 2429 FIG2

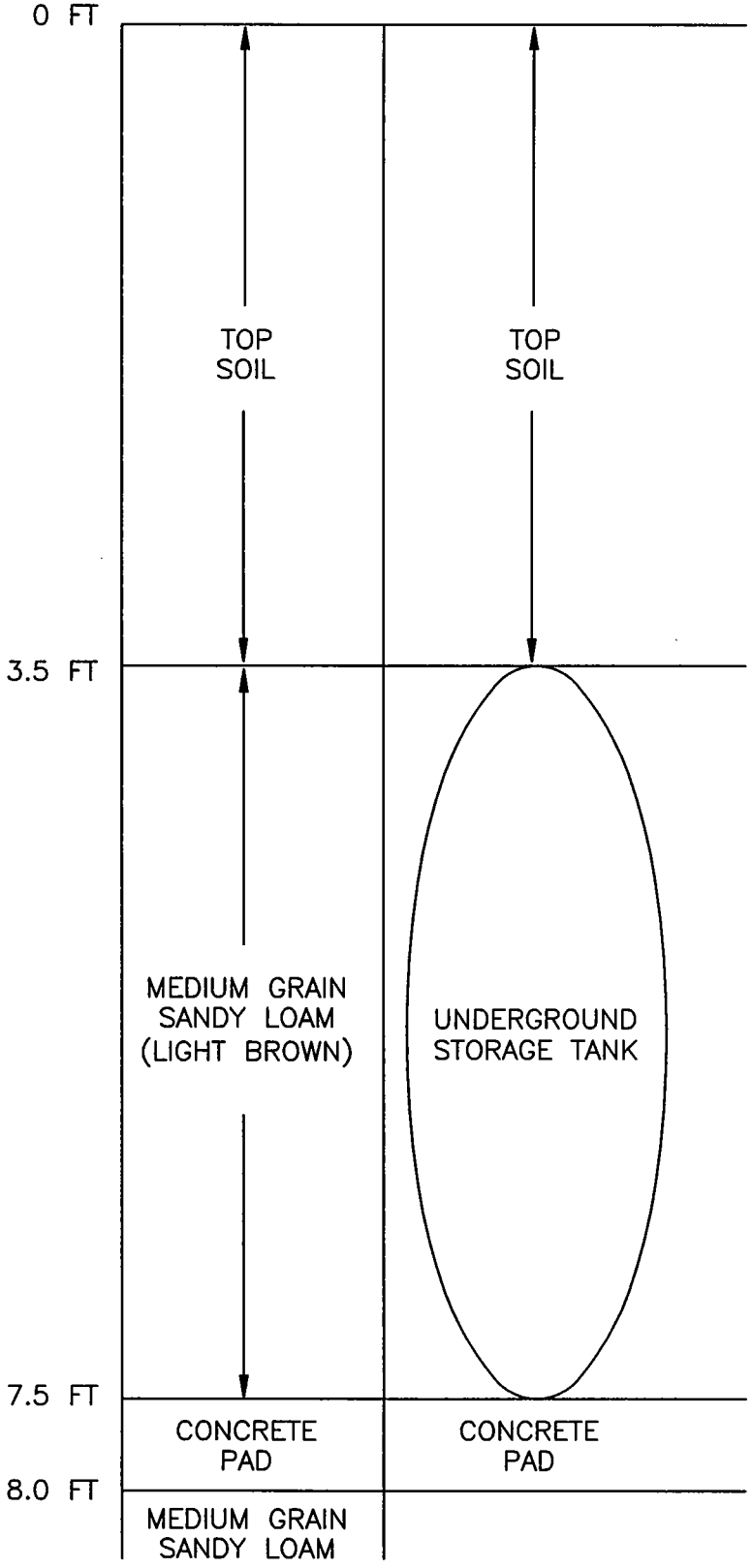
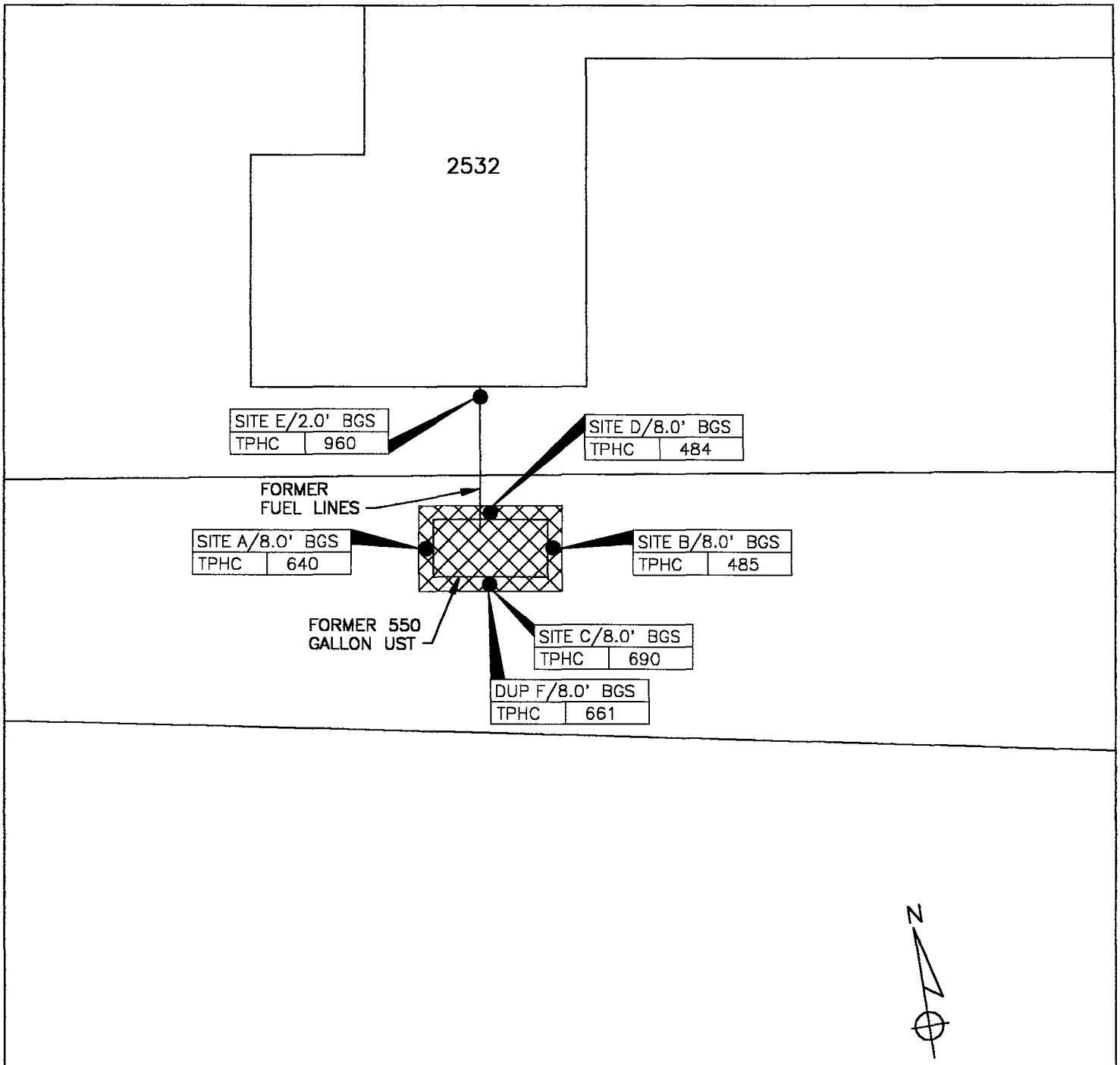


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 2532
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: NTS | DATE: OCT. 1997

2532 2429 FIG3



LEGEND

- SOIL SAMPLE LOCATION (SEPTEMBER 27,1995)
- LIMIT OF EXCAVATION (SEPTEMBER 27,1995)

NOTES: 1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 2532
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=10' | DATE: DEC. 1997

2532 2429 FIG4

APPENDIX A

NJDEP-BUST CLOSURE APPROVAL

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

JUL 18 1995

Mr. Dinker Desai
SELFM-EH-EV
Department of the Army
Headquarters CECOM Fort Monmouth
Fort Monmouth, NJ 077703-5000

Dear Mr. Desai:

Re: UST Closure Plan Approvals
Fort Monmouth Army Base
Fort Monmouth, Monmouth County

The NJDEP has reviewed the Underground Storage Tank Closure Plans for eight Number 2 Fuel Oil underground storage tanks located on the Fort Monmouth Army Base. Based on this review, the NJDEP hereby approves the closure plans as submitted on June 21, 1995 for the following tanks:

AREA	REGISTRATION NO.	BLDG NO.	UST NO.	TANK SAMP	LINE SAMP	REMOVAL DATE	REPORT DATE
CW - West	0081515	2504	16	4/1	1	7/24/95	11/24/95
CW - West	0081515	2529	20	4/1	1	7/25/95	11/29/95
CW - West	0081515	2535	25	4/1	1	7/26/95	11/28/95
CW - West	0081515	2536	26	4/1	2	7/28/95	11/30/95
CW - West	0081515	2537	27	4/1	1	8/1/95	12/4/95
CW - West	0081515	2561	31	4/1	2	8/2/95	12/4/95
CW - West	0081515	2532	22	4/1	1	6/5/95	10/6/95
CW - West	0081515	2533	23	4/1	2	6/7/95	10/9/95

Please advise me regarding the progress of tanks 22 and 23.

If you should have any questions or require any additional information, please feel free to contact me at (609) 633-1455.

Sincerely,

Ian R. Curtis, Case Manager
Bureau of Federal Case Management

cc. Kevin Kratina, BUST

RPCE\BFCM\FTMMTH27.IRC

APPENDIX B

SITE ASSESSMENT SUMMARY

UST-014
2/91

FOR STATE USE ONLY
UST#
Date Rec'd
TMS #
Staff

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Responsible Party Site Remediation
CN 029
TRENTON, N.J. 08625-0028
Tel. # 609-984-3156
Fax.# 609-292-5604

Scott A. Weiner
Commisioner

Karl J. Delaney
Director

UNDERGROUND STORAGE TANK
SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission: _____

Building No. 2532 UST No. 81515-22

0192477-1
Facility Registration #

1. FACILITY NAME AND ADDRESS:

U.S. Army Fort Monmouth New Jersey
Directorate of Engineering and Housing Building 167
Fort Monmouth New Jersey 07703 County Monmouth
Telephone No. 908-532-6224

OWNER'S NAME AND ADDRESS, if different from above.

_____

_____

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found ? _____Yes __X__ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was (were) _____N/A_____

C. Have any vapor hazards been mitigated?_____Yes _____ No __X__ N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure approval No. July 18, 1995 letter

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A.-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

a. North arrow and scale
b. The locations of the ground water monitoring wells
c. Location and depth of each soil sample and boring
d. All major surface and subsurface structures and utilities
e. Approximate property boundaries
f. All existing or closed underground storage tank systems, including appurtenant piping
g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? __X__Yes _____ No _____ N/A

2. Were soil borings taken at the tank system closure site as prescribed? _____Yes ____ No __X__ N/A

3. Attach the analytical results in tabular form and include the following information about each sample

a. Customer sample number (keyed to the site map)
b. The depth of the soil sample
c. Soil boring logs
d. Method detection limit of the method used
e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed _____0_____

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? _____Yes __X__ No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. ____N/A_____ppb total BTEX, _____N/A_____ppb total non-targeted VOC
2. ____N/A_____ppb total B/N, _____N/A_____ppb total non-targeted B/N
3. ____960_____ppm TPHC
4. ____N/A_____ ppb _____N/A____(for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface. _____ Yes _____ No
2. Free product contaminated soils are suspected to exist below the water table. _____ Yes _____ No
3. Free product contaminated soils are suspected to exist off the property boundaries. ____Yes ____No

D. Was the vertical and horizontal extent of contamination determined? _____Yes _____ No _____ N/A

E. Does soil contamination intersect ground water? _____Yes _____ No _____ N/A

VI. GROUND WATER CONTAMINATION

A. Was ground water contamination found? _____ Yes __X__ No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be: N/A

1._____ppb total BTEX._____ppb total non-targeted VOC
2._____ppb total B/N._____ppb total non-targeted B/N
3._____ppb total MTBE._____ppb total TBA
4._____ppb_____(for non-petroleum substance)
5. greatest thickness of separate phase product found _____
6. separate phase product has been delineated _____Yes _____ No _____ N/A

C. Results (s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. _____Yes _____No _____ N/A

2. The number of these wells identified is _____.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commerical, or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is_____ feet deep and screening begins at a depth of _____ feet.

E. A plan for separate phase product recovery has been included. _____Yes _____ No _____ N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well. _____Yes _____ No _____ N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. _____Yes _____ No

2. The plume is suspected to continue off the properly at concentrations greater than MCLs. _____Yes _____ No

3. Off property access (circle one): is being sought has been approved has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Eugene Lesinski
SIGNATURE SEE ATTACHED SUB-SURFACE EVALUATOR LOG
COMPANY NAME U.S. Army Fort Monmouth DATE _____
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP
CERTIFYING NUMBER 0014537

UST-014
2/91

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) SAME AS SITE ASSESSMENT SIGNATURE _____

COMPANY NAME _____ DATE _____
(Peformer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITIES

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1l].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) James Ott SIGNATURE James Ott

COMPANY NAME U.S. Army Fort Monmouth DATE 3/25/98

PLEASE SIGN & DATE

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2l]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership. governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

U ARMY, SELFM-PW-EV

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 2532 REG.#: 0081515 - 22 CLOSURE#: DEP LTR 7-18-95
DATE: 9-19-95 TOA: 0800 TOD: 1600
GOV. SSE: LESINSKI NJDEP CERT.#: 0014537
REMOVAL CONTRACTOR: SAI Inc.
CLOSURE SUPERVISOR: LARRY GREEN NJDEP CERT.#: ~~[illegible]~~
WEATHER: PARTLY CLOUDY - 65°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	Y
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Y
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	Y
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	N/A
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# N/A	N
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	Y
GROUNDWATER WAS ENCOUNTERED AT — FEET BG, A SHEEN (WAS/WAS NOT) OBSERVED ON GW	N
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	Y*
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	Y*
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	Y*
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	Y*
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	Y
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	N/A
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	N
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS^3), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	N

CHECK ALL BOXES, LEAVE NO BLANKS

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: 9-19-95

*Resampled on 9/21/95 due to use of plastic spoons

APPENDIX C

WASTE MANIFEST

State of New Jersey
Department of Environmental Protection
Hazardous Waste Regulation Program
Manifest Section
CN 421, Trenton, NJ 08625-0421

* 2 2 0 4 6 4 6 *

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.) *Form Approved. OMB No. 2050-0039. Expires 9-30-9*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
US ARMY Communications Electronics Command
Charles Wood Area C/o Tinker Storage Bldg 173
Mt. Holly-Pwaev Fort Monmouth, New Jersey 07703

A. State Manifest Document Number **NJA 2204646**

B. State Generator's ID (Gen. Site Address)

4. Generator's Phone (908) 532-6117

5. Transporter 1 Company Name | 6. US EPA ID Number
LIONETTI OIL RECOVERY CO., INC. | NJD054004404

C. State Trans. ID-NJDEPE 5247
Decal No.

7. Transporter 2 Company Name | 8. US EPA ID Number

D. Transporter's Phone 908 - 721-0900

E. State Trans. ID-NJDEPE

Decal No.

9. Designated Facility Name and Site Address | 10. US EPA ID Number
LIONETTI OIL RECOVERY CO., INC./DBA LOPCO PETROLEUM SVCS.
RUNYON & CHEESEQUAKE ROADS
OLD BRIDGE NJ 08857

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone (908) 721-0900

	11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	PETROLUEM OIL (PETROLEUM OIL) COMBUSTIBLE LIQUID UN 1270 PG III	X	001	TT	00330	G	X721
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
a. T.L PETROLEUM OIL 75%
WATER 25%
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. T04-FILTRATION
b.
c.
d.

15. Special Handling Instructions and Additional Information
NOT EPA REGULATED, REGULATED AS HAZARDOUS WASTE IN NEW JERSEY
24 HOUR EMERGENCY RESPONSE #(908)721-0900
DECAL # 5247 ERG# 27 DEXSIL TEST KIT RESULTS < 1,000
1) BLDG 2532 - 75 GALLONS
2) BLDG 2533 - 85 GALLONS
3) BLDG 2504A - 100 GALLONS

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.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
		05	11	92

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
		05	11	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete.

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

6 GENERATOR MAIL TO TSD'S STATE

APPENDIX D

UST DISPOSAL CERTIFICATE

BLDG # 25372
UST # 0-081515-22

MAZZA & SONS, INC.
Metal Recyclers
Auto and Truck
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

NO. _____

DATE 5 Oct 95

Customer's Name F System

Address _____

Make of Autos

Tires
Tank
Price:

13700 LB G

12820 LB G

880

applied to bill

	Weight	Price
Cast Iron		
Steel	30.80	
~~Lt. Iron~~		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

Weigher _____ Customer Gary Sarah

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab. ID #:1947.1-.6
Sample Rec'd: 09/27/95
Analysis Start: 09/27/95
Analysis Comp: 09/28/95

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard
Ext. Meth: 3540A

NJDEPE UST Reg.#: 0081515-22
Closure #:
DICAR #:
Location #: Bldg. 2532

Lab ID.	Description	%Solid	Result	MDL
1947.1	Site A Bottom @ 8'W. OVA=ND	95	640.	100
1947.2	Site B Bottom @ 8'E. OVA=ND	91	485.	100
1947.3	Site C South @8' S.W. OVA=ND	94	690.	100
1947.4	Site D North @8' S.W. OVA=ND	92	484.	100
1947.5	Site E Fuel Lines @ 2' OVA=ND	93	960.	100
1947.6	Site F Duplicate OVA=ND	93	661.	100
M. Bl.	Method Blank	100	ND	100

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added, NA = Not Applicable
1948.6S= 92%,1948.6SD= 92%,RPD= 1.2%,1948.6Dup= 92%
QC Limits: Recovery = 60% to 140% and RPD = 14.9% (2 Std. Dev.)

Brian K. McKee
Laboratory Director

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab. ID #: 1945.1-.6
Sample Rec'd: 09/27/95
Analysis Start: 09/27/95
Analysis Comp: 09/28/95

Analysis: Munsel

Lab ID#	Soil Color
1947.1	10YR 3/4 Dark Yellowish Brown
1947.2	10YR 3/4 Dark Yellowish Brown
1947.3	10YR 3/4 Dark Yellowish Brown
1947.4	10YR 5/6 Yellowish Brown
1947.5	10YR 3/4 Dark Yellowish Brown
1947.6	10YR 3/4 Dark Yellowish Brown

Brian K. McKee
Laboratory Director

SERV-AIR, INC. An E-SYSTEMS Co.

P.O. #: PWS-07

Chain of Custody

DICAR NO.

Project #:	Sampler: KERRY GREEN	Date / Time 9/27/95 10:45	Analysis Parameters
Customer: E. LESINSKI SELFM-PW-EV	Site Name: BLDG NO. 2532 UST NO. 00815/5-22 DICAR NO. N/A		Start: / Finish:
Phone:			Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	MUNSEL	% SOLIDS	OVA	Remarks
1947.1	9/27 10:47	SITE A - W BOTTOM @ 8'	SOIL	1	X	X	X	ND	Samples kept < 4°C
.2	10:49	SITE B - E BOTTOM @ 8'		1	X	X	X	ND	
.3	10:51	SITE C - S SW @ 8'		1	X	X	X	ND	
.4	10:53	SITE D - N SW @ 8'		1	X	X	X	ND	
.5	11:00	SITE E - FUEL LINES @ 2'		1	X	X	X	ND	
.6	10:55	DUP - F							

OVA CALIBRATED 9/27/95 9:30

SERIAL # 1

METER READ: CH4= 95 AIR= 0

CALIBRATED BY: K. GREEN

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
Kerry Green	9/27 13:30	Sarah J. Hubbard	
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

Environmental Laboratory

Site Map not attached - Used dedicated S/S Spoons

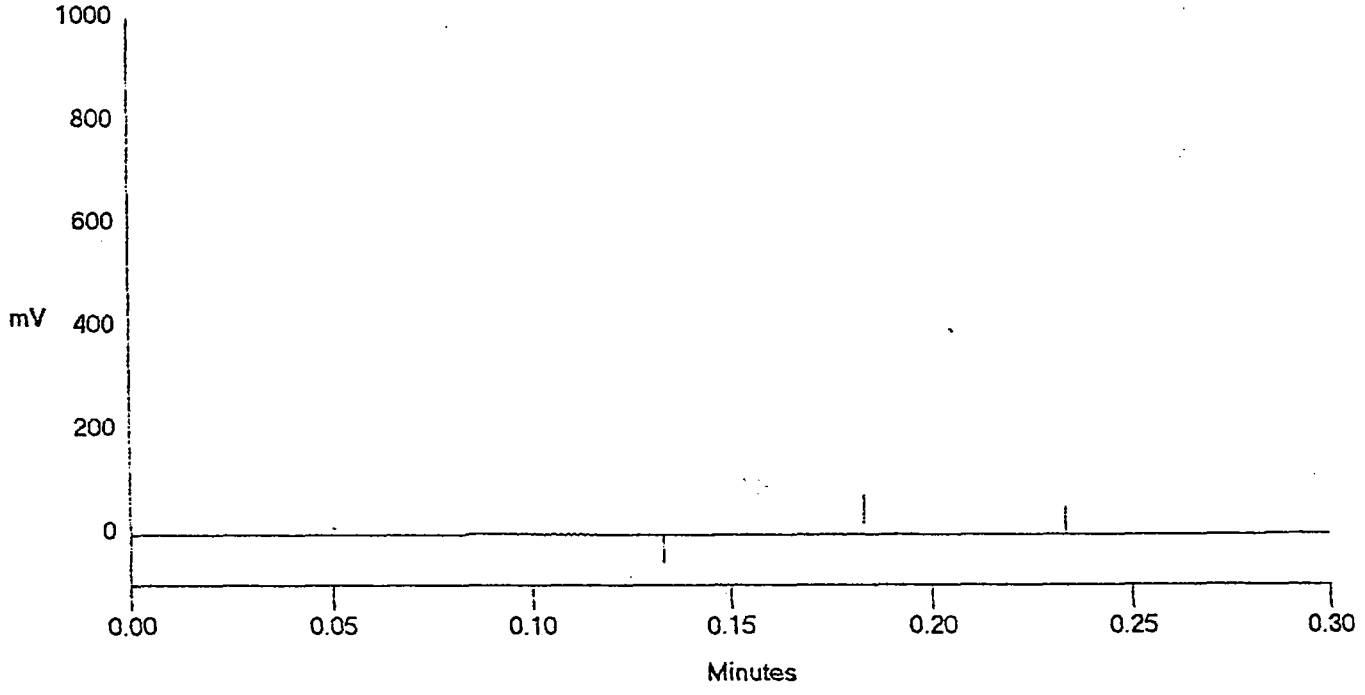
Sample Name: BLANK Date: 10/04/1995 11:58:08
Data File : C:\DX\DATA\10049511.D01
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 1 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
		Totals	0.000	0	0		

File: 10049511.D01 Sample: BLANK



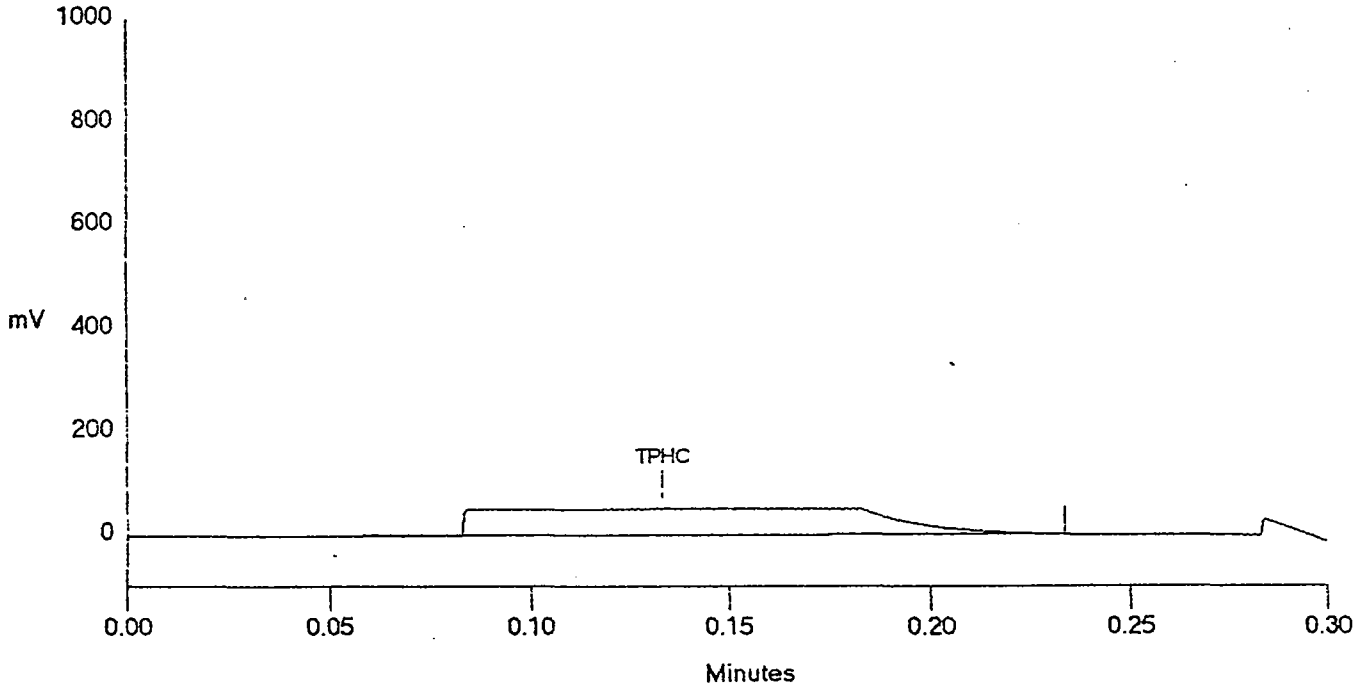
Sample Name: 1945.1 B2529 Date: 10/04/1995 15:02:48
Data File : C:\DX\DATA\09279521.D03
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 3 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.13	TPHC	33.684	50640	342300	1	0.00
		Totals	33.684	50640	342300		

File: 09279521.D03 Sample: 1945.1 B2529



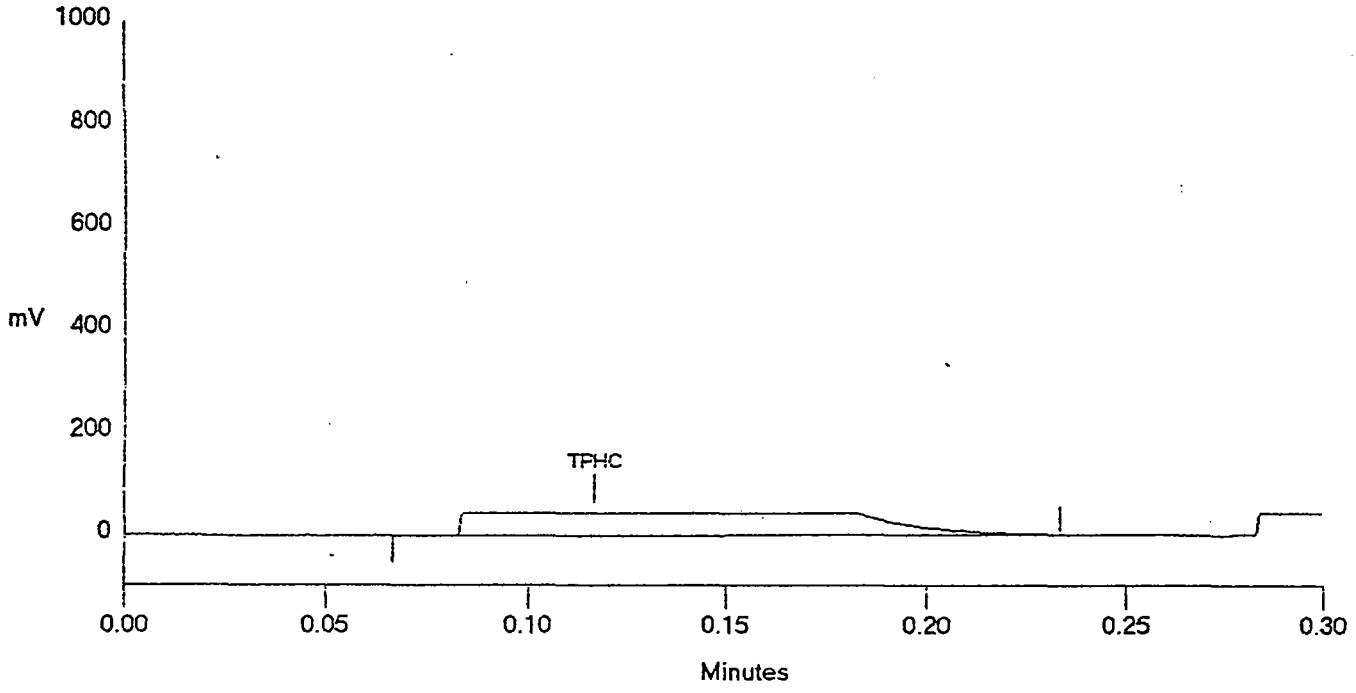
Sample Name: 1945.2 Date: 10/04/1995 15:04:03
Data File : C:\DX\DATA\09279521.D04
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 4 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.12	TPHC	27.885	41922	284087	1	0.00
		Totals	27.885	41922	284087		

File: 09279521.D04 Sample: 1945.2



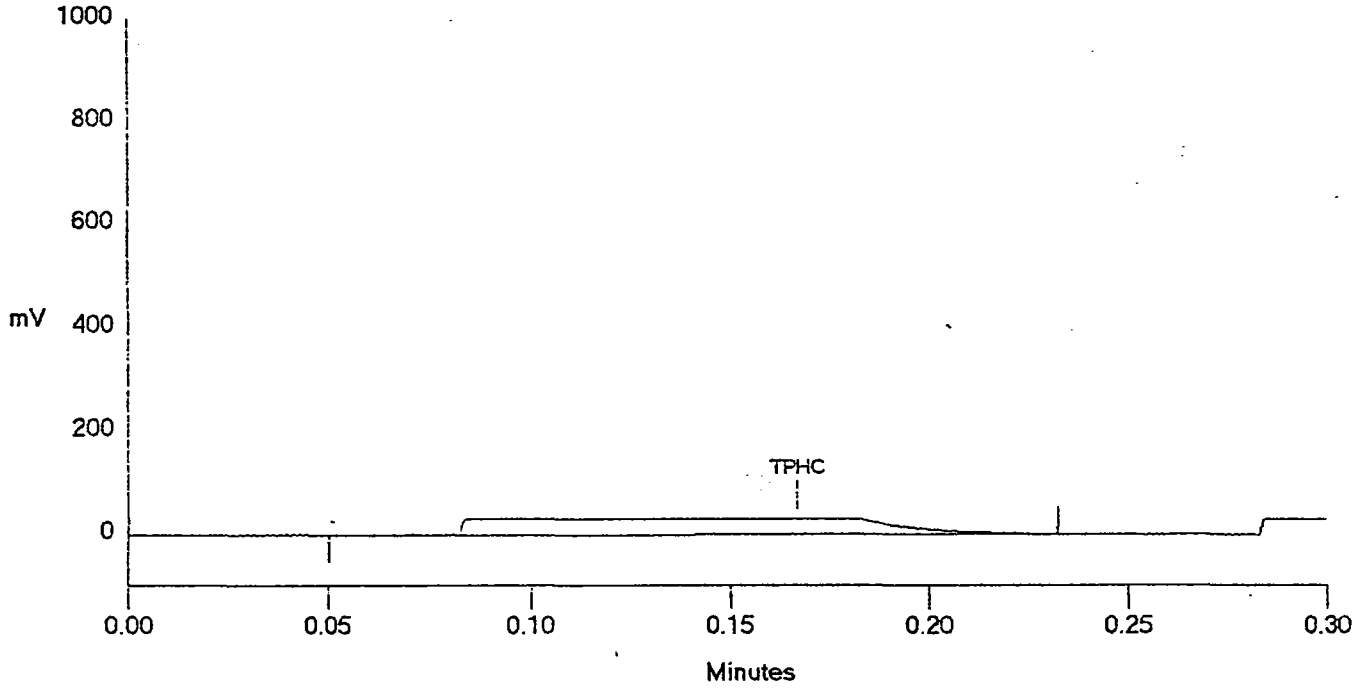
Sample Name: 1945.3 Date: 10/04/1995 15:08:36
Data File : C:\DX\DATA\09279531.D05
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 5 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.17	TPHC	19.192	28852	199456	1	0.00
		Totals	19.192	28852	199456		

File: 09279531.D05 Sample: 1945.3



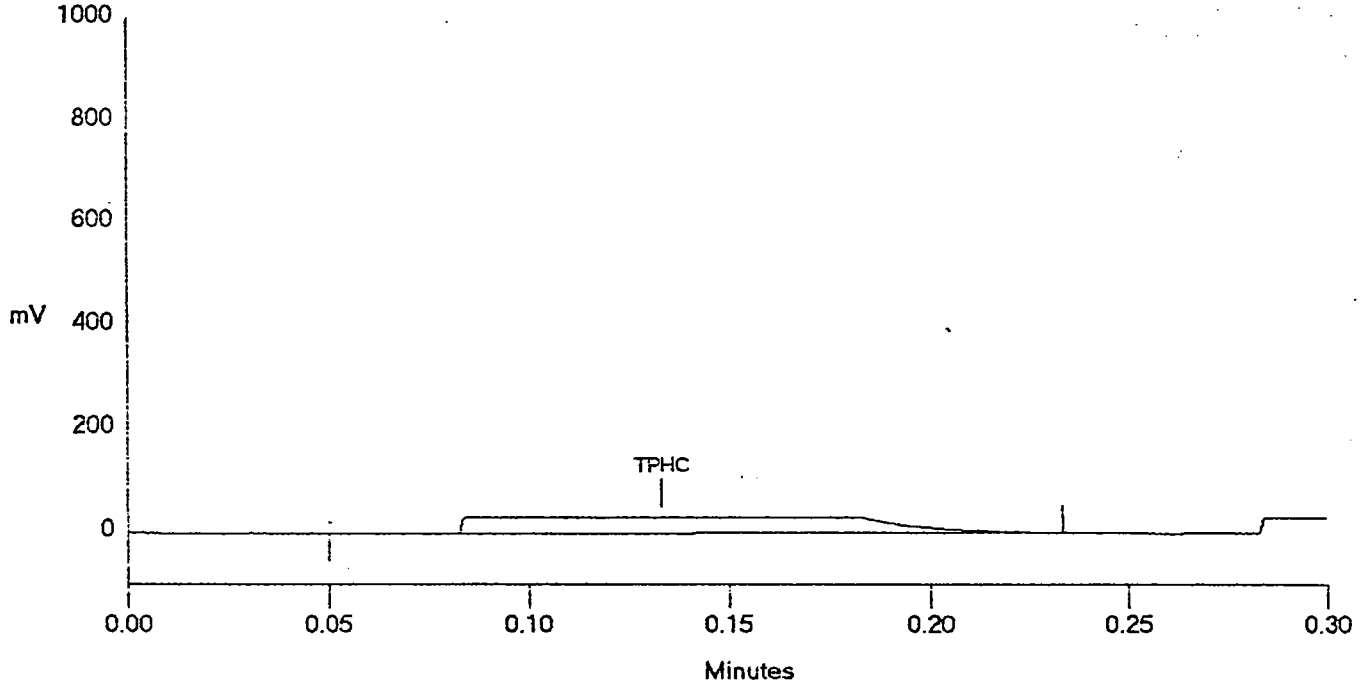
Sample Name: 1945.4 Date: 10/04/1995 15:10:04
Data File : C:\DX\DATA\09279521.D06
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 6 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.13	TPHC	19.501	29318	199442	1	0.00
		Totals	19.501	29318	199442		

File: 09279521.D06 Sample: 1945.4



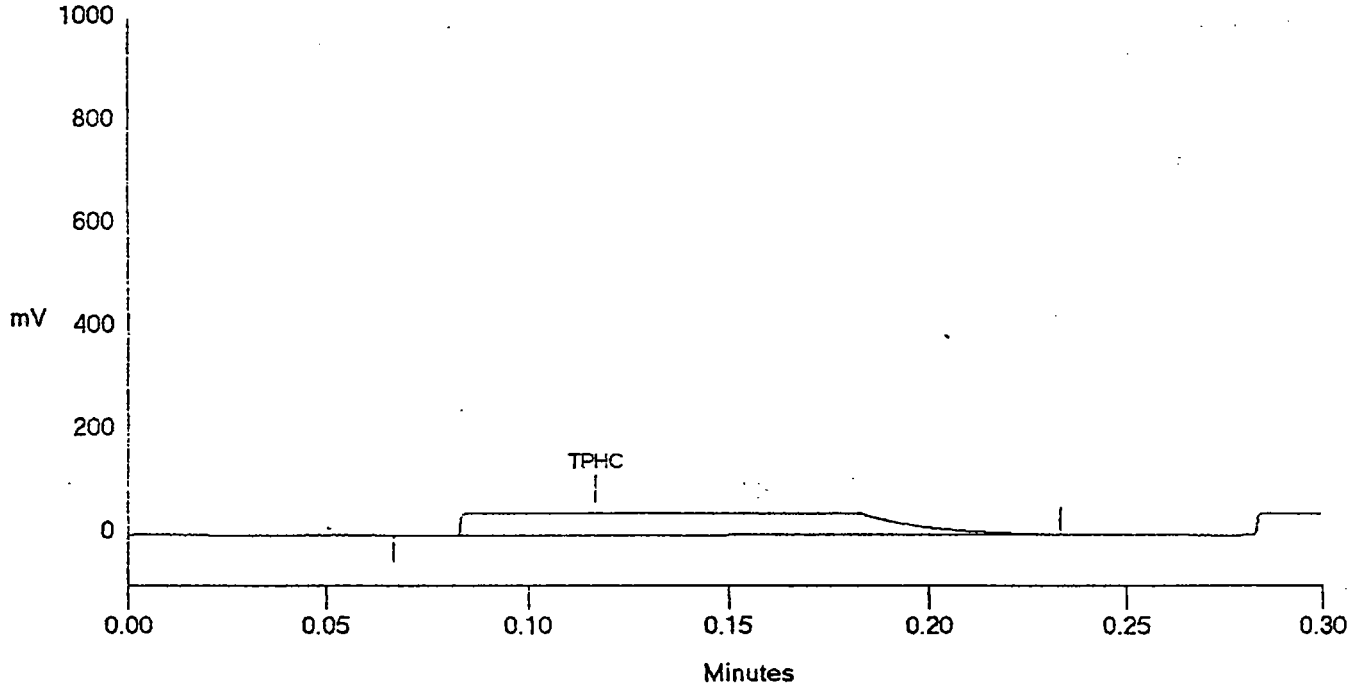
Sample Name: 1945.5 Date: 10/04/1995 15:11:17
Data File : C:\DX\DATA\09279521.D07
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 7 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.12	TPHC	28.042	42158	282828	1	0.00
		Totals	28.042	42158	282828		

File: 09279521.D07 Sample: 1945.5



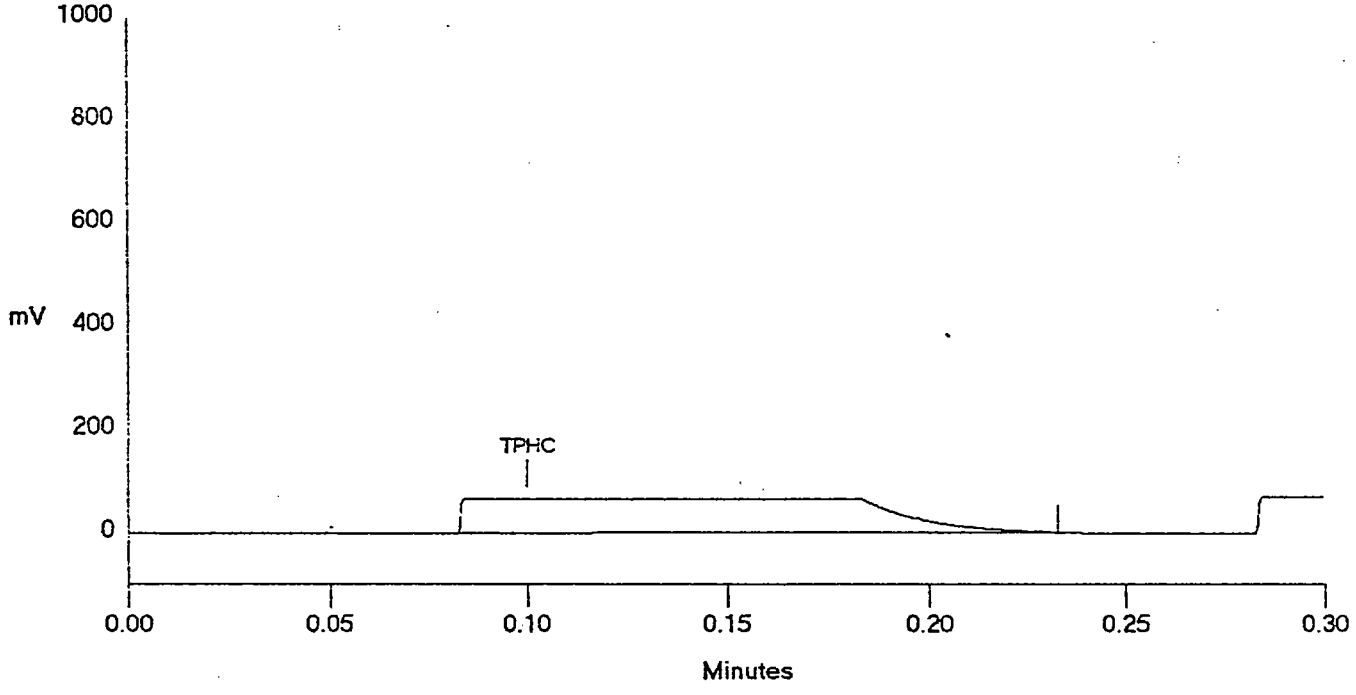
Sample Name: 1945.6 DUP. Date: 10/04/1995 15:13:49
Data File : C:\DX\DATA\09279521.D08
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 8 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.10	TPHC	44.113	66319	443063	1	0.00
		Totals	44.113	66319	443063		

File: 09279521.D08 Sample: 1945.6 DUP.



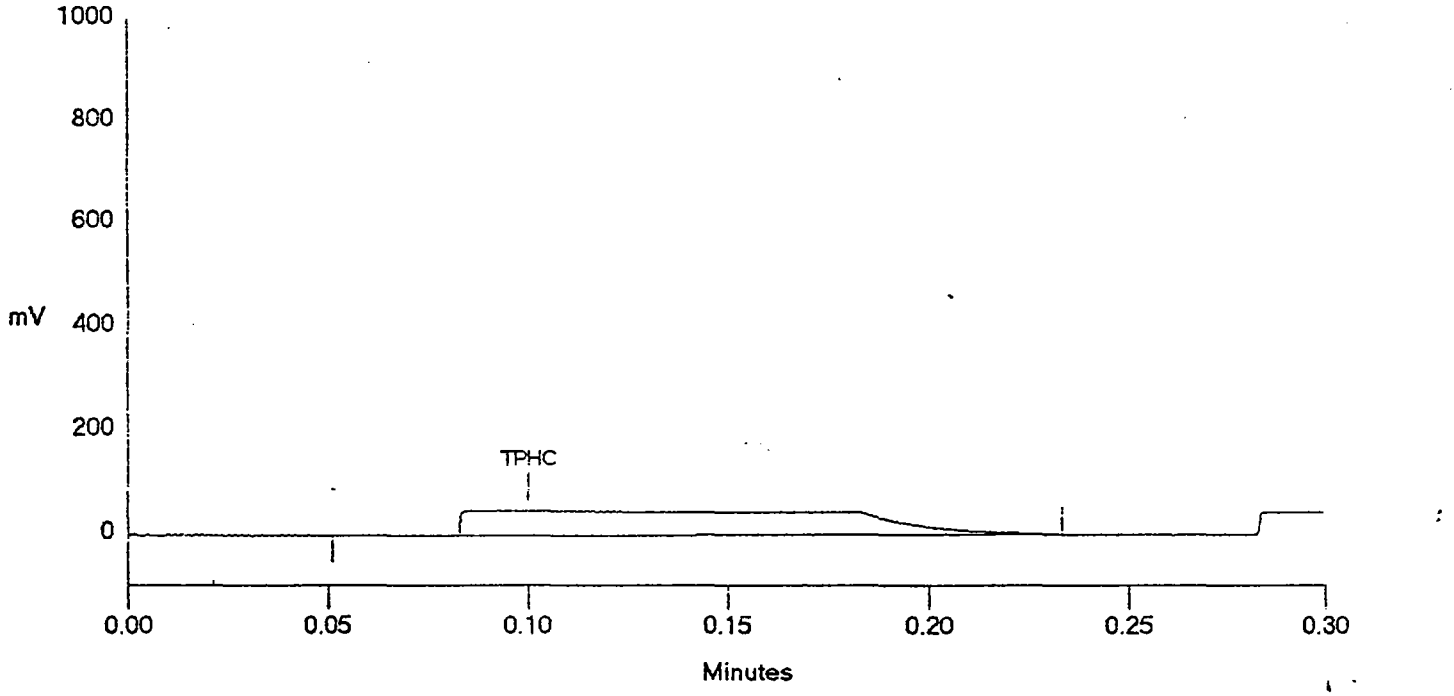
Sample Name: 1948.6 DUP. Date: 10/04/1995 15:48:42
Data File : C:\DX\DATA\09279531.D20
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 20 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.10	TPHC	30.674	46114	303967	1	0.00
		Totals	30.674	46114	303967		

File: 09279531.D20 Sample: 1948.6 DUP.



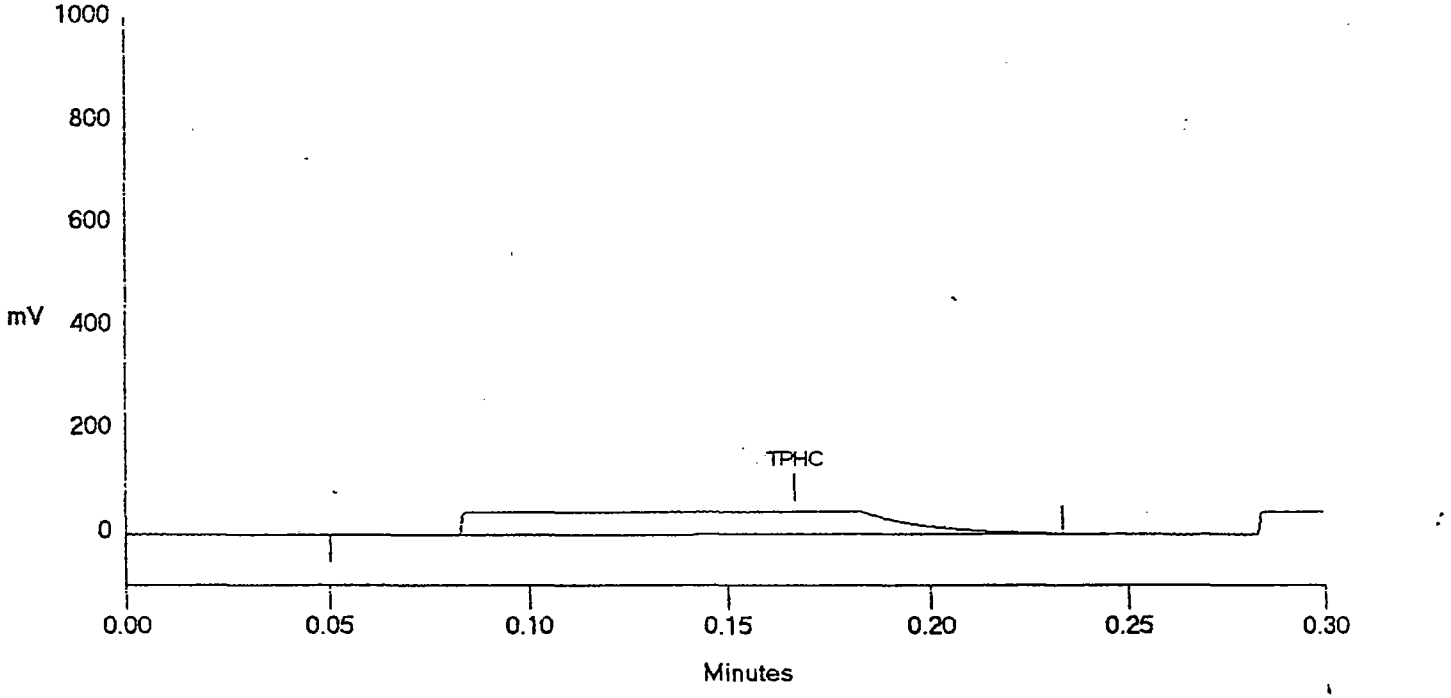
Sample Name: ~~CALCK. 1948.5~~ 1948.6 Dupate: 10/04/1995 15:50:01
Data File : C:\DX\DATA\09279521.D21
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 21 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.17	TPHC	28.214	42417	290808	1	0.00
		Totals	28.214	42417	290808		

File: 09279521.D21 Sample: CALCK.



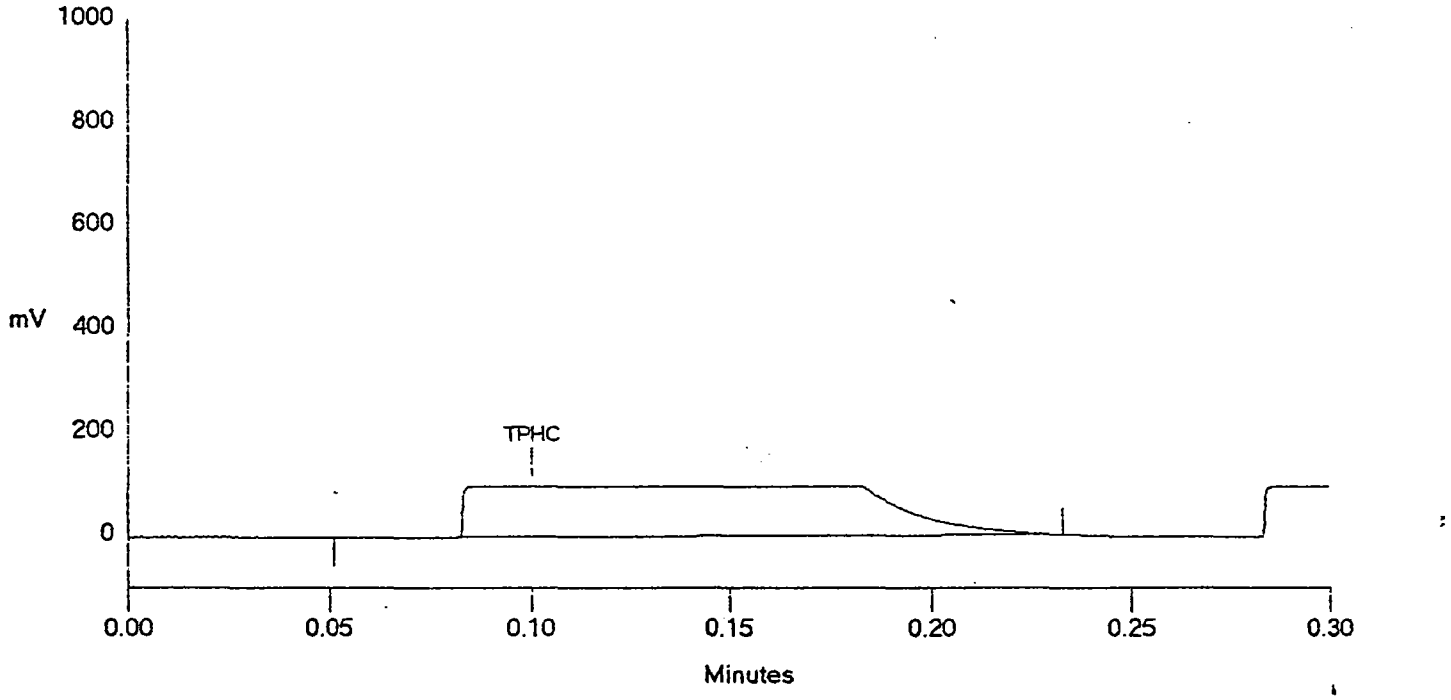
Sample Name: ~~1947.4~~ 1948.6 Spk Date: 10/04/1995 15:51:34
Data File : C:\DX\DATA\09279511.D22
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 22 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.10	TPHC	64.597	97115	654858	1	0.00
		Totals	64.597	97115	654858		

File: 09279511.D22 Sample:



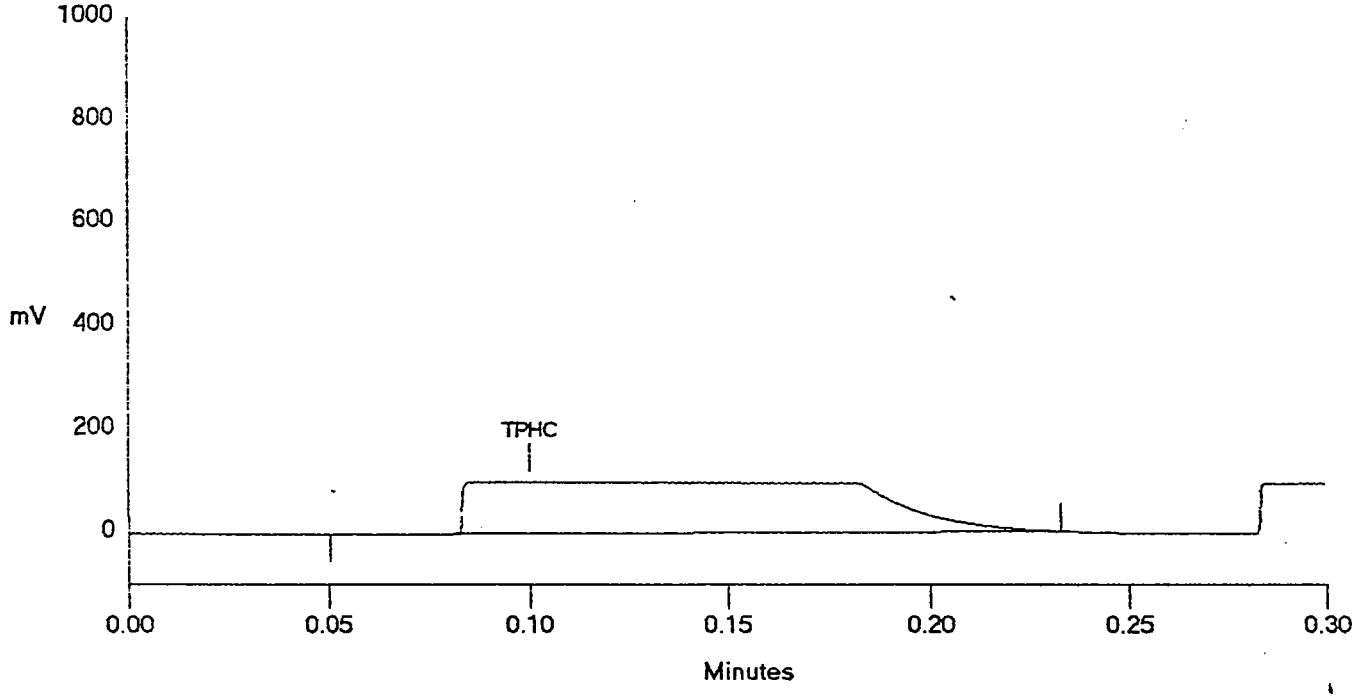
Sample Name: [redacted] 1948.6 Dup Spk Date: 10/04/1995 15:52:57
Data File : C:\DX\DATA\09279511.D23
Method : c:\dx\method\tph.met
ACI Address: 1 System: 1 Inject#: 23 Detector:OTHER
Analyst : BKM Column: IR

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	900	50Hz	0.00	0.30	30000

********** Component Report: Components Found **********

Pk. Num	Ret Time	Component Name	Concentration ppM	Height	Area	Bl. Code	%Delta
1	0.10	TPHC	65.334	98223	661161	1	0.00
		Totals	65.334	98223	661161		

File: 09279511.D23 Sample:



PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.		N/A
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)		✓

Comments: None

Laboratory Authentication Statement

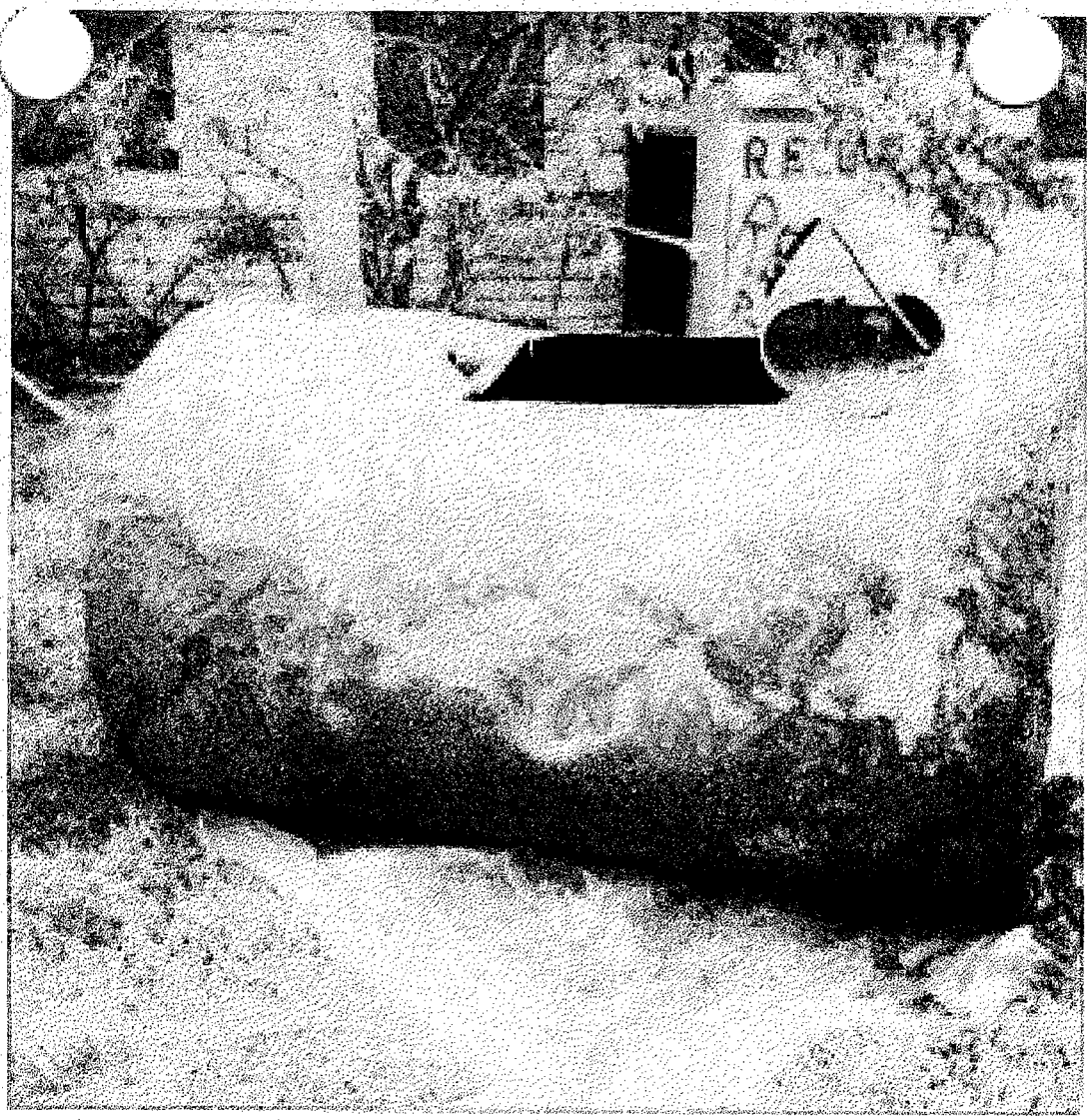
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Project #1947

Brian K. McKee
Laboratory Manager

APPENDIX F

PHOTOGRAPHS



BLDG 2532 Ø 81515 - 22
9/19/95 1500

December 1997

PHOTOGRAPHIC LOG

UST No. 81515-22

Building 2532

Charles Wood Area

Fort Monmouth

SMC Environmental Services Group
Engineers, Managers, Scientists, & Planners
Valley Forge, Pennsylvania