FINAL UNDERGROUND STORAGE TANK REMOVAL AND SITE ASSESSMENT REPORT

EVANS AREA, FORT MONMOUTH WALL TOWNSHIP, NEW JERSEY (VOLUME 2 OF 3)

Submitted to:



Directorate of Public Works, Fort Monmouth and the U.S. Army Materiel Command Environmental Compliance Services Contract No. DAAA08-94-D0007 Delivery Order No. 00069

Submitted by:



Tetra Tech EM Inc.

December 2000

United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9028 Camp Evans Area

NJDEP UST Registration No. 90029-11

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EXECUTIVE SUMMARY

UST Closure

On December 2, 1997, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-11 (Fort Monmouth Identification No. 9028(A)), was located south of Building 9028 in the Camp Evans area of Fort Monmouth. The UST was a 2,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the eastern end of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and no evidence of potentially contaminated soil was observed. Samples collected at the time the UST was removed contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). No soil was removed from the excavation.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9028 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-11 at Building 9028.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-11, was closed at Building 9028 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on December 2, 1997. The UST was a fiberglass 2,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-11 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no historical discharges are associated with UST No. 90029-11.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9028 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-11 was located south of Building 9028 and associated piping ran approximately 10 feet north from the UST to Building 9028. The UST fill port area was located directly above the eastern end of the tank. A site map is provided in Figure 1 showing the location of the UST-9028(A) removal relative to Building 9028.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and purging of the associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was cleaned and removed from the excavation, it was transported to the tank staging area (located adjacent to the west side of Building 9061), staged on polyethylene sheeting ,and examined for holes. No holes were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of potential contamination was observed. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and tank residue removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, no soil exhibited evidence of contamination. Therefore, all of the clean native soil and the necessary amount of imported clean fill were used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnelli Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

2.2 SOIL SAMPLING

On December 3, 1997, after the UST removal, post-excavation soil samples 9028(A)E1, 9028(A)E2 (Duplicate of 9028(A)E1), 9028(A)N, 9028(A)S, 9028(A)W, 9028(A)DS, and 9028(A)RF were collected from six locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 10 to 10.5-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9028(A)DS was collected beneath the 9028(A)W sample location from 11.5 to 12-feet bgs. Sample 9028(A)RF was collected from next to Building 9028 along the former return/feed line piping length of the excavation, which was approximately 10 feet long. Sample 9028(A)RF was collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from six locations on December 3,1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for the total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort

Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on December 3, 1997 from the UST excavation contained non-detectable concentrations of TPHC.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the 9028(A) UST excavation at Building 9028 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-11 at Building 9028.

Legend of Sampie identifications Camp Evans Area Wall Township, New Jersey

B Sample from the bottom of the excavation W Samples from the west sidewall of the excavation E Samples from the east sidewall of the excavation N Samples from the north sidewall of the excavation S Samples from the south sidewall of the excavation RF Sample from beneath the former location of the return/feed lines of the UST VL Sample from beneath the former location of the vent line to the UST OBS Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to the contaminated soil stockpile N21 Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed above). FPS Soil located directly adjacent to the fill port of the tank ("Fill Port Soil"). BFP Soil located beneath the fill port of the tank ("Fill Port") 9116CSP Contaminated soil pile from the UST-9116 excavation
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9116CSP Contaminated soil pile from the UST-9116 excavation
DS Deep Sample
9196BE1A Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6 Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT) Samples was collected from return feed lines consisting of copper tubing.
RFL(2) Samples collected from a second remote fill line for a particular UST excavation
RB1 Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
the sample was collected
CNFRM Contirmatory sample to contirm that contamination has been removed
CINFIN Another designation for a continuatory sample
R/F/VL Return/reed/vent lines. Used at buildings where the return/reed lines and the vent lines were located close together and one
Semple could be collected for boarnines
(N)E1 Sample collected at a location of suspected containination (interview) and the exception (remedial exception)
TD Tool pit/tronch
HWAR Hozardous waste graa building (former location)
AST Above ground storage tank
9105ASTB1 Sample collected at the former location of an AST at the specified building
DEL Delineation sample to document the extent of contamination
SD Sample collected from a storm drain
SW Sample collected from a sidewall of a remedial excavation
CTR Copper tubing run
CSP-1 Clean soil pile

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Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9028(A)OBS1 9028(A)OBS2 9028(A)E1 9028(A)E2 9028(A)N 9028(A)S 9028(A)W 9028(A)DS 9028(A)DS 9028(A)OBS3 9028(A)DE	12/3/97 12/3/97 12/3/97 12/3/97 12/3/97 12/3/97 12/3/97 12/3/97 12/3/97	12/4/97 12/4/97 12/4/97 12/4/97 12/4/97 12/4/97 12/4/97 12/4/97 12/4/97 12/4/97	Soil Soil Soil Soil Soil Soil Soil Soil	Post-Excavation Post-Excavation Post-Excavation Post-Excavation Post-Excavation Post-Excavation Post-Excavation Post-Excavation Post-Excavation	TPHC TPHC TPHC TPHC TPHC TPHC TPHC TPHC	OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025 OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities [UST 9028(A)]
Building 9028, Camp Evans Area
Wall Township, New Jersey

Note:

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
0000(4)0004	0404.04	40/2/07		трис	176	ND	10.000	No
9028(A)OBS1	3194.01	12/3/97	12/4 - 0/97		170		10,000	No
9028(A)OBS2	3194.02	12/3/97	12/4 - 5/97	IPHC	100		10,000	NU Nu
9028(A)E1	3194.03	12/3/97	12/4 - 5/97	TPHC	167	ND	10,000	NO
9028(A)E2	3194.04	12/3/97	12/4 - 5/97	TPHC	168	ND	10,000	No
9028(A)N	3194.05	12/3/97	12/4 - 5/97	TPHC	174	ND	10,000	No
0020(/ ()N	3194.06	12/3/97	12/4 - 5/97	TPHC	169	ND	10,000	No
0029(A)\A	3104.00	12/3/97	12/4 - 5/97	TPHC	162	ND	10,000	No
9020(A)W	2404.09	12/0/07	12/4 5/07	TPHC	157	ND	10.000	No
9028(A)DS	3194.00	12/3/97			474	ND	10,000	No
9028(A)OBS3	3194.09	12/3/97	12/4 - 5/97	TPHC			10,000	No
9028(A)RF	3194.10	12/3/97	12/4 - 5/97	TPHC	174	ND	10,000	INO

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Table 2
Post-Excavation Soil Sampling Results [UST 9028(A)
Building 9028, Camp Evans Area
Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons



9028.DWG ASC 01/19/99



APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-11

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

	A. Facility Name: US Army, Fort Monmouth, Evans Area						
· · · · · · · · · · · · · · · · · · ·	Facility Street Address: Building 1207, DCSOPS-BID						
	Municipality: Wall Township County : Monmouth						
	Block: 240, 241 and 242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02						
	Telephone Number : (732) 239-2427						
	B. Owner (RP)'s Name: US Army, CECOM						
	Street Address: DCSOPS-E	BID, Bidg. 1207 City : Fort Monmouth					
	State: NJ Zip: 07703 Telephone Number : (732) 532-5052						
C. (Check as appropriate) D. (Complete all that apply)							
	• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>					
100 C C C C C C C C C C C C C C C C C C	Report (SIR) \$500 Fee	Incident Report Number (10 or 12 digits):					
20 - 21 - 20 - 20 - 20 - 20 - 20 - 20 -	 Remedial Investigation 	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>					
	Report (RIR) \$1000 Fee						
	E. Certification by the Sul	bsurface Evaluator:					
	The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes					
	Name: Kevin J. Phel	an Signature: <u>Revin L. Phelan</u> UST Cert. No.: 0018436					
	Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457					
	Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway					
	State: NJ Zip: 07	866 Telephone Number : (973) 9830507, Ext. 230					

State: NJ	Zip: 07866	Telephone Number : (973) 9830507,	Ext. 230
				, ,	

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the

document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or

- 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 a principal executive officer or ranking elected Official.

"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true, I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): Mr. Charles Appleby

Title: BRAC Environmental Coordinator, Evans Area

NJDEP Subsurface Evaluator # 2056

Signature:

Company Name: US Army, CECOM, DCSOPS BID, Fort Monmouth NJ, 07703

Date: November 30, 2000

APPENDIX B

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PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-11



PHOTO 1: View of the cleaned interior of UST-9028(A) (looking north).



PHOTO 2: View of the UST-9028(A) being removed from the ground (looking west/northwest).



PHOTO 3: View of the sampling locations in the UST-9028(A) excavation (looking east).

APPENDIX C

SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-11

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

Client :	U.S. Army	Lab. ID # :	3194	
	DPW. SELFM-PW-EV	Date Rec'd:	03-Dec-97	
	Bldg. 173	Analysis Start:	04-Dec-97	
	Ft. Monmouth, NJ 07703	Analysis Complete:	05-Dec-97	
Analysis:	OQA-QAM-025	UST Reg. #:		
Matrix:	Soil	Closure #:		
Analyst:	D.DEINHARDT	DICAR #:		
Ext. Meth:	Shake	Location #: BLDGS.		
		9028, 9019		

9091

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3194.01	9028(A)-OBS1	1.00	15.39	86.90	176	ND
3194.02	9028(A)-OBS2	1.00	15.35	92.06	166	ND
3194.03	9028(A)-E1	1.00	15.39	91.66	167	ND
3194.04	9028(A)-E2	1.00	15.28	91.55	168	ND
3194.05	9028(A)-N	1.00	15.76	85.51	174	ND
3194.06	9028(A)-S	1.00	15.57	89.27	169	ND
3194.07	9028(A)-W	1.00	15.31	94.91	162	ND
3194.08	9028(A)-DS	1.00	15.55	96.48	157	ND
3194.09	9028(A)-OBS3	1.00	15.85	86.58	171	ND
3194.10	9028(A)-RF	1.00	15.45	87.27	174	ND
3194.11	9019-RF1	1.00	15.84	89.34	166	389.36
3194.12	9019-RF2	1.00	15.37	87.92	174	327.07
3194.13 9091	9919(A)-A1	1.00	15.07	87.13	179	902.43
3194.14 9091	8019 (A)-A2	1.00	15.75	87.14	171	ND
8194.15 9091	9919 (B)-B1	1.00	15.71	97.14	154	ND
3194.16 9091	9919 (B)-B2	1.00	15.47	79.04	192	ND
3194.17 9091	-0019 (C)-C1	1.00	15.47	94.86	160	ND
3194.18 9091	9091 (D)-D1	1.00	15.13	96.25	161	ND
METHOD BLANK	4-Dec-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

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Daniel K. Wright Laboratory Director

APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-11

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SMC Environmental Services Group A Subscience Monogement Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 12/2/97, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

te Manager

Print or Type Name Here

APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-11

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GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Hazardous Waste Manifest No. and best of my knowledge that the waste described on Hazardous Waste Manifest No.

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: _____ PPM halogens.

I am duly authorized to sign said certification.

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United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9028 Camp Evans Area

NJDEP UST Registration No. 90029-42

TABLE OF CONTENTS

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1.0	UND	DERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES.	2
	1.1	Site Description	2
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Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results

FIGURES

Figure 1	Building 9028(B) - UST Removal Location Map
Figure 2	Building 9028(B) - UST Removal and Soil Sample Locations

APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix D Visiographic of Cost Closure Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

EXECUTIVE SUMMARY

UST Closure

On October 22, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-42 (Fort Monmouth Identification No. 9028(B)), was located north of Building 9028 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). Two holes were noted in the bottom of the UST; however, the only evidence of potentially contaminated soil was observed directly adjacent to the tank and the UST fill port. Samples collected at the time the UST was removed (and after one truckload of additional soil had been excavated) contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). The total amount of soil removed from the excavation was approximately 5 cubic yards.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-42 at Building 9028.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-42, was closed at Building 9028 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on October 22, 1997. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-42 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-42.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9028 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-42 was located north of Building 9028 and associated piping ran approximately 4 feet south from the UST to Building 9028. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST-9028(B) removal relative to Building 9028.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. Two holes were observed by the Tetra Tech site manager and the SMC subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Evidence of contamination was observed in the soil beneath the tank as well as soil located adjacent to the fill port of the UST. Visual and PID/FID soil screening was also performed along piping associated with the UST. Indications of potential contamination were noted along the piping length as well as in the overburden soil

The tank residue and sludges removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST fill port and the underside of the tank was moderately contaminated. In addition, the overburden soil above the tank also revealed evidence of contamination. As a result, all excavated soil was removed to the staging area for disposal off site at a later date and imported clean fill was used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: David H. Daniels Employer: SMC Environmental Services Group Telephone No.: (215) 788-7844
 NJDEP Certification No.: 0010279
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST, the fill port, and the overburden soil did exhibit evidence of contamination and was transported to the soil staging area.

2.2 SOIL SAMPLING

On October 22, 1997, after the UST removal and excavation of one truckload of potentially contaminated soil, post-excavation soil samples 9028(B)B1, 9028(B)B2 (Duplicate of 9028(B)B1), 9028(B)B3, 9028(B)W, 9028(B)E, 9028(B)S, and 9028(B)N were collected from six locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of and beneath the former UST location at a depth of 6.0 to 6.5 feet below ground surface (bgs). Bottom samples were collected from directly beneath the former UST location, or 6.5 to 7.0 feet bgs. No soil sample was collected beneath the former location of the return/feed line piping length because of the fact that all of the soil located between the tank and the building had been removed and transported to the soil staging area. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.
3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from six locations on October 22, 1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

The post-excavation soil samples collected on October 22, 1997 from the UST excavation contained nondetectable concentrations of TPHC.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the 9028(B) UST excavation at Building 9028 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion of 10,000 mg/kg for total organic contaminants, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-42 at Building 9028.

dentifications د الدور الكو Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
W	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the US I
VL	Sample from beneath the former location of the vent line to the US1
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backhill or must be transported to the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last number denotes the boring number and last letter indicates which sample in the sequence.
REL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where the sample was collected
CNERM	Confirmatory sample to confirm that contamination has been removed
CNEM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
ŤP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

•

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9028RF1	10/21/97	10/24/97	Soil	Post-Excavation	TPHC	oqa-qam-025
9028RF2	10/21/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028RF3	10/21/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028RF4	10/21/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028RF5	10/21/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)B1	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)B2	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)B3	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)W	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)E	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)S	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)N	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(B)DS	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities [UST 9028(B)]
Building 9028, Camp Evans Area
Wall Township, New Jersey

.

Note:

* TPHC Total petroleum hydrocarbons

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9028RF1	3092.01	10/21/97	10/24 - 27/97	TPHC	166	ND	10,000	No
9028RF2	3092.02	10/21/97	10/24 - 27/97	TPHC	168	ND	10,000	No
9028RF3	3092.03	10/21/97	10/24 - 27/97	TPHC	172	ND	10,000	No
9028RF4	3092.04	10/21/97	10/24 - 27/97	TPHC	176	ND	10,000	No
9028RF5	3092.05	10/21/97	10/24 - 27/97	TPHC	170	ND	10,000	No
9028(B)B1	3093.01	10/22/97	10/24 - 28/97	TPHC	168	ND	10,000	No
9028(B)B2	3093.02	10/22/97	10/24 - 28/97	TPHC	169	ND	10,000	No
9028(B)B3	3093.03	10/22/97	10/24 - 28/97	TPHC	153	ND	10,000	No
9028(B)W	3093.04	10/22/97	10/24 - 28/97	TPHC	165	ND	10,000	No
9028(B)F	3093.05	10/22/97	10/24 - 28/97	TPHC	170	ND	10,000	No
9028(B)S	3093.06	10/22/97	10/24 - 28/97	TPHC	175	ND	10,000	No
9028(B)N	3093.07	10/22/97	10/24 - 28/97	TPHC	166	ND	10,000	No
9028(B)DS	3093.08	10/22/97	10/24 - 28/97	TPHC	164	ND	10,000	No

Table 2 Post-Excavation Soil Sampling Results [UST 9028(B)] Building 9028, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-42

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area							
Facility Street Address: Building 1207, DCSOPS-BID							
Municipality: <u>Wall Township</u>	2 County : <u>Monmouth</u>						
Block: 240, 241 and 242 L	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02						
Telephone Number : (732) 23	<u>9-2427</u>						
B. Owner (RP)'s Name: <u>U</u>	S Army, CECOM						
Street Address: DCSOPS-E	BID, Bldg. 1207 City : Fort Monmouth						
State: <u>NJ</u> Zip: <u>07703</u>	Telephone Number : (732) 532-5052						
C. (Check as appropriate)	D. (Complete all that apply)						
• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>						
Report (SIR) \$500 Fee	 UST Registration Number : (7 rights): 90029 - 4 a. Incident Report Number (10 or 12 digits): 						
Remedial Investigation Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>							
Report (RIR) \$1000 Fee							
E. Certification by the Subsurface Evaluator:							
The attached report	The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26F Yes						
Name: Kevin J. Phel	an Signature: Kerrin J. Phalon UST Cert. No.: 0018436						
Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457						
Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway						
State: NJ Zip: 07	866 Telephone Number : (973) 9830507, Ext. 230						

(NOTE: et seq.)	Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10
F. Ce	ertification by the Responsible Party(ies) of the Facility:
The foll	owing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follo
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2.	submitted along with the certification; or 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 a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is the accurate, and complete. I am aware that there are significant civil penalties for knowingly submit false, inaccurate, or incomplete information and that I am committing a crime of the fourth degre make a written false statement which I do not believe to be true. I am also aware that if I knowin direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	N
	Signature:
	Company Name: US Army, CECOM, DCSQPS-BID, Fort Monmouth NJ, 07703

APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-42



PHOTO 1: View of the cleaned interior of UST-9028(B) (looking east).



PHOTO 2: View of the UST-9028(B) excavation prior to sampling (looking west).



PHOTO 3: View of the UST-9028(B) staged on the west side of UST-9061 awaiting disposal and labeled with all required information.

APPENDIX C

SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-42

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

Client :	U.S. Army			Lab. ID # :		3092
	DPW. SELFM-I	PW-EV		Date Rec'd:	22-Oct-97	
	Bldg. 173			Analysis Sta	24-Oct-97	
	Ft. Monmouth,	NJ 07703		Analysis Con	aplete:	27-Oct-97
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD	ľ		DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9028
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3092.01	9028-RF1	1.00	15.60	90.98	166	ND
3092.02	9028-RF2	1.00	15.37	90.85	168	ND
3092.03	9028-RF3	1.00	15.71	87.00	172	ND
3092.04	9028-RF4	1.00	15.16	87.86	176	ND
3092.05	9028-RF5	1.00	15.58	88.50	170	ND
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		<u> </u>	ļ	<u> </u>		
METHOD BLANK	26-Oct-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client :	U.S. Army			Lab. ID # :		3093
	DPW. SELFM-H	PW-EV		Date Rec'd:		22-Oct-97
	Bldg. 173			Analysis Sta	rt:	24-Oct-97
	Ft. Monmouth,	NJ 07703		Analysis Con	aplete:	28-Oct-97
	001011005					
Analysis:	OQA-QAM-025			USI Keg. #:		
Matrix:	Soil	_		Closure #:		
Analyst:	D.DEINHARDI			DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9028
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3093.01	9028(B)-B1	1.00	15.71	89.15	168	ND
3093.02	9028(B)-B2	1.00	15.15	91.91	169	ND
3093.03	9028(B)-B3	1.00	15.75	97.34	153	ND
3093.04	9028(B)-W	1.00	15.16	94.04	165	ND
3093.05	9028(B)-E	1.00	15.92	86.59	170	ND
3093.06	9028(B)-S	1.00	15.53	86.39	175	ND
3093.07	9028(B)-N	1.00	15.06	94.25	166	ND
3093.08	9028(B)-DS	1.00	15.26	94.03	164	ND
3093.09	9028(A)-RFL	1.00	15.86	91.42	162	ND
3093.10	9028(A)-B1	1.00	15.39	86.16	177	192.75
3093.11	9028(A)-B2	1.00	15.50	85.58	177	185.43
3093.12	9028(A)-B3	1.00	15.26	88.18	175	ND
3093.13	9028(A)-N	1.00	15.78	87.31	171	1007.13
3093.14	9028(A)-S	1.00	15.79	90.17	165	ND
3093.15	9028(A)-W	1.00	15.05	86.46	181	ND
3093.16	9028(A)-E	1.00	15.21	90.01	172	ND
METHOD BLANK	26-Oct-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-42

· · · · · ·	A Bur 2844 - Harlout, CT 90104-2944 Call Tol Fing: 1-404-127-0030	· · ·		REORDI	ER ITEM # BLN74	
f .		STRAIGHT BILL OF LADING ORIGINAL - NOT NEGOTIABLE		Shipper Ho	16	
· :	SMC	ENVIRONMENTAL SERVICES GRO	<u>v</u> P	Carrier No		
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	In Tukton Halls, N) za	<u>cedeD7753 cripin Wall 7</u>		<u> </u>	9	
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		s oraly	<u> </u>			
	- 1,00	o Gallon U.S.T. Shell				
č.S.						
	Building t	≠ 9028 B				
	REMAT C.Q.D. TO; ADDREES	COD Ami: \$		C.O.D. FFE: FREPAID S COLLECT S	· · · · ·	
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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

CERTIFICATE OF NON-HAZARDOUS VESSEL

FACILITY:	Camp Evans (U.S. Army)
1110121111	Wall N.T
	Building # 9028B
VESSEL:	1,000 - Gallon Steel tank
	(Formally # 2 Fuel oil)

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 0 ct 22, 1997, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

Isite Manager

Print or Type Name Here

APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-42



Old Bridge, N.J. 08857 (908) 721-0900 Fax (908) 721-0231



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United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9028 Camp Evans Area

NJDEP UST Registration No. 90029-43

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APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

EXECUTIVE SUMMARY

UST Closure

On October 22, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-43 (Fort Monmouth Identification No. 9028(C)), was located north of Building 9028 in the Camp Evans area of Fort Monmouth. The UST was a 550-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the fill port of the tank. Samples collected at the time the UST was removed contained total petroleum hydrocarbons (TPHC) concentrations ranging from non-detect to 1,007.13 milligrams per kilogram (mg/kg). After additional soil was excavated and removed, soil remaining in the excavation contained concentrations of TPHC ranging from non-detect to 192.75 mg/kg. The total amount of soil removed from the excavation was 10 cubic yards.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-43 at Building 9028.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-43, was closed at Building 9028 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on October 22, 1997. The UST was a steel 550-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-43 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one historical discharge or overfill was associated with UST No. 90029-43.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9028 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-43 was located north of Building 9028 and associated piping ran approximately 35 feet south from the UST to Building 9028. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST-9028(C) removal relative to Building 9028.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC discovered that the tank was full of oil and water and called Lorco Petroleum Company to have a vacuum truck sent to the site to empty the tank. Afterwards, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. No holes were observed by the Tetra Tech site manager and the SMC subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed except for soil located adjacent to the fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and tank residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tanks contents

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST fill port and the north side of the tank was moderately contaminated. This soil was removed to the staging area for disposal off site at a later date and imported clean fill was used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: David H. Daniels Employer: SMC Environmental Services Group Telephone No.: (215) 788-7844
 NJDEP Certification No.: 0010279
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and associated piping, as well as most of the UST excavation and sidewalls, did not exhibit evidence of contamination; however, the overburden soil excavated from above the tank did exhibit indications of potential contamination and was transported to the soil staging area.

2.2 SOIL SAMPLING

On October 22, 1997, following removal of the UST, post-excavation soil samples 9028(C)RFL, 9028(C)B1, 9028(C)B2 (Duplicate of 9028(C)B1), 9028(C)B3, 9028(C)N, 9028(C)S, 9028(C)W, and 9028(C)E were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location at a depth of 6.0 to 6.5 feet below ground surface (bgs), and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 6.5 to 7.0 feet bgs. Sample 9028(C)RFL was collected adjacent to the fence bordering Monmouth Boulevard along the former remote fill line piping length of the excavation, which was approximately 6 feet long. Sample 9028(C)RFL was collected from 1.5 to 2-feet bgs. All samples were analyzed for TPHC and total solids.

Analytical results of the original post-excavation samples revealed 1,007.13 milligrams per kilograms (mg/kg) TPHC at the 9028(C)N sample location. This concentration exceeds 1,000 mg/kg TPHC, which is NJDEP's criterion for additional soil removal/remediation or for required VOC sampling. As a result, on November 7, 1997, Tetra Tech and SMC excavated additional soil from the north side of the excavation and collected post-excavation soil samples 9028(C)N2 and 9028(C)N3 (duplicate of 9028(C)N2) from one sampling location. The sidewall samples were collected from 7.5 to 8.0 feet bgs. Both samples were analyzed for TPHC and total solids. Figure 2 presents the post-excavation sampling locations.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992.. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from eight locations on October 22, 1997 and November 7, 1997. All samples were analyzed for TPHC for total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion for total organic contaminants of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

One of the post-excavation soil samples collected from the UST excavation contained a concentration of TPHC of 1,007.13mg/kg which exceed the Fort Monmouth soil cleanup criteria of 1,000 mg/kg. The remainder of the samples contained TPHC concentrations from non-detect to 192.75 mg/kg.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the 9028(C) UST excavation at Building 9028 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, no longer exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-43 at Building 9028.

Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

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Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9028(C)RFL	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)B1	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)B2	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)B3	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)N	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)N2**	11/7/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)N3**	11/7/97	11/10/97	and Soll	Post-Excavation	TPHC	OQA-QAM-025
9028(C)S	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)W	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9028(C)E	10/22/97	10/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1 Summary of Post-Excavation Sampling Activities [UST 9028(C)] Building 9028, Camp Evans Area Wall Township, New Jersey

Note:

* TPHC Total petroleum hydrocarbons
 ** Samples collected to remediate contamination found in sample above.

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
	2002.00	10/22/07	10/24 - 28/97	трнс	162	ND	10.000	No
	3093.09	10/22/37	10/24 - 20/37	TPHC	177	192.75	10,000	No
9028(C)B1	3093.10	10/22/97	10/24 - 20/37		177	185 43	10,000	No
9028(C)B2	3093.11	10/22/97	10/24 - 20/97		475	ND	10,000	No
9028(C)B3	3093.12	10/22/97	10/24 - 28/97	TPHC	175		10,000	No
9028(C)N	3093.13	10/22/97	10/24 - 28/97	TPHC	171	1,007.13	10,000	NO americante de la companya de la comp
9028(C)N2***	3153.01	11/7/97	11/10 = 11/97	TPHC	171	ND	10,000	No 🐢
0028/0103**	3153.02	11/7/97	11/10 - 11/97	TPHC	164	ND i	iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	No
0020(0)(10	3003 1/	10/22/97	10/24 - 28/97	TPHC	165	ND	10,000	No
9020(0)3	2002 45	10/22/07	10/24 28/07	TPHC	181	ND	10,000	No
9028(C)W	3093.15	10/22/97	10/24 - 20/97	TDUC	170	ND	10,000	No
9028(C)E	3093.10	10/22/97	10/24 - 28/97	IPHC	172	ND	10,000	

Table 2
Post-Excavation Soil Sampling Results [UST 9020(U)]
Building 9028, Camp Evans Area
Wall Township, New Jersey

Note:

Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria Not detected *

ND

TPHC

Total petroleum hydrocarbons Samples collected to remediate contamination found in sample above. **





APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-43

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area					
Facility Street Address: Buil	ding 1207, DCSOPS-BID				
Municipality: <u>Wall Townshi</u> j	County : <u>Monmouth</u>				
Block: <u>240, 241 and 242</u> L	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02				
Telephone Number : (732) 23	9-2427				
B. Owner (RP)'s Name: US Arroy, CECOM					
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth					
State: <u>NJ</u> Zip: <u>07703</u>	State: NJ Zip: 07703 Telephone Number : (732) 532-5052				
C. (Check as appropriate)	D . (Complete all that apply)				
Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>				
Report (SIR) \$500 Fee	 UST Registration Number : (7 digits): 90029 - 4-3 Incident Report Number (10 or 12 digits): 				
 Remedial Investigation 	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>				
Report (RIR) \$1000 Fee					
E. Certification by the Subsurface Evaluator:					
The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes				
Name: Kevin J. Phelan Signature: <u>Karin J. Phalan</u> UST Cert. No.: 0018436					
Firm: Tetra Tech EM, Inc. Firm's UST Cert. Number: US00457					
Firm Address: 1 Bank Street, Suite 103 City: Rockaway					
State: NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230					

State: N	J Zip: 07866 Telephone Number : (973) 9830507, Ext. 230
(NOTE:	Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-3
et seq.)	
F. Ce	ertification by the Responsible Party(ies) of the Facility:
The foll	owing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
2. 3.	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submittin- false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree it make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-43



PHOTO 1: View of the sampling locations beneath the return/feed lines (copper tubing) between Building 9028 and UST-9028(C) (looking south/southwest).



PHOTO 2: View of the cleaning of UST-9028(C) (looking northeast).



PHOTO 3: View of the UST-9028(C) excavation after removal of the tank (looking north).



PHOTO 4: View of UST-9028(C) staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

APPENDIX C

SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-43

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

Client :	U.S. Army			Lab. ID # :		3092
	DPW. SELFM-	PW-EV		Date Rec'd:		22-Oct-97
	Bldg. 173			Analysis Sta	rt:	24-Oct-97
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	27-Oct-97
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	yst: D.DEINHARDT DICAR #:					
Ext. Meth: Shake Location #:					BLDG. 9028	
Sample	Field ID Dilution Weight % Solid MDL (mg/kg)			MDL (mg/kg)	TPHC Result (mg/kg)	
3092.01	9028-RF1	1.00	15.60	90.98	166	ND
3092.02	9028-RF2	1.00	15.37	90.85	168	ND
3092.03	9028-RF3	1.00	15.71	87.00	172	ND
3092.04	9028-RF4	1.00	15.16	87.86	176	ND
3092.05	9028-RF5	1.00	15.58	88.50	170	ND
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METHOD BLANK	26-Oct-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client :	U.S. Army			Lab. ID # :	3093	
	DPW. SELFM-F	W-EV		Date Rec'd:		22-Oct-97
	Bldg. 173			Analysis Star	24-Oct-97	
	Ft. Monmouth,	NJ 07703		Analysis Con	aplete:	28-Oct-97
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARDI					
Ext. Meth: Shake Location #:						BLDG. 9028
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3093.01	9028(B)-B1	1.00	15.71	89.15	168	ND
3093.02	9028(B)-B2	1.00	15.15	91.91	169	ND
3093.03	9028(B)-B3	1.00	15.75	97.34	153	ND
3093.04	9028(B)-W	1.00	15.16	94.04	165	ND
3093.05	9028(B)-E	1.00	15.92	86.59	170	ND
3093.06	9028(B)-S	1.00	15.53	86.39	175	ND
3093.07	9028(B)-N	1.00	15.06	94.25	166	ND
3093.08	9028(B)-DS	1.00	15.26	94.03	164	ND
3093.09	9028(A)-RFL	1.00	15.86	91.42	162	ND
3093.10	9028(A)-B1	1.00	15.39	86.16	177	192.75
3093.11	9028(A)-B2	1.00	15.50	85.58	177	185.43
3093.12	9028(A)-B3	1.00	15.26	88.18	175	ND
3093.13	9028(A)-N	1.00	15.78	87.31	171	1007.13
3093.14	9028(A)-S	1.00	15.79	90.17	165	ND
3093.15	9028(A)-W	1.00	15.05	86.46	181	ND
3093.16	9028(A)-E	1.00	15.21	90.01	172	ND
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METHOD BLANK	26-Oct-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

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

Client :	U.S. Army	Lab. ID # :	3153
	DPW. SELFM-PW-EV	Date Rec'd:	07-Nov-97
	Bldg. 173	Analysis Start:	10-Nov-97
	Ft. Monmouth, NJ 07703	Analysis Complete:	11-Nov-97
Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	
Analyst:	D.DEINHARDT	DICAR #:	
East Moth.	Shake	Location #:	BLDGS.

						9028, 9012
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3153.01	9028(C)-N2	1.00	15.27	90.05	171	ND
3153.02	9028(C)-N3	1.00	15.54	92.42	164	ND
3153.03	9012(B)-N2	1.00	15.17	92.82	167	ND
3153.04	9012(B)-N3	1.00	15.75	93.14	160	ND
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METHOD BLANK	10-Nov-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

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Laboratory Director

APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-43

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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Permsylvania 19482 Telephone (610) 265-2700

CERTIFICATE OF NON-HAZARDOUS VESSEL

FACILITY: VESSEL:

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 0 - 0 - 22, 1997, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

ite Manager

Print or Type Name Here

APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-43

APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-12

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PART DY: SMC ENVIRONMENT SEH 61033711

SMC Environmental Services Group A Subsidiery of Science Management Corporation

P.O. Box 859 Valley Forge, Pannsylvania 19482 Telephone (610) 265-2700



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This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of <u>3:00</u> A.M./R.M. on <u>1221</u>, <u>121</u>, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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Print or Type Name Here

APPENDIX E

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WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-43

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Old Bridge, N.J. 08857 (908) 721-0900 Fax (908) 721-0231

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United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9030 Camp Evans Area

NJDEP UST Registration No. 90029-12

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1.0	UNDI	ERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES	.2
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	1.2	Underground Storage Tank Excavation And Cleaning	.3
	1.3	Underground Storage Tank Transportation And Disposal	.3
	1.4	Management Of Excavated Soils	.3
2.0	SITE	INVESTIGATION ACTIVITIES	.4
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3.0	SOIL	SAMPLING RESULTS	.5
4.0	CON	CLUSIONS AND RECOMMENDATIONS	6

TABLES

Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results

FIGURES

Figure 1	Building 9030 - UST Removal Location Map
Figure 2	Building 9030 - UST Removal and Soil Sample Locations

APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

EXECUTIVE SUMMARY

UST Closure

On November 21, 1997, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-12 (Fort Monmouth Identification No. 9030), was located north of Building 9030 in the Camp Evans area of Fort Monmouth. The UST was a 2,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the southern end of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and no evidence of potentially contaminated soil was observed. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 376.96 milligrams per kilogram (mg/kg). No soil was removed from the excavation.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9030 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-12 at Building 9030.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-12, was closed at Building 9030 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on November 21, 1997. The UST was a fiberglass 2,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-12 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no historical discharges are associated with UST No. 90029-12.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9030 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-12 was located north of Building 9030 and associated piping ran approximately 15 feet south from the UST to Building 9030. The UST fill port area was located directly above the southern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9030.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and purging of the associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was cleaned and removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of potential contamination was observed. Visual and PID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and tank residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, no soil exhibited evidence of contamination. Therefore, all of the clean native soil and the necessary amount of imported clean fill were used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

2.2 SOIL SAMPLING

On November 21, 1997, after the UST removal, post-excavation soil samples 9030S1, 9030S2 (Duplicate of 9030S1), 9030DS, 9030E, 9030W, 9030N, and 9030RF/VL were collected from six locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 10 to 10.5-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9030DS was collected beneath the 9030S1 and 9030S2 sample locations from 11.5 to 12-feet bgs. Sample 9030RF/VL was collected from next to Building 9030 along the former return/feed line piping length of the excavation, which was approximately 15 feet long. Sample 9030RF/VL was collected from 1.5 to 2-feet bgs. Samples 9030OBS(A), 9030OBS(B), and 9030OBS(C) were collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from six locations on November 21,1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on November 21, 1997 from the UST excavation contained concentrations of TPHC ranging from non-detect to 376.96 mg/kg.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9030 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-12 at Building 9030.

Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS .	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
ANEDH	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
	Another designation for a confirmatory sample
R/F/VL	Return/reed/vent lines. Used at buildings where the return/reed lines and the vent lines were located close together and one
OONITA	sample could be collected for both lines
	Sample collected at a location of suspected containination
	Test sit/treach
	Heardous waste area building (former location)
	Above ground storage tank
Q1054STR1	Sample collected at the former location of an AST at the specified building
DEI	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
·····						
9030S1	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030S2	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030DS	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030Ë	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030W	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030N	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030OBS(A)	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030OBS(B)	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030OBS(C)	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9030RF/VL	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1 Summary of Post-Excavation Sampling Activities Building 9030, Camp Evans Area Wall Township, New Jersey

						NJDEP Soil		
Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
903051	3172 01	11/21/97	11/24 - 26/97	TPHC	164	ND	10,000	No
903082	3172.02	11/21/97	11/24 - 26/97	TPHC	163	ND	10,000	No
903005	3172.03	11/21/97	11/24 - 26/97	TPHC	166	ND	10,000	No
9030E	3172.04	11/21/97	11/24 - 26/97	TPHC	169	ND	10,000	No
90301/0/	3172.05	11/21/97	11/24 - 26/97	TPHC	166	ND	10,000	No
9030N	3172.06	11/21/97	11/24 - 26/97	TPHC	160	ND	10,000	No
00300BS(A)	3172.07	11/21/97	11/24 - 26/97	TPHC	166	ND	10,000	No
90300D3(A)	3172.08	11/21/97	11/24 - 26/97	TPHC	165	ND	10,000	No
90300BS(C)	3172.00	11/21/97	11/24 - 26/97	TPHC	158	ND	10,000	No
9030RF/VL	3172.10	11/21/97	11/24 - 26/97	TPHC	167	376.96	10,000	No

Table 2 Post-Excavation Soil Sampling Results Building 9030, Camp Evans Area Wall Township, New Jersey

Note:

Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria. *

ND

Not detected Total petroleum hydrocarbons TPHC





APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-12

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area						
Facility Street Address: Build	Facility Street Address: Building 1207, DCSOPS-BID					
Municipality: <u>Wall Townshir</u>	Municipality: <u>Wall Township</u> County : <u>Monmouth</u>					
Block: 240, 241 and 242 La	Block: 240, 241 and 242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02					
Telephone Number : (732) 23	Telephone Number : (732) 239-2427					
B. Owner (RP)'s Name: US Army, CECOM						
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth						
State: NJ Zip: 07703 Telephone Number : (732) 532-5052						
C. (Check as appropriate) D. (Complete all that apply)						
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>					
UST Registration Number : (7 digits): 90029 - 12 Incident Report (SIR) \$500 Fee Incident Report Number (10 or 12 digits):						
Remedial Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manag</u> Investigation						
Report (RIR) \$1000 Fee						
E. Certification by the Subsurface Evaluator:						
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes						
Name: Kevin J. Phelan Signature: Kerry L. Phalan UST Cert. No.: 0018436						
Firm: Tetra Tech EM, Inc. Firm's UST Cert. Number: US00457						
Firm Address: 1 Bank Street, Suite 103 City: Rockaway						
State: NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230						

State: <u>NJ</u>	Zip: <u>07866</u>	Telephone Number : <u>(973) 9830507, Ext. 230</u>

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the

document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or

- 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 a principal executive officer or ranking elected Official.

"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): Mr. Charles Appleby

Title: BRAC Environmental Coordinator, Evans Area

NJDEP Subsurface Evaluator # 2056

Signature:

VV		
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Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703

Date: November 30, 2000

APPENDIX B

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PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-12



PHOTO 1: View of excavation activities commencing at the UST-9030 location (looking south/southeast).



PHOTO 2: View of the cleaned interior of UST-9030 (looking east) (the apparent "sludge" on the inside of the tank occurred from the no. 2 fuel oil staining the fiberglass).



PHOTO 3: View of UST-9030 being removed from the ground (looking southeast).



PHOTO 4: View of the sampling locations in the UST-9030 excavation (looking north).

APPENDIX C

SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-12
Client :	U.S. Army			Lab. ID # :		3172
	DPW. SELFM-	PW-EV		Date Rec'd:		21-Nov-97
	Bldg. 173			Analysis Sta	rt:	24-Nov-97
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	26-Nov-97
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD	C		DICAR #:		
Ext. Meth:	Shake			Location #:	В	LDGS. 9030, 9035
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3172.01	9030-S1	1.00	15.38	92.92	164	ND
3172.02	9030-S2	1.00	15.52	92.65	163	ND
3172.03	9030-DS	1.00	15.98	88.82	166	ND
3172.04	9030-E	1.00	15.66	88.65	169	ND
3172.05	9030-W	1.00	15.58	90.65	166	ND
3172.06	9030-N	1.00	15.26	96.48	160	ND
3172.07	9030-OBS(A)	1.00	15.46	91.50	166	ND
3172.08	9030-OBS(B)	1.00	15.82	90.17	165	ND
3172.09	9030-OBS(C)	1.00	16.03	92.86	158	ND
3172.10	9030-RF/VL	1.00	15.77	89.00	167	376.96
3172.11	9035-RF/VL	1.00	15.21	90.20	171	ND
METHOD BLANK	24-Nov-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-12

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SMC Environmental Services Group A Subscience Management Corporation

P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

SMC ENVIRONMENT SEH 61033718/5



Page 2/8 🕾

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of <u>3:00</u> A.M./R.M. on <u>1122171</u>, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

site Manager

Print or Type Name Here

APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-12

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GENERATOR CERTIFICATION

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

(x722:)Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- X723, Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

I am duly authorized to sign said certification.

Gene	rator U.S. ARMY	COMMUNICATIONS	ELECTRONICS	BMMAND	CAMP BUSNIS AREA
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United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9031 Camp Evans Area

NJDEP UST Registration No. 90029-13

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Figure 2	Building 9031 - UST Removal and Soil Locations
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APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

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EXECUTIVE SUMMARY

UST Closure

On October 2, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-13 (Fort Monmouth Identification No. 9031), was located north of Building 9031 in the Camp Evans area of Fort Monmouth. The UST was a 550-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). Thirteen holes were noted in the side of the UST and contamination was observed in the soil located adjacent to the underside of the tank (soil registered 160 through 170 parts per million [ppm] on the air monitoring equipment). Samples collected at the time the UST was removed contained total petroleum hydrocarbons (TPHC) concentrations ranging from non-detect to 2,838.82 milligrams per kilogram (mg/kg). After additional soil was excavated and removed, soil remaining in the excavation contained TPHC concentrations ranging from non-detect to 326.89 mg/kg. The total amount of soil removed from the excavation was 230 cubic yards.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9031 area, as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soili cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-13 at Building 9031.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-13, was closed at Building 9031 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on October 2, 1997. The UST was a steel 550-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-13 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one significant historical discharge was associated with UST No. 90029-13.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9031 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-13 was located north of Building 9031 and associated piping ran approximately 25 feet south from the UST to Building 9031. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9031.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. Thirteen holes were observed on the side of the UST by the Tetra Tech site manager and the SMC subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Contamination was observed or detected by the PID/FID in soil located adjacent to the underside of the tank. In addition, visual and PID/FID soil screening was also performed along piping associated with the UST. Contamination was noted at the location where the piping enters Building 9031.

The sludges and tank residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figures 2 and 3 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from postexcavation soil samples, soil adjacent to the tank underside and the location where the piping enters the building was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean excavated (overburden) soil and imported clean fill were used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: David H. Daniels Employer: SMC Environmental Services Group Telephone No.: (215) 788-7844
 NJDEP Certification No.: 0010279
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and associated piping, as well as the UST excavation sidewalls and bottom, did exhibit evidence of contamination and was transported to the soil staging area; however, the overburden soil excavated from above the tank and the associated piping did not exhibit indications of contamination at the time of the UST removal.

2.2 SOIL SAMPLING

On October 2 and 3, 1997, following the removal of the UST post-excavation soil samples 9031B1, 9031RF1, and 9031RF2 were collected from one location in the UST excavation and two locations along the former return/feed line piping length. Figure 2 presents the sampling locations. The bottom sample (9031B1) was collected from 13.5 to 14.0 feet below ground surface (bgs) after several truckloads of contaminated soil had been removed. Sample 9031RF1 was collected from next to Building 9031 along the former return/feed line piping length of the excavation, which was approximately 25 feet long. Sample 9031RF2 was collected approximately 15 feet from the building along the former return/feed line piping length and sample 9031RF2 were collected from 1 to 1.5-feet bgs. Sample 9031OBS was collected from the overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Analytical results of the original post-excavation samples revealed 2,838.82 milligrams per kilogram (mg/kg) TPHC at 9031RF1 sample location. This concentration exceeds 1,000 mg/kg TPHC, which is NJDEP's criterion for additional soil removal/remediation or for required VOC sampling. However, because of the fact that PID readings indicated that contamination was still present in the main UST excavation, Tetra Tech and SMC postponed further excavation along the former return/feed line piping length and excavated additional soil from the main UST excavation and collected post-excavation soil samples 9031S1, 9031S2 (Duplicate of 9031S1), 9031W1, 9031N1, 9031B2, 9031E1, 9031E2 (Duplicate

of 9031E1), 9031E3, and 9031E4 from a total of seven sampling locations. The bottom sample (9031B2) was collected from 13.5 to 14.0 feet bgs. Sidewall samples collected on October 17, 1997 were collected from 13.0 to 13.5 feet bgs while the sidewall samples collected on October 20, 1997 were collected between 6 to 6.5 feet bgs and 13.5 to 14.0 feet bgs. In addition, samples 90310BS2, 90310BS3, 90310BS4, and 90310BS5 were collected from four locations on the additional overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

After analytical results confirmed that the soil remaining in the UST excavation contained little or no contamination, Tetra Tech and SMC excavated additional soil from the location where the former return/feed line piping length entered Building 9031 and collected post-excavation soil samples 9031RB1, 9031RE1, 9031RS1, 9031RW1, 9031RB2, 9031RB3, and 9031RN1 from a total of six sampling locations (Subsequent laboratory analysis revealed that one sample, 9031RB1, contained a concentration of 6,871.73 mg/kg; however, the soil from this location was removed and transported to the soil staging area prior to the collection of samples 9031RB2 and 9013RB3). Bottom samples were collected between 3.5 to 4.0 feet bgs and 7.0 to 7.5 feet bgs. Sidewall samples were collected between 4.0 to 4.5 feet bgs and 4.5 to 5.0 feet bgs. All samples were analyzed for TPHC and total solids. Figure 3 presents additional post-excavation sampling locations

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from twenty locations between October 1997 and February 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the

NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figures 2 and 3. The analytical data package is provided in Appendix C.

Several of the post-excavation soil samples collected from the UST excavation and from below piping associated with the UST contained concentrations of TPHC of up to 6,871.73 mg/kg. The remainder of the samples contained TPHC concentrations from non-detect to 326.89 mg/kg.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9031 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, no longer exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-13 at Building 9031.

Legend of Sample identifications Camp Evans Area Wall Township, New Jersey

в	Sample from the bottom of the excavation
	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the porth sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the LIST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
•	the contaminated soil stockoile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
ONEDM	the sample was collected
	Continuatory sample to continu that contamination has been removed
	Another designation for a commitmatory sample Betwey/feed/west lines. Used at buildings where the return feed lines and the vest lines were legated along tegether and ano
	Return/reeu/vent lines. Used at buildings where the return/reed lines and the vent lines were located close together and one
SCNT1	Sample collected at a location of suspected contamination
	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation)
	Test nit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

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Table 1	
Summary of Post-Excavation Sampling Activities	
Building 9031, Camp Evans Area	
Wall Township, New Jersey	

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Sampia ID	Date Collected	Date Analysis Started	Motrix	Sample Type	Analytical Parameters*	Analysis Method
9031RF1	10/2/97	10/6/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031RB1**	2/11/98	2/21/98	Soll	Post-Excavation	TPHC	OQA-QAM-025
OCHREAT CON	2/11/98)	2/2//98	State Sollar Sa	Post-Excelvation	IIP=C+	0@A-@AM-025-
(CISHIRIS) AND A	2002/140/01816-C3	2/2/(03)	Contraction (Contraction)	20SIdExcavation	IN ARPHOLE	OOA OAM025
9031RE1**	2/11/98	2/21/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031RS1**	2/11/98	2/21/98	Soil	Post-Excavation	TPHC	= 0QA=QAM-025
9031RW1**	2/11/98	2/21/98	Soil	Post-Excavation	TPHC	. OQA-QAM-025
9031RN1**	2/11/98	2/21/98	Soil	Post-Excavation	TPHC	0QA-QAM-025
9031RF2	10/2/97	10/6/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031OBS	10/2/97	10/6/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031B1	10/3/97	10/6/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031S1	10/17/97	10/17/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031S2	10/17/97	10/17/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031W1	10/17/97	10/17/ 9 7	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031N1	10/17/97	10/17/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031B2	10/17/97	10/17/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031E1	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031E2	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031E3	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031E4	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031OBS2	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031OBS3	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031OBS4	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9031OBS5	10/20/97	10/21/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total petroleum hydrocarbons
 ** Samples collected to remediate contamination found in sample above.

Table 2
Post-Excavation Soil Sampling Results
Building 9031, Camp Evans Area
Wall Township, New Jersey

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
0021051	2020.04	10/0/07	40/6 0/07		400		10.000	No
9031RF1	3029.01	10/2/97	10/0 - 0/9/		100	2,030.02	10,000	No
	3220105	2/11/90	2/2//00		100			No
(MIRAL PROPERTY AND A DECIMAL		Gyk (Gr			Nut rice participation	NIN		N È P
BIOSTICE	3338102	2/11/98	2/21/98	നലംത്രം	185	ND	10.000	Not
9031RS1**	3338.03	2/11/98	2/21/98	TPHC	169	ND	10.000	No
9031RW1**	3338.04	2/11/98	2/21/98	TPHC	164	ND .	10.000	No
9031RN1**	3338.07	2/11/98	2/21/98	TPHC	178	ND	10.000	No
9031RF2**	3029.02	10/2/97	10/6 - 8/97	TPHC	168	288.36	10.000	No
9031OBS	3029.03	10/2/97	10/6 - 8/97	TPHC	181	326.89	10,000	No
9031B1	3030.01	10/3/97	10/6 - 8/97	TPHC	169	ND	10,000	No
9031S1	3082.01	10/17/97	10/17 - 18/97	TPHC	166	ND	10,000	No
9031S2	3082.02	10/17/97	10/17 - 18/97	TPHC	170	193.96	10,000	No
9031W1	3082.03	10/17/97	10/17 - 18/97	TPHC	172	210.62	10,000	No
9031N1	3082.04	10/17/97	10/17 - 18/97	TPHC	171	305.94	10,000	No
9031B2	3082.05	10/17/97	10/17 - 18/97	TPHC	172	184.96	10,000	No
9031E1	3085.01	10/20/97	10/21 - 22/97	TPHC	178	ND	10,000	No
9031E2	3085.02	10/20/97	10/21 - 22/97	TPHC	176	ND	10,000	No
9031E3	3085.03	10/20/97	10/21 - 22/97	TPHC	154	ND	10,000	No
9031E4	3085.04	10/20/97	10/21 - 22/97	TPHC	167	ND	10,000	No
9031OBS2	3085.05	10/20/97	10/21 - 22/97	TPHC	167	ND	10,000	No
9031OBS3	3085.06	10/20/97	10/21 - 22/97	TPHC	163	ND	10,000	No
9031OBS4	3085.07	10/20/97	10/21 - 22/97	TPHC	165	ND	10,000	No
9031OBS5	3085.08	10/20/97	10/21 - 22/97	TPHC	174	197.33	10,000	No

Note:

The contamination present in sample 9031RB1 was excavated and removed prior to collection of samples 9031RB2 and 9031RB3.

Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria. *

ND Not detected

TPHC

Total petroleum hydrocarbons Samples collected to remediate contamination found in sample above. **







APPENDIX A

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SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-13

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area								
Facility Street Address: Building 1207, DCSOPS-BID								
Municipality: <u>Wall Townshi</u> j	Municipality: Wall Township County : Monmouth							
Block: 240, 241 and 242 L	ot(s): <u>240 (55.01, 55.02, 55.03 & 55.04)</u> , <u>241 (1), 242 (1.01 & 1.02</u>							
Telephone Number : (732) 23	<u>9-2427</u>							
B. Owner (RP)'s Name: US Army, CECOM								
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth								
State: <u>NJ</u> Zip: <u>07703</u>	State: <u>NJ</u> Zip: 07703 Telephone Number : (732) 532-5052							
C. (Check as appropriate)	D. (Complete all that apply)							
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>							
Report (SIR) \$500 Fee	 UST Registration Number : (7 digits): 90029 - 13 Incident Report Number (10 or 12 digits): 							
Remedial Investigation	Remedial Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u> Investigation							
Report (RIR) \$1000 Fee								
E. Certification by the Subsurface Evaluator:								
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E Yes								
Name: Kevin J. Phe	Name: Kevin J. Phelan Signature: Kerrin J. Phelan UST Cert. No.: 0018436							
Firm: Tetra Tech EM. Inc. Firm's UST Cert. Number: US00457								
Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway							
State: NJ Zip: 07	866 Telephone Number : (973) 9830507, Ext. 230							

State:	NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230
(NOTE et seq.	: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A)
F. c	ertification by the Responsible Party(ies) of the Facility:
The fo	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follow
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
2. 3.	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking
	submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submittin false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree i make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
-	Date: November 30, 2000

APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-13



PHOTO 1: View of UST-9031 after cleaning the interior (looking northwest).



PHOTO 2: View of the eastern end of UST-9031 showing holes (circled with white paint) (looking west).



PHOTO 3: View of the remedial excavation at the former UST-9031 location (looking west).



PHOTO 4: View of UST-9031 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

APPENDIX C

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SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-13

Client :	U.S. Army			Lab. ID # :	3029		
	DPW. SELFM-I	PW-EV		Date Rec'd:		03-Oct-97	
	Bldg. 173			Analysis Sta	rt:	06-Oct-97	
	Ft. Monmouth,	NJ 07703		Analysis Con	nplete:	08-Oct-97	
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD	Г		DICAR #:			
Ext. Meth:	Shake			Location #:		BLDG. 9031	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3029.01	9031-RF1	1.00	15.74	79.53	188	2838.82	
3029.02	9031-RF2	1.00	15.47	90.42	168	288.36	
3029.03	9031-OBS	1.00	15.04	86.28	181	326.89	
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METHOD BLANK	6-Oct-97	1.00	15.00	100.00	157	ND	

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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Client :	U.S. Army	Lab. ID # :		3030 03-Oct-97			
	DPW. SELFM-PW-EV						
	Bldg. 173			Analysis Star	rt:	06-Oct-97	
	Ft. Monmouth,		Analysis Con	nplete:	08-Oct-97		
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD'	г		DICAR #:			
Ext. Meth:	Shake			Location #:		BLDG. 9031	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3030.01	9031-B1	1.00	15.28	90.86	169	ND	
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ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright-

Laboratory Director

Client :	U.S. Army	Lab. ID # : Date Rec'd: Analysis Start:		3082 17-Oct-97 17-Oct-97		
	DPW. SELFM-					
	Bldg. 173					
	Ft. Monmouth,	Analysis Cor	nplete:	19-Oct-97		
Analysis:	OQA-QAM-025	I		UST Reg. #:		
Matrix:	Soil		Closure #:			
Analyst:	D.DEINHARD	Г		DICAR #:	BLDG. 9031	
Ext. Meth:	Shake			Location #:		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3082.01	9031-S1	1.00	15.50	91.33	166	ND
3082.02	9031-S2	1.00	14.98	92.24	170	193.96
3082.03	9031-W1	1.00	15.37	88.71	172	210.62
3082.04	9031-N1	1.00	14.95	91.92	171	305.94
3082.05	9031-B2	1.00	15.06	90.56	172	184.96
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ND = Not Detected MDL = Method Detection Limit

Daniel K. Wright

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Laboratory Director

Client :	U.S. Army		Lab. ID # :		3085		
	DPW. SELFM-	PW-EV		Date Rec'd:		21-Oct-97	
	Bldg. 173	Analysis Start:		21-Oct-97			
	Ft. Monmouth,		Analysis Cor	nplete:	22-Oct-97		
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD	6		DICAR #:			
Ext. Meth:	Shake			Location #:		BLDG. 9031	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3085.01	9031-E1	1.00	15.17	87.24	178	ND	
3085.02	9031-E2	1.00	15.18	88.00	176	ND	
3085.03	9031-E3	1.00	15.67	97.66	154	ND	
3085.04	9031-E4	1.00	15.58	90.29	167	ND	
3085.05	9031-OB\$2	1.00	15.90	88.27	167	ND	
3085.06	9031-OBS3	1.00	15.79	91.53	163	ND	
3085.07	9031-OBS4	1.00	15.86	89.63	165	ND	
3085.08	9031-OBS5	1.00	15.51	87.08	174	197.33	
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ND = Not Detected MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

Client:	U.S. Army			Lab. ID # :	3338			
	DPW. SELFM-	PW-EV		Date Rec'd:		11-Feb-98		
	Bldg. 173			Analysis Sta	21-Feb-98			
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	21-Feb-98		
Analysis:	OQA-QAM-025			UST Reg. #:				
Matrix:	Soil			Closure #:				
Analyst:	D.DEINHARD'	г		DICAR #:				
Ext. Meth:	Shake			Location #:		Bldg 9031		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)		
3338.01	9031-RB1	1.00	15.39	81.94	186	6871.73		
3338.02	9031-RE1	1.00	15.13	83.78	185	ND		
3338.03	9031-RS1	1.00	15.92	87.49	169	ND		
3338.04	9031-RW1	1.00	15.76	90.91	164	ND		
3338.05	9031-RB2	1.00	15.01	97.24	161	ND		
3338.06	9031-RB3	1.00	15.76	97.39	153	ND		
3338.07	9031-RN1	1.00	15.07	87.51	178	ND		
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METHOD BLANK	12-Feb-98	1.00	15.00	100.00	157	ND		

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-13
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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Perinsylvania 19482 Telephone (610) 265-2700

	CERTIFICATE OF NON-HAZARDOUS VESSEL
FACILITY:	<u>Camp Evans (4.5. Army</u>)
	Wall NJ
	Building 9031
VESSEL:	550-gallon stee 1 tant,
	(Formally # 2 Fuel Dil)

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3200 A.M./R.M. on 10.2.97, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-13

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United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9033 Camp Evans Area

NJDEP UST Registration No. 90029-14

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	1.2	Underground Storage Tank Excavation And Cleaning	3
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4.0	CONC	CLUSIONS AND RECOMMENDATIONS	6

TABLES

Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results

FIGURES

Figure 1	Building 9033 - UST Removal Location Map
Figure 2	Building 9033 - UST Removal and Soil Sample Locations

APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

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EXECUTIVE SUMMARY

UST Closure

On January 22, 1998, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-14 (Fort Monmouth Identification No. 9033), was located south of Building 9033 in the Camp Evans area of Fort Monmouth. The UST was a 6,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the eastern end of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the fill port of the tank. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from nondetect to 249.82 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was less than 5 cubic yards.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9033 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-14 at Building 9033.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-14, was closed at Building 9033 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on January 22, 1998. The UST was a fiberglass 6,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-14 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-14.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9033 is located at the eastern end of the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Building 9032) as shown in Figure 1. UST No. 90029-14 was located south of Building 9033 and associated piping ran approximately 20 feet north from the UST to Building 9033. The UST fill port area was located directly above the eastern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9033.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to removal because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and purging of the associated piping, soil excavation continued to uncover the UST. Because of the large size of the UST, SMC decided to remove the tank from the ground prior to opening and cleaning the tank in order to avoid a confined space entry situation. Once the UST was removed and temporarily staged on the asphalt driveway, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was removed from the excavation, it was examined for holes. No holes were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of potential contamination was observed except for soil located adjacent to the fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and tank residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil located adjacent to the fill port of the tank was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean native soil and the necessary amount of imported clean fill were used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

2.2 SOIL SAMPLING

On January 22, 1998, after the UST removal, post-excavation soil samples 9033W1, 9033W2 (Duplicate of 9033W1), 9033DS, 9033N1, 9033N2, 9033E, 9033R/F/VL1, 90033S1, 9033S2, and 9033R/F/VL2 were collected from nine locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 10 to 10.5-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9033DS was collected beneath the 9033W1 and 9033W2 sample location from 13.5 to 14-feet bgs. Sample 9033R/F/VL1 was collected from next to the UST excavation along the former return/feed line piping length of the excavation, which was approximately 20 feet long. Sample 9033R/F/VL1 was collected from 2 to 2.5-feet bgs. Sample 9033R/F/VL2 was collected from next to Building 9033 along the former return/feed line piping length from 2 to 2.5-feet bgs. In addition, samples 9033OBS1, 9033OBS2, and 9033OBS3 were collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Further investigation of the return/feed line piping revealed that an older portion of the piping had previously run adjacent to the west side of Building 9033. As a result, on February 24, 1998, Tetra Tech and SMC excavated the older portion of the piping and collected post-excavation soil samples 9033R/F/VL3 and 9033R/F/VL4 (Duplicate of 9033R/F/VL3) from a total of one sampling location (at the point where the return/feed line piping entered the west side of the building). Both samples were collected from 0.5 to 1-foot bgs and were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from nine locations on January 22,1998 and one location on February 24, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on January 22, 1998 and February 24, 1998 from the UST excavation contained concentrations of TPHC ranging from non-detect to 249.82 mg/kg.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9033 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-14 at Building 9033.

dentifications د الطور الطلقة Camp Evans Area Wall Township, New Jersey

· · ·	waii Townsnip, New Jersey
R	Sample from the bottom of the exceptation
W	Samples from the west sidewall of the excavation
F	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from heneath the former location of the return/feed lines of the LIST
VI	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil nile of a UST excavation to determine if the soil can be used as backfill or must be transported to
020	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	lest pit/trench
HWAB	Hazardous waste area building (former location)
ASI	Above ground storage tank
9105A51B1	Sample collected at the former location of an AST at the specified building
	Demole collected from a storm drain
SM	Sample collected from a storm drain
CTP	Connor tubing run
Oor-I	Crean soil pile

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Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
· · · · · ·						
9033W1	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033W2	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033DS	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033N1	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033N2	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	oqa-qam-025
9033E	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033R/F/VL1	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033S1	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033S2	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033OBS1	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033OBS2	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033OBS3	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	oqa-qam-025
9033R/F/VL2	1/22/98	1/26/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033R/F/VL3	2/24/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9033R/F/VL4	2/24/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1 Summary of Post-Excavation Sampling Activities Building 9033, Camp Evans Area Wall Township, New Jersey

Table 2 Post-Excavation Soil Sampling Results Building 9033, Camp Evans Area Wall Township, New Jersey

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9033\//1	3205.01	1/22/08	1/26 - 27/08	трис	163		10.000	No
9033W2	3295.02	1/22/98	1/26 - 27/98	TPHC	159		10,000	No
9033DS	3295.03	1/22/98	1/26 - 27/98	TPHC	159	ND	10,000	No
9033N1	3295.04	1/22/98	1/26 - 27/98	TPHC	172	ND	10,000	No
9033N2	3295.05	1/22/98	1/26 - 27/98	TPHC	164	ND	10,000	No
9033E	3295.06	1/22/98	1/26 - 27/98	TPHC	167	ND	10,000	No
9033R/F/VL1	3295.07	1/22/98	1/26 - 27/98	TPHC	174	ND	10.000	No
9033S1	3295.08	1/22/98	1/26 - 27/98	TPHC	181	ND	10.000	No
9033S2	3295.09	1/22/98	1/26 - 27/98	TPHC	165	ND	10,000	No
9033OBS1	3295.10	1/22/98	1/26 - 27/98	TPHC	160	ND	10,000	No
9033OBS2	3295.11	1/22/98	1/26 - 27/98	TPHC	177	ND	10,000	No
9033OBS3	3295.12	1/22/98	1/26 - 27/98	TPHC	174	ND	10,000	No
9033R/F/VL2	3295.13	1/22/98	1/26 - 27/98	TPHC	170	249.82	10,000	No
9033R/F/VL3	3364.01	2/24/98	2/27 - 28/98	TPHC	177	ND	10,000	No
9033R/F/VL4	3364.02	2/24/98	2/27 - 28/98	TPHC	178	ND	10,000	No

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons



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APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-14

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

	A. Facility Name: US Army, Fort Monmouth, Evans Area							
	Facility Street Address: Building 1207, DCSOPS-BID							
,	Municipality: Wall Township	2 County : <u>Monmouth</u>						
	Block: 240, 241 and 242 Lo	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02						
	Telephone Number : (732) 23	9-2427						
	B. Owner (RP)'s Name: US Army, CECOM							
	Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth							
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	State: NJ Zip: 07703 Telephone Number : (732) 532-5052							
	C. (Check as appropriate) D. (Complete all that apply)							
	• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>						
	Report (SIR) \$500 Fee	 US1 Registration Number : (7 digits): 90029 - 14_ Incident Report Number (10 or 12 digits): 						
ويوريون أتشته عاليا يورونا المالية	• Remedial Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>						
	Report (RIR) \$1000 Fee							
	E. Certification by the Subsurface Evaluator:							
	The attached report conforms to the specific reporting requirements of N LA C 7.26E · Voc							
100 million (100 million)	Nama: Kavin I Phol	an Signature: $\mathcal{V}_{aa} = i_{aa} \int -\frac{1}{2} \int da = 11ST \operatorname{Cert} Na \cdot 0.019436$						
and a second	Firm: Tetra Tech EM. Inc	Firm's UST Cert. Number: US00457						
	Firm Address: 1 Bank Stro	et Suite 103 City: Bockaway						
		$\frac{1}{2} \frac{1}{2} \frac{1}$						
1	State: NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230							

State: <u>I</u> (NOTE et seq.)	NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230 : Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-2
F. c.	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: November 30, 2000

APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-14

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PHOTO 1: View of UST-9033 being uncovered (looking east/northeast).



PHOTO 2: View of the UST-9033 being removed from the ground (looking east).



PHOTO 3: View of the cleaned interior of UST-9033 (looking east/southeast).



PHOTO 4: View of the sampling locations in the UST-9033 excavation (looking east).

APPENDIX C

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SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-14

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

Client :	U.S. Army			Lab. ID # :		3295	
	DPW. SELFM-F	PW-EV		Date Rec'd:		23-Jan-98	
	Bldg. 173			Analysis Start:		26-Jan-98	
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	27-Jan-98	
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD'I			DICAR #:			
Ext. Meth:	Shake			Location #:	<u>.</u>	BLDG. 9033	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3295.01	9033-W1	1.00	15.00	96.32	163	ND	
3295.02	9033-W2	1.00	15.39	95.76	159	ND	
3295.03	9033DS	1.00	15.56	94.82	159	ND	
3295.04	9033-N1	1.00	15.19	90.12	172	ND	
3295.05	9033-N2	1.00	15.00	95.78	164	ND	
3295.06	9033-E	1.00	15.06	93.40	167	ND	
3295.07	9033-R/F/VL1	1.00	15.51	87.18	174	ND	
3295.08	9033-S1	1.00	15.52	83.78	181	ND	
8295.09	9033-S2	1.00	15.69	90.92	165	ND	
3295.10	9033-OBS1	1.00	15.74	93.54	160	ND	
3295.11	9033-OBS2	1.00	15.47	85.64	177	ND	
3295.12	9033-OBS3	1.00	15.04	89.88	174	ND	
3295.13	9033-R/F/VL2	1.00	15.46	89.49	170	249.82	
3295.14	CSP-1	1.00	15.26	90.51	170	ND	
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METHOD BLANK	26-Jan-98	1.00	15.00	100.00	157	ND	

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client :	U.S. Army			Lab. ID # :		3364
	DPW. SELFM-F	PW-EV		Date Rec'd:		25-Feb-98
	Bldg. 173			Analysis Sta	rt:	26-Feb-98
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	28-Feb-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		•
Analyst:	D.DEINHARDT	n		DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9033
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3364.01	9033-R/F/VL3	1.00	15.25	86.94	177	ND
3364.02	9033-R/F/VL4	1.00	15.24	86.39	178	ND
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METHOD BLANK	26-Feb-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-14

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		CARRENT CONTRACTOR		
	·	Building # 9033		
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This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 1/22/92, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

SMC ENVIRONMENT SER

sent by:

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APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-14

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IIPPING INFORMATION

SERVICE SECTION

WASTES

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4.	Generator's Phone ()								
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7.	Transporter 2 Company Name	8.	US EPA ID	Number	B. Transpo	orter's Ph	10116		ł
9.	Designated Facility Name and Site Address LIONETTI OIL RECOVERY CO RUNYON&CHEESEQUAKE RDS OLD BRIDGE, NJ 08857	INC DBA LORCO	US EPAID PETROLEUM	Number SVCS D, 4, 4, 0, 6, 4	C. Facility	s Phone 721 -	0900		
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GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No. 09548 dated 1-28-98,

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: MA PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. Army Communications Electronics Command
Generator's EPA ID No. NJ 3 21 00 20 324
Address Camp Evans Area FT. Nonmonth, N.J. 07703
Print Name Charles Apples Signature Signature
Title Envi PRot. per. SELPM-PW-EV
Date 1-28-98

United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

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Building 9035 Camp Evans Area

NJDEP UST Registration No. 90029-15

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APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

EXECUTIVE SUMMARY

UST Closure

On November 18, 1997, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-15 (Fort Monmouth Identification No. 9035), was located east of Building 9035 in the Camp Evans area of Fort Monmouth. The UST was a 2,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the UST fill port. Samples collected at the time the UST was removed contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). The total amount of soil removed from the excavation was less than 5 cubic yards.

Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9035 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total for organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-15 at Building 9035.
1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-15, was closed at Building 9035 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on November 18, 1997. The UST was a fiberglass 2,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-15 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-15.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

1.1 SITE DESCRIPTION

Building 9035 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base as shown in Figure 1. UST No. 90029-15 was located east of Building 9035 and associated piping ran approximately 10 feet west from the UST to Building 9035. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9035.

1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad, soil excavation continued to uncover the UST and the associated piping. Once the UST was uncovered, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the tank cleaning had been completed, SMC removed all of the associated piping from the ground.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. No holes were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. The only evidence of potential contamination was observed in soil located adjacent to the fill port of the UST. Visual and PID/FID soil screening was also performed along piping associated with the UST. A small amount of contaminated soil, less than 1 cubic yard, was noted along the piping length where residual oil had leaked out of the lines during the removal of the piping.

The sludges and tank residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, only soil adjacent to the UST fill port (less than 1 cubic yard) and the associated piping (less than 1 cubic yard) was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean native soil and imported clean fill were used to backfill the UST excavation.

2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507
 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
NJDEP Hazardous Waste Hauler No.: S6247

2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the majority of the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

2.2 SOIL SAMPLING

On November 19, 1997 and November 21, 1997, after the UST removal, post-excavation soil samples 9035S1, 9035S2 (Duplicate of 9035S1), 9035DS, 9035E, 9035N, 9035W, and 9035RF/VL were collected from six locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 11 to 11.5 feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9035DS was collected from 12 to 12.5 feet bgs adjacent to the southeastern corner of the concrete pad. Sample 9035RF/VL was collected from next to Building 9035 along the former return/feed line piping length of the excavation, which was approximately 10 feet long. Sample 9035RF/VL was collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from six locations on November 19, 1997 and November 21,1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on November 19, 1997 and November 21, 1997 from the UST excavation contained non-detectable concentrations of TPHC.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9035 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil clean up criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-15 at Building 9035.

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В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
~~~~	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
001174	sample could be collected for both lines
SCN11	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	lest pit/trench
HVVAB	Hazardous waste area building (tormer location)
	Above ground storage tank
9109A51B1	Sample collected at the former location of an AST at the specified building
	Semple collected from a storm droin
SM	Sample collected from a sidewall of a remodial execution
	Connected norm a sucreal of a remedial excavation
00-1	Clean soil pile

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9035OBS(A)	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035OBS(B)	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035S1	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035S2	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035DS	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035E	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035N	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035W	11/19/97	11/20/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9035RF/VL	11/21/97	11/24/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
			44100107	TOUO	470		10,000	No
9035OBS(A)	3167.01	11/19/9 <i>7</i>	11/20/97	TPHC	170	ND	10,000	INU
9035OBS(B)	3167.02	11/19/97	11/20/97	TPHC	173	ND	10,000	NO
9035S1	3167.03	11/19/97	11/20/97	TPHC	180	ND	10,000	No
903582	3167.04	11/19/97	11/20/97	TPHC	172	ND	10,000	No
9035DS	3167.05	11/19/97	11/20/97	TPHC	168	ND	10,000	No
9035E	3167.06	11/19/97	11/20/97	TPHC	164	ND	10,000	No
9035N	3167.07	11/19/97	11/20/97	TPHC	168	ND	10,000	No
0025\//	3167.08	11/10/07	11/20/97	TPHC	169	ND	10.000	No
3000VV	0107.00	44/04/07	11/04 06/07	TPHC	171	ND	10,000	No
9035KF/VL	3172.11	(1/21/97	11/24 - 20/97	TENO	471		10,000	

### Table 2 Post-Excavation Soil Sampling Results Building 9035, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria

ND Not detected

TPHC Total petroleum hydrocarbons





### APPENDIX A

### SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-15

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

### UST Site/Remedial Investigation Report Certification Form

1	A. Facility Name: US Arm	ny, Fort Monmouth, Evans Area
an in the second se	Facility Street Address: Build	ding 1207, DCSOPS-BID
a successive of the successive success	Municipality: Wall Township	<u>o</u> County : <u>Monmouth</u>
	Block: 240, 241 and 242 Lo	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02
	Telephone Number : (732) 23	9-2427
	<b>B.</b> Owner (RP)'s Name: U	S Army, CECOM
	Street Address: DCSOPS-E	BID, Bldg. 1207 City : Fort Monmouth
	State: <u>NJ</u> Zip: <u>07703</u>	Telephone Number : (732) 532-5052
	<b>C.</b> (Check as appropriate)	<b>D.</b> (Complete all that apply)
	• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>
	Report (SIR) \$500 Fee	US1 Registration Number : (7 digits): 90029 - <u>15</u> Incident Report Number (10 or 12 digits):
	Remedial Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>
	Report (RIR) \$1000 Fee	
	E. Certification by the Sul	bsurface Evaluator:
	The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes
	Name: Kevin J. Phel	an Signature: <u>Kerin J. Phelan</u> UST Cert. No.: 0018436
	Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457
	Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway
	State: <u>NJ</u> Zip: <u>07</u>	866 Telephone Number : (973) 9830507, Ext. 230
H		

State: <u>N</u> (NOTE: et seq.)	NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230 : Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-2
<b>F.</b> Ce	ertification by the Responsible Party(ies) of the Facility:
The foli	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2	submitted along with the certification; or 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 a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Data: November 30, 2000

### APPENDIX B

### PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-15



PHOTO 1: View of excavation activities commencing at the UST-9035 location (looking northeast).



PHOTO 2: View of the cleaned interior of UST-9035 (looking west/southwest) (Note: A small amount of soil fell inside the tank after cleaning the interior was completed).



PHOTO 3: View of UST-9035 being removed from the ground (looking northeast).



PHOTO 4: View of the sampling locations in the UST-9035 excavation (looking southwest).

### APPENDIX C

### SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-15

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

Client :	U.S. Army	Lab. ID # :	3167
	DPW. SELFM-PW-EV	Date Rec'd:	19-Nov-97
	Bldg. 173	Analysis Start:	20-Nov-97
	Ft. Monmouth, NJ 07703	Analysis Complete:	20-Nov-97
Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	
Analyst:	D.DEINHARDT	DICAR #:	
Ext. Meth:	Shake	Location #:	BLDG.

						9035
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3167.01	9035-OBS(A)(PILE)	1.00	15.49	89.42	170	ND
3167.02	9035-OBS(B)(PILE)	1.00	15.04	90.30	173	ND
3167.03	9035-S1(11-11.5')	1.00	15.19	85.75	180	ND
3167.04	9035-S2(11-11.5)	1.00	15.72	86.92	172	ND
3167.05	9035-DS(12-12.5)	1.00	15.11	92.49	168	ND
3167.06	9035-E(11-11.5)	1.00	15.60	92.09	164	ND
3167.07	9035-N(11-11.57)	1.00	15.75	88.96	168	ND
3167.08	9035-W(11-11.5)	1.00	15.48	89.65	169	ND
METHOD BLANK	19-Nov-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client :	U.S. Army			Lab. ID # :		3172
	DPW. SELFM-	PW-EV		Date Rec'd:		21-Nov-97
	Bldg. 173			Analysis Sta	rt:	24-Nov-97
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	26-Nov-97
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD	ŗ		DICAR #:		
Ext. Meth:	Shake			Location #:	В	LDGS. 9030, 903
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3172.01	9030-S1	1.00	15.38	92.92	164	ND
3172.02	9030-S2	1.00	15.52	92.65	163	ND
3172.03	9030-DS	1.00	15.98	88.82	166	ND
3172.04	9030-E	1.00	15.66	88.65	169	ND
3172.05	9030-W	1.00	15.58	90.65	166	ND
3172.06	9030-N	1.00	15.26	96.48	160	ND
3172.07	9030-OBS(A)	1.00	15.46	91.50	166	ND
3172.08	9030-OBS(B)	1.00	15.82	90.17	165	ND
3172.09	9030-OBS(C)	1.00	16.03	92.86	158	ND
3172.10	9030-RF/VL	1.00	15.77	89.00	167	376.96
3172.11	9035-RF/VL	1.00	15.21	90.20	171	ND
METHOD BLANK	24-Nov-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

### APPENDIX D

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### UST DISPOSAL CERTIFICATE UST NO. 90029-15

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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

### CERTIFICATE OF NON-HAZARDOUS VESSEL

FACILITY: VESSEL:

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of <u>3:00</u> A.M./R.M. on <u>10</u> <u>8</u> <u>9</u> <u>9</u> <u>9</u>, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

fe Manager

Print or Type Name Here

### APPENDIX E

### WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-15

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### **GENERATOR CERTIFICATION**

I hereby certify to the best of my knowledge that the waste described on Hazardous Waste Manifest No. NHZOOBII4 dated II-G-97.

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: )Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- X723; Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: <u></u>

I am duly authorized to sign said certification.

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United States Army Fort Monmouth, New Jersey

## Underground Storage Tank Closure and Site Investigation Report

Building 9038 Camp Evans Area

NJDEP UST Registration No. 90029-16

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Table 2	Post-Excavation Soil Sampling Results

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### APPENDICES

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- Appendix CSoil Sample Analytical Data PackageAppendix DUST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

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### **EXECUTIVE SUMMARY**

### UST Closure

On February 19, 1998, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-16 (Fort Monmouth Identification No. 9038), was located south of Building 9038 in the Camp Evans area of Fort Monmouth. The UST was a 10,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the southern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the UST fill port. Samples collected at the time the UST was removed contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). The total amount of soil removed from the excavation was less than 5 cubic yards.

### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with several loads of 1.5-inch quarry processed stone (because the excavation was located in an asphalt driveway) and clean native soil from the Building 9038 area, as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then compacted and restored to its original condition (except for the asphalt paving which was to be taken care of by Fort Monmouth at a later date).

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-16 at Building 9038.

### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-16, was closed at Building 9038 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on February 19, 1998. The UST was a fiberglass 10,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-16 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-16 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

### 1.1 SITE DESCRIPTION

Building 9038 is located adjacent to Buildings 9036 and 9037 in the main section of the Camp Evans area of the Fort Monmouth Army Base, as shown in Figure 1. UST No. 90029-16 was located south of Building 9038 and associated piping ran approximately 16 feet north from the UST into Building 9038. The UST fill port area was located directly above the southern end of the tank. A site map is provided in Figure 1 showing the location of the UST removed relative to Building 9038.

### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. Before the decommissioning activities could proceed further, SMC had to break up and remove the concrete pad and transport the fragments to the soil staging area. Afterwards, all free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to removal because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and the purging and removal of the associated piping, soil excavation continued to uncover the UST. Because of the large size of the UST, SMC decided to remove the tank from the ground prior to opening and cleaning the tank in order to avoid a confined space entry situation. Once the UST was uncovered, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed by a vacuum truck from the Lorco Petroleum Company.

After the majority of the residual sludge in the UST had been removed, the UST was removed from the excavation, staged temporarily on the asphalt driveway, and examined for holes. No holes were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. After the inspection of the UST was completed, SMC transported the tank to Building 9352 where the tank was cut into sections for final cleaning (wiping the interior out with oil absorbent pads).

Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed except for soil located adjacent to the UST fill port. Visual and PID/FID soil screening was also performed along exposed piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results, visual observations, and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST fill port was contaminated. This soil was removed to the staging area for disposal off site at a later date. Afterwards, the excavation was backfilled with several loads of 1.5-inch-diameter quarry processed stone and then clean native soil, as well as clean imported soil, was placed in lifts and compacted with a vibratory roller (because the excavation was located in an asphalt parking lot).

### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359 NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

### 2.2 SOIL SAMPLING

On February 18 and 19, 1998, after the UST removal, post-excavation soil samples 9038N1, 9038N2 (Duplicate of 9038N1), 9038VL, 9038RF, 9038W1, 9038W2, 9038E1, 9038E2, 9038S1, 9038S2 (Duplicate of 9038S1), and 9038DS were collected from nine locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 11.5 to 12-feet below ground surface (bgs) (samples 9038N1 and 9038N2) and 12 to 12.5-feet bgs (samples 9038W1, 9038W2, 9038E1, 9038E2, 9038E1, and 9038S2). No bottom samples could be collected because of the concrete pad. Sample 9038DS was collected from next to Building 9038 along the former return/feed line piping length of the excavation, which was approximately 16 feet long. Sample 9038RF was collected from 2 to 2.5-feet bgs. Sample 9038VL was collected beneath the former vent line location at a depth of 7 to 7.5-feet bgs. In addition, samples 9038OBS1, 9038OBS2, and 9038OBS3 were collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from nine locations on February 18 and 19, 1998. All samples were analyzed for TPHC. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on February 18 and 19, 1998 from the UST excavation contained non-detectable concentrations of TPHC.

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9038 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-16 at Building 9038.

# Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

	wait rownship, new Jersey
P	Sample from the bottom of the exervation
	Samples from the west sidewall of the excavation
F	Samples from the east sidewall of the excavation
N	Samples from the porth sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the LIST
VI	Sample from beneath the former location of the vent line to the LIST
OBS	Sample from the overhurden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
·	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
00174	sample could be collected for both lines
SCN11	Sample collected at a location of suspected contamination
	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	l est pivtrench Herredous worte cres huilding (former logation)
	Hazardous waste area building (former location)
01054STB1	Above ground storage tank Sample collected at the former location of an AST at the specified building
	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Conper fubing run
CSP-1	Clean soil pile
• •	

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Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method	
	Odicolea		maan				
9038N1	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038N2	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038V/	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038RF	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038W1	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038W2	2/18/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038F1	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038E2	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
903851	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
903852	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038DS	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
90380BS1	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038OBS2	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9038OBS3	2/19/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025	

Table 1
Summary of Post-Excavation Sampling Activities
Building 9038, Camp Evans Area
Wall Township, New Jersey

.
							NJDEP Soil	
Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
000014	0054.04	0/40/00	2/40 20/02	TRUC	176	ND	10.000	No
903811	3331.01	2/10/90	2/19 - 20/90		120		10,000	No
9038N2	3351.02	2/18/98	2/19 - 20/96		109		10,000	No
9038VL	3351.03	2/18/98	2/19 - 20/98	TPHC	206	ND	10,000	INU
9038RF	3351.04	2/18/98	2/19 - 20/98	TPHC	178	ND	10,000	NO
9038W1	3351.05	2/18/98	2/19 - 20/98	TPHC	166	ND	10,000	No
9038W2	3351.06	2/18/98	2/19 - 20/98	TPHC	173	ND	10,000	No
9038E1	3351.07	2/19/98	2/19 - 20/98	TPHC	180	ND	10,000	No
9038E2	3351.08	2/19/98	2/19 - 20/98	TPHC	164	ND	10,000	No
003891	3351 00	2/10/08	2/19 - 20/98	TPHC	164	ND	10,000	No
000001	2251.00	2/10/08	2/10 _ 20/08	TPHC	167	ND	10,000	No
903032	3331.10	2/13/30	2/10 20/09	TPHC	168	ND	10,000	No
903805	3351.11	2/19/90	2/19 - 20/90		174		10,000	No
9038OBS1	3351.12	2/19/98	2/19 - 20/98		174		10,000	No
9038OBS2	3351.13	2/19/98	2/19 - 20/98	IPHC	167		10,000	INO N-
9038OBS3	3351.14	2/19/98	2/19 - 20/98	TPHC	171	ND	10,000	NO

#### Table 2 Post-Excavation Soil Sampling Results Building 9038, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





9038.DWG ASC 01/19/99

## APPENDIX A

# SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-16

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

	· ·								
	A. Facility Name: US Army, Fort Monmouth, Evans Area								
	Facility Street Address: Build	ding 1207, DCSOPS-BID							
	Municipality: <u>Wall Township</u>	o County : <u>Monmouth</u>							
1000 - 10 - 10 - 10 - 10 - 10 - 10 - 10	Block: 240, 241 and 242	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02							
	Telephone Number : (732) 23	9-2427							
	B. Owner (RP)'s Name: U	S Army, CECOM							
	Street Address: DCSOPS-E	BID, Bldg. 1207 City : Fort Monmouth							
and the second state	State: <u>NJ</u> Zip: 07703 Telephone Number : (732) 532-5052								
	C. (Check as appropriate)	<b>D.</b> (Complete all that apply)							
	• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>							
	Report (SIR) \$500 Fee	Incident Report Number (10 or 12 digits):							
	Remedial     Investigation     Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>								
وسيا المساعد ومشارعها الماري	Report (RIR) \$1000 Fee								
	E. Certification by the Subsurface Evaluator:								
	The attached report conforms to the specific reporting requirements of N_LAC_7/26E · Ves								
	Name: Kevin I Phelan Signature: V a h T and T Phelana UST Cort No. 0019436								
	Firm: Tetra Tech FM Inc	Firm's UST Cert. Number: US00457							
	Firm Address: 1 Bank Stre	et Suite 103 City: Bockaway							
	State: M1 Zin: 07	$\frac{366}{100} = \frac{100}{100} $							
	State: NJ ZIP: 07866 Lelephone Number : (973) 9830507, Ext. 230								

State: <u>1</u> (NOTE et seq.)	VJ       Zip: 07866       Telephone Number : (973) 9830507, Ext. 230         : Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10
<b>F.</b> Ce	ertification by the Responsible Party(ies) of the Facility: lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as folio
	- i
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A conv of the resolution, certified as a true conv by the secretary of the corporation, shall be
2. 3.	submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is tr accurate, and complete. I am aware that there are significant civil penalties for knowingly submit false, inaccurate, or incomplete information and that I am committing a crime of the fourth degre make a written false statement which I do not believe to be true. I am also aware that if I knowin direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	$\rho / \rho$
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: November 30, 2000

## APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-16



PHOTO 1: View of SMC and Lorco personnel removing oil residue/sludge from the interior of UST-9038 (looking south/southeast).



PHOTO 2: View of UST-9038 being removed from the ground (looking northwest).



PHOTO 3: View of sampling activities in the UST-9038 excavation.



PHOTO 4: Cleaned sections of UST-9038 staged temporarily in Building 9352 prior to being crushed in "roll off" container for ultimate disposal.

#### APPENDIX C

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# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-16

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

Client :	U.S. Army			Lab. ID # :	3351	
	DPW. SELFM-	PW-EV		Date Rec'd:		19-Feb-98
	Bldg. 173			Analysis Sta	rt:	19-Feb-98
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	20-Feb-98
Analysis:		UST Reg. #:				
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD	r		DICAR #:		
Ext. Meth:	Shake			Location #:		Bldg 9038
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3351.01	9038-N1	1.00	15.57	85.95	176	ND
3351.02	9038-N2	1.00	15.10	82.22	189	ND
3351.03	9038-VL	1.00	15.13	75.38	206	ND
3351.04	9038-RF	1.00	15.78	83.90	178	ND
3351.05	9038-W1	1.00	15.95	88.67	166	ND
3351.06	9038-W2	1,00	15.31	88.97	173	ND
3351.07	9038-E1	1.00	15.28	85.42	180	ND
3351.08	9038-E2	1.00	15.43	93.04	164	ND
3351.09	9038-S1	1.00	15.61	91.93	164	ND
3351.10	9038-S2	1.00	15.36	91.36	167	ND
3351.11	9038-DS	1.00	15.04	92.73	168	ND
3351.12	9038-OBS1	1.00	15.36	87.87	174	ND
3351.13	9038-OBS2	1.00	15.76	89.39	167	ND
3351.14	9038-OBS3	1.00	15.56	88.40	171	ND
				<u> </u>		
					Ĺ	
METHOD BLANK	19-Feb-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

#### APPENDIX D

# UST DISPOSAL CERTIFICATE UST NO. 90029-16

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· · · ·	En trintig sour	NEONDER (TEM & BUN34
• .	STRÂIGHT BILL OF LADING ORIGINAL - NOT NEGOTIABLE	· 037
•	SMC ENVIRONMENTAL SERVICES GROUP	Uole
•	1861 Wayside Road wi Building 903	f Evans
	In the second se	
	-O	
	1-10,000 Gallon U.S.T	
	Building# 7038	
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	"We why the desiders Handle us defined in the start of Participations." DATE May 10 19 9 8	d. P.I.). Ben 2944, Startard, CT 98944-2844
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See.

SMC Environmental Services Group A Subsciery of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 2/19/92, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel they eling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

: :

Manager

Print or Type Name Here

#### APPENDIX E

# WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-16

# 23141/820 4-1241423

#### SHIPPING INFORMATION

#### SERVICE SECTION

SALES CODE 40500 LOSED OL SEMOVAL STATES AND A CONTRACT AND A 40300 HANTEFFEZZE BEMOVAL TO THE AND A CONTRACT OF A CONTRACT JOPOO TISED ON FILTER PEMOVAL STITUTES AND A CARACTER AND A ADSOLL IDILY WATER DISPOSALISES MARKADE 7 2015 M 28 H 25 S COLLAR ARE SHOWN TO A SHOWN A0502 SLIDGE DISPOSAL ST A SALES AND A SAL 

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#### PAYMENT RECEIVED SECTION

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÷			LORCO					-	
		RD, 1, BO	X 5A - OLD BRIDGE, NJ	08857					
	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US E N. ブ. ス. イ. し	EPA ID No. ノロ、ユン、ス、ノ、ゲ	Manifest Document No 0.1007.7	2. Page 1 of	N	IHZ	01067	79
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ITI	11. Jo STAN FAILON DED	73 ATT 57	SELEM-PW	-EV.					
	4. Generator's Phone(フラン)ジョスーム	123	ا مران المهرية الي المهم . 	Eat to Car		_			
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	16. GENERATOR'S CERTIFICATION: I certify the	materials described abov	ve on this manifest are not s	subject to federal regul	lations for rep	orting pro	per dispo	sal of Hazardous Wi	aste.
	XI have Applyby	، <i>مشر- این تم <u>ک</u> کح</i> کے	Signature	20	$\frown$			Month Day こと	, Year 3 55
τ	17. Transporter 1 Acknowledgement of Receipt of	Materials			<i>i</i> .			<u>.</u>	<u> </u>
B	Printed/Typed Name		Signature					Month Day	Year
NS P	( UICC							<u> </u>	17:2
ģ	18. Transporter 2 Acknowledgement of Receipt of	Materials	<u> </u>		-				
E E E	Printed/Typed Name		Signature .		~			Month Da	y Year
FAC	19. Discrepancy Indication Space	alal of years and a							
	20. Facility Owner or Operator: Certification of rec	eipt of waste materials	covered by this manifest	except as noted in					
ľ	Printed/Typed Name		Signature					Month Da	y Year
1 4		GE	NERATOR'S COP	Y					er en



# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No.  $\underline{NH20100?9}$  dated  $\underline{2.1979}$ , is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results:_____PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. ARmy Communication. Electronics Common Camp Evens Anu
Generator's EPA ID No. <u>NJ. 3210020324</u>
Address ATTN SLEAM AW-EN FONT NOUMETH. NJ. 07703
Print Name Charles Applely Signature Signature
Title ENV. Pro Spc. SELFM-PW-EN
Date 2.19.48

572

United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9041 Camp Evans Area

NJDEP UST Registration No. 90029-17

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#### APPENDICES

- Appendix ASigned Site Assessment SummaryAppendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data PackageAppendix DUST Disposal CertificateAppendix EWaste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### **UST** Closure

On January 27, 1998, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-17 (Fort Monmouth Identification No. 9041), was located west of Building 9041 in the Camp Evans area of Fort Monmouth. The UST was a 10,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the southern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and no evidence of contaminated soil was observed. Samples collected at the time the UST was removed contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). No soil was removed from the excavation.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with several loads of quarry processed stone (because the excavation was located in an asphalt parking lot) as well as stockpiled clean overburden soil and clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then compacted and restored to its original condition (except for the asphalt paving which was to be taken care of by Fort Monmouth at a later date).

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-17 at Building 9041.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-17, was closed at Building 9041 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on January 27, 1998. The UST was a fiberglass 10,000-gallon tank containing No. 2 fuel oil. A site location map is provided in Figure 1.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-17 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no historical discharges are associated with UST No. 90029-17.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9041 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard) as shown in Figure 1. UST No. 90029-17 was located west of Building 9041 and associated piping ran approximately 12 feet north/east to a concrete utility passageway that led from the UST into Building 9041. The UST fill port area was located directly above the southern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9041.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. Before the decommissioning activities could proceed further, SMC had to break up and remove the concrete pad and transport the fragments to the soil staging area. Afterwards, all free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to removal because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and purging of the associated piping, soil excavation continued to uncover the UST. Because of the large size of the UST, SMC decided to remove the tank from the ground prior to opening and cleaning the tank in order to avoid a confined space entry situation. Once the UST was removed and temporarily staged on the asphalt driveway, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was removed from the excavation, it was examined for holes. No holes were observed by the Tetra Tech subsurface evaluator (except for a small hole that occurred after the UST was removed from the ground). Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed. Visual and PID/FID soil screening was also performed along exposed piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, no contaminated soil was present in the excavation. SMC attempted to backfill the excavation with the clean native soil; however, due to rainwater collecting in the excavation, the clean native soil had to be removed to the soil staging area to be stockpiled and dried out (for later use as backfill material for other excavations). As a result, the excavation first had to be backfilled with several loads of quarry processed stone and then clean imported soil were placed in lifts and compacted with a vibratory roller (because the excavation was located in an asphalt parking lot).

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

 Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
   NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and the associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

#### 2.2 SOIL SAMPLING

On January 29, 1998, after the UST removal, post-excavation soil samples 9041S1, 9041S2 (Duplicate of 9041S1), 9041DS, 9041W1, 9041W2, 9041N, 9041VL, and 9041R/F were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations (Samples were not collected from the east side of the excavation at the time due to the possibility that further soil excavation would cause soil slumping and undermine/rupture a utility on that side of the excavation). Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 10.5 to 11-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9041DS was collected beneath the 9041S1 and 9041S2 sample location from 11.5 to 12-feet bgs. Sample 9041R/F was collected from next to the location where the former return/feed line piping length entered the concrete utility passageway leading into the Building 9041 Furnace Room. Sample 9041R/F was collected from 1 to 1.5-feet bgs. In addition, samples 9041OBS1, 9041OBS2, and 9041OBS3 were collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Analytical results for the original post-excavation samples revealed that no contamination was present in the areas that were sampled. As a result, on February 17, 1998, Tetra Tech and SMC backfilled the majority of the existing excavation and then excavated the proposed sampling locations on the east side of the former UST location and collected post-excavation soil samples 9041E1, 9041E2 (Duplicate of 904E1), 9041E3, and 9041CNFRM1 were collected from a total of three sampling locations. The sidewall samples were collected from 10.5 to 11-feet bgs. Sample 9041CNFRM1 was collected from an area of suspected contamination (based on visual observations) from 8.5 to 9-feet bgs. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on January 29, 1998 and three locations on February 17, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on January 29, 1998 and February 17, 1998 from the UST excavation contained non-detectable concentrations of TPHC.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9041 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-17 at Building 9041.

#### Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
ONCOM	the sample was collected
	Contirmatory sample to contirm that contamination has been removed
	Another designation for a confirmatory sample
R/F/VL	Return/reed/vent lines. Used at buildings where the return/reed lines and the vent lines were located close together and one sample could be collected for both lines.
SCNT1	Sample collected at a location of suspected contamination
(W)F1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test nit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
			u <del>.</del>			
9041S1	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
904152	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041DS	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041W1	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041W2	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041N	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041R/F	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
90410BS1	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
90410BS2	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041OBS3	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041	1/29/98	1/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041E1	2/17/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041E2	2/17/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041CNFRM1	2/17/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9041E3	2/17/98	2/19/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities
Building 9041, Camp Evans Area
Wall Township, New Jersey

						NJDEP Soil		
Sampie ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Anaiytical Method Used	Method Detection Limit (mg/kg)	Resuit (mg/kg)	Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
				·			40.000	
9041S1	3305.01	1/29/98	1/30/98	TPHC	170	ND	10,000	INO
9041S2	3305.02	1/29/98	1/30/98	TPHC	167	ND	10,000	NO
9041DS	3305.03	1/29/98	1/30/98	TPHC	169	ND	10,000	No
9041W1	3305.04	1/29/98	1/30/98	TPHC	165	ND	10,000	No
9041W2	3305.05	1/29/98	1/30/98	TPHC	157	ND	10,000	No
9041N	3305.06	1/29/98	1/30/98	TPHC	165	ND	10,000	No
0041R/F	3305.07	1/29/98	1/30/98	TPHC	173	ND	10,000	No
00/10RS	3305.08	1/29/98	1/30/98	TPHC	169	ND	10,000	No
00410BS	3305.00	1/29/98	1/30/98	TPHC	177	ND	10,000	No
9041003	3305 10	1/29/98	1/30/98	TPHC	169	ND	10,000	No
9041063	2205 11	1/20/08	1/30/98	TPHC	178	ND	10,000	No
904171	2202.11	2/17/09	2/10/08	TPHC	164	ND	10.000	No
9041E1	3345.01	2/17/09	2/10/08	TPHC	166	ND	10,000	No
9041E2	3345.02	2/11/90	2/19/90	TDHC	173	ND	10.000	No
9041CNFRM1	3345.03	2/17/98	ZI 19/90		176		10,000	No
9041E3	3345.04	2/17/98	2/19/98	IPHC	170	ND	10,000	

#### Table 2 Post-Excavation Soil Sampling Results Building 9041, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





## APPENDIX A

# SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-17

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

<b>A.</b> Facility Name: <u>US Arm</u>	ny, Fort Monmouth, Evans Area					
Facility Street Address: Building 1207, DCSOPS-BID						
Municipality: Wall Township County: Monmouth						
Block: 240, 241 and 242 Lo	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02					
Telephone Number : (732) 23	9-2427					
<b>B.</b> Owner (RP)'s Name: U	S Army, CECOM					
Street Address: DCSOPS-BID, Bidg. 1207 City : Fort Monmouth						
State: NJ Zip: 07703 Telephone Number : (732) 532-5052						
C. (Check as appropriate)	<b>D.</b> (Complete all that apply)					
Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>					
Report (SIR) \$500 Fee	<ul> <li>US1 Registration Number : (7 digits): 90029 - 1 7</li> <li>Incident Report Number (10 or 12 digits):</li> </ul>					
Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>					
Report (RIR) \$1000 Fee						
E. Certification by the Sul	bsurface Evaluator:					
The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes					
Name: Kevin J. Phel	an Signature: <u>Kenin J. Phalan</u> UST Cert. No.: 0018436					
Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457					
Firm Address: <u>1 Bank Stre</u>	et, Suite 103 City: Rockaway					
State: <u>NJ</u> Zip: <u>07</u>	866 Telephone Number : (973) 9830507, Ext. 230					

State:	NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230
(NOTE et seq.	: Certification numbers required only if work was conducted on US1s regulated per N.J.S.A. 58:104 )
<u></u>	
<b>F.</b> c	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follow
1,	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submitted false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowingl direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703

### APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-17


PHOTO 1: View of UST-9041 being uncovered (looking north).



PHOTO 2: View of UST-9041 being removed from the ground (looking north/northwest).



PHOTO 3: View of sampling locations in the UST-9041 excavation (looking south).



PHOTO 4: View of cleaned sections of UST-9041 awaiting staging in a roll off container for disposal off site.

#### APPENDIX C

## SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-17

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

Client :	U.S. Army			Lab. ID # :		3305
	DPW. SELFM-F	PW-EV		Date Rec'd:		30-Jan-98
	Bldg. 173			Analysis Start:		30-Jan-98
	Ft. Monmouth,	NJ 07703		Analysis Con	ıplete:	30-Jan-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARDI	1		DICAR #:		
Ext. Meth:	Shake			Location #:		Bldg 9041
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3305.01	S1(10.5-11)	1.00	15.37	89.68	170	ND
3305.02	S2(10.5-11)	1.00	15.49	90.86	167	ND
3305.03	DS(11.5-12)	1.00	15.53	89.62	169	ND
3305.04	W1(10.5-11)	1.00	15.74	90.41	165	ND
3305.05	W2(10.5-11)	1.00	15.55	96.37	157	ND
3305.06	N(10.5-11)	1.00	15.58	91.63	165	ND
3305.07	R/F(4.5-5)	1.00	15.74	86.07	173	ND
3305.08	OBS1(PILE)	1.00	15.25	91.05	169	ND
3305.09	OBS2(PILE)	1.00	15.57	85.46	177	ND
3305.10	OBS3(PILE)	1.00	15.84	87.80	169	ND
3305.11	VL(1-1.5)	1.00	15.67	84.34	178	ND
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METHOD BLANK	30-Jan-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client :	U.S. Army			Lab. ID # :		3345	
	DPW. SELFM-I	PW-EV		Date Rec'd:		18-Feb-98	
	Bldg. 173			Analysis Sta	rt:	19-Feb-98	
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	19-Feb-98	
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARDT			DICAR #:			
Ext. Meth:	Shake			Location #:		Bldg 9041	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3345.01	9041-E1	1.00	15.65	91.44	164	ND	
3345.02	9041-E2	1.00	15.68	90.51	166	ND	
3345.03	9041-CNFRM1	1.00	15.62	87.05	173	ND	
3345.04	9041-E3	1.00	15.02	88.96	176	ND	
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METHOD BLANK	18-Feb-98	1.00	15.00	100.00	157	ND	

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-17

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SMC Environmental Services Group A Subscience Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 1/28/98, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel received received. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

site Manager 1iP Print or Type Name Here

#### APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-17

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# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No. 09548 ______ dated _______,

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: 14 PPM - halogens.

I am duly authorized to sign said certification.

U.S. Army Communications Electronics Command	
Generator	
Generator's EPA ID No.	
Address Camp Evans Fires Fr. Mannecor , 10-5-, 0103	
Print Name_Charles Atteriory Signature	
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1-28-98	

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9045 Camp Evans Area

NJDEP UST Registration No. 90029-18

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Figure 2	<b>Building 9045 - UST Removal and Soil Sample Locations</b>

#### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### UST Closure

On January 5, 1998, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-18 (Fort Monmouth Identification No. 9045), was located west of Building 9045 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the southern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the fill port. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 303.69 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was 20 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9045 area and clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-18 at Building 9045.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-18, was closed at Building 9045 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on January 5, 1998. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-18 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-18 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9045 is the Radiation Safety Building located in the main section of the Camp Evans area of the Fort Monmouth Army Base as shown in Figure 1. UST No. 90029-18 was located west of Building 9045 and associated piping ran approximately 6 feet east from the UST to Building 9045. The UST fill port area was located directly above the southern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9045.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. No holes or punctures were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed or detected by the PID/FID except for soil located adjacent to the UST fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST fill port was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean excavated soil and imported clean fill were used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
  NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination at the time of the UST removal; however, soil adjacent to the UST fill port did exhibit indications of contamination and was transported to the soil staging area.

#### 2.2 SOIL SAMPLING

On January 5, 1997, after UST removal, post-excavation soil samples 9045B1, 9045B2 (Duplicate of 9045B1), 9045B3, 9045DS, 9045N, 9045E, 9045S, 9045W, 9045VL, and 9045RF were collected from nine locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location, and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 6.5 to 7-feet below ground surface (bgs). The sidewall samples were collected from 6 to 6.5-feet bgs. Sample 9045DS was collected beneath the 9045B3 sample location from 8 to 8.5-feet bgs. In addition, sample 9045VL was collected adjacent to Building 9045 at the former location of the vent line from 2 to 2.5-feet bgs. Sample 9045RF was collected from next to Building 9045 along the former return/feed line piping length of the excavation, which was approximately 6 feet long. Sample 9045RF was collected from 3 to 3.5-feet bgs. Lastly, samples 9045OBS1 and 9045OBS2 were collected from the overburden soil piles to verify that the piles were not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from nine locations on January 5, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on January 5, 1998, from the UST excavation, from below piping associated with the UST, and from the overburden soil piles contained concentrations of TPHC ranging from non-detect to 303.69 milligrams per kilograms (mg/kg).

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9045 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-18 at Building 9045.

#### Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

· · ·	······································
в	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed above)
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil")
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where the sample was collected
CNERM	Confirmatory sample to confirm that contamination has been removed
CNEM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9045OBS1	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045OBS2	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045B1	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045B2	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045B3	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045DS	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045N	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045E	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045S	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045W	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045VL	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9045RF	1/5/98	1/6/98	Soil	Post-Excavation	TPHC	oqa-qam-025

Table 1	
Summary of Post-Excavation Sampling Activities	•
Building 9045, Camp Evans Area	
Wall Township, New Jersey	

Note:

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Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9045OBS1	3265.01	1/5/98	1/6 - 7/98	трнс	181	ND	10.000	No
90450BS2	3265.02	1/5/98	1/6 - 7/98	TPHC	179	ND	10,000	No
9045B1	3265.03	1/5/98	1/6 - 7/98	TPHC	156	ND	10,000	No
9045B2	3265.04	1/5/98	1/6 - 7/98	TPHC	165	ND	10.000	No
9045B3	3265.05	1/5/98	1/6 - 7/98	TPHC	162	ND	10,000	No
9045DS	3265.06	1/5/98	1/6 - 7/98	TPHC	166	ND	10,000	No
9045N	3265.07	1/5/98	1/6 - 7/98	TPHC	161	ND	10,000	No
9045E	3265.08	1/5/98	1/6 - 7/98	TPHC	165	ND	10,000	No
9045S	3265.09	1/5/98	1/6 - 7/98	TPHC	163	ND	10,000	No
9045W	3265.10	1/5/98	1/6 - 7/98	TPHC	165	ND	10,000	No
9045VL	3265.11	1/5/98	1/6 - 7/98	TPHC	177	303.69	10,000	No
9045RF	3265.12	1/5/8	1/6 - 7/98	TPHC	180	ND	10,000	No

Table 2 Post-Excavation Soil Sampling Results Building 9045, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





#### APPENDIX A

## SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-18

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name	US Army, Fort Monmouth, Evans Area						
Facility Street Address: Building 1207, DCSOPS-BID							
Municipality: <u>Wall T</u>	ownship County : Monmouth						
Block: 240, 241 and	242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04); 241 (1), 242 (1.01 & 1.02						
Telephone Number :	(732) 239-2427						
B. Owner (RP)'s	B. Owner (RP)'s Name: US Army, CECOM						
Street Address: DC	Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth						
State: <u>NJ</u> Zip: <u>O</u>	State: NJ Zip: 07703 Telephone Number : (732) 532-5052						
C. (Check as appro	oriate) <b>D.</b> (Complete all that apply)						
Site Investig	• Assigned Case Manager : <u>Mr. Ian Curtis</u>						
Report (SIR) \$500 Fe	UST Registration Number : (7 digits): 90029 - <u>18</u> Incident Report Number (10 or 12 digits):						
Remedial Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u> c						
Report (RIR) \$1000 F	ee e						
E. Certification b	/ the Subsurface Evaluator:						
The attache	d report conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes						
Name: Kevin J. Phelan Signature: Kerrin J. Phalan UST Cert. No.: 0018436							
Firm: Tetra Tech EM, Inc. Firm's UST Cert, Number: US00457							
Firm Address: 1 Ba	Firm Address: 1 Bank Street, Suite 103 City: Rockaway						
State: NJ	State: NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230						

(NOTE et seq.	: Certification numbers required only if work was conducted on US is regulated per 11.5.5.4. 55.10
<b>F.</b> c	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follo
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
2. 3.	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"I certify under penalty of law that I have personally examined and am familiar with the informatic submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is tr accurate, and complete. I am aware that there are significant civil penalties for knowingly submit false, inaccurate, or incomplete information and that I am committing a crime of the fourth degre make a written false statement which I do not believe to be true. I am also aware that if I knowin direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area       NJDEP Subsurface Evaluator # 2056
	Signature:
-	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: November 30, 2000

### APPENDIX B

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## PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-18



PHOTO 1: View of UST-9045 after cleaning (looking southeast).



PHOTO 2: View of UST-9045 being removed from the ground (looking south/southwest).



PHOTO 3: View of sampling locations in the UST-9045 excavation (looking north/northeast).



PHOTO 4: View of UST-9045 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

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# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-18

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

Client:	U.S. Army			Lab. ID # :		3265
	DPW. SELFM-I	PW-EV		Date Rec'd:		06-Jan-98
	Bldg. 173			Analysis Sta	rt:	06-Jan-98
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	07-Jan-98
Analyzis	004-04M-025			UST Reg. #:		
Matrix.	Soil			Closure #:		
Analyst:	D.DEINHARD'	P		DICAR #:		
Ext. Meth:	Shake	-		Location #:		Bldg. 9045
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3265.01	9045-OBS1	1.00	15.02	86.53	181	ND
3265.02	9045-OBS2	1.00	15.29	85.71	179	ND
3265.03	9045-B1	1.00	15.85	95.05	156	ND
3265.04	9045-B2	1.00	15.36	92.78	165	ND
3265.05	9045-B3	1.00	15.49	93.57	162	ND
3265.06	9045-DS	1.00	15.05	94.21	166	ND
3265.07	9045-N	1.00	15.61	93.58	161	ND
3265.08	9045-E	1.00	15.26	93.26	165	ND
3265.09	9045-S	1.00	15.35	93.73	163	ND
3265.10	9045-W	1.00	15.15	93.98	165	ND
3265.11	9045-VL	1.00	15.64	84.70	177	303.69
3265.12	9045-RF	1.00	15.42	84.48	180	ND
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METHOD BLANK	6-Jan-98	1.00	15.00	100.00	157	ND

ND = Not Detected MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

#### APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-18

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SMC Environmental Services Group A Subscience Management Corporation

P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

CERTIFICATE OF NON-HAZARDOUS VESSEL FACILITY: VESSEL:

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 1/5/90, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

nie Is Isite Manager

Print or Type Name Here
#### APPENDIX E

## WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-18

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#### SERVICE SECTION

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4. Generator's Phone ( )	6. US EPA ID Number	A.	Transporter's	Phone		-
LIONETTI OIL RECOVERY CO INC		0.6.4	908	/21~()9	900	
7. Transporter 2 Company Name		· · _ · _ ·				
9. Designated Facility Name and Site Address LIONETTI OIL RECOVERY CO INC DBA L RUNYON&CHEESEQUAKE RDS OLD BRIDGE, NJ 08857	LORCO PETROLEUM SVCS	c. 1, 0, 6, 4	Facility's Pho 908 72	ne 1-090(	)	
11. Waste Shipping Name and Description			12. C	ontainers	13. Total	14. Unit
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# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No. 09548 dated 1-28-98,

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: MA PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. Army Communications Electronics Command
Generator's EPA ID No. NJ 321 00 20 324
Address Camp Evans Area FT. Monmouth, N.J., 07703
Print Name Charles Apploy Signature
Title Envi Prot. per. SELPM-Ph-EV
Date

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9047 Camp Evans Area

NJDEP UST Registration No. 90029-19

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#### APPENDICES

- Appendix ASigned Site Assessment SummaryAppendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data PackageAppendix DUST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### UST Closure

On February 27, 1998, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-19 (Fort Monmouth Identification No. 9047), was located north of Building 9047 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). One hole approximately 0.125-inch in diameter was noted in the UST and evidence of potentially contaminated soil was observed above and surrounding the tank. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 299.27 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was 15 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-19 at Building 9047.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-19, was closed at Building 9047 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on February 27, 1998. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-19 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one historical discharge was associated with UST No. 90029-19 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9047 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Area "G"), as shown in Figure 1. UST No. 90029-19 was located north of Building 9047 and associated piping ran approximately 10 feet south from the UST to Building 9047. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9047.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. One hole approximately 0.125-inch in diameter was observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Evidence of contamination was observed or detected by the PID/FID in soil located adjacent to the UST. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST was contaminated. This soil was removed to the staging area for disposal off site at a later date and imported clean fill was used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST did exhibit evidence of potential contamination at the time of the UST removal and was transported to the soil staging area; however, soil adjacent to the associated piping as well as the UST excavation sidewalls and bottom did not exhibit indications of contamination.

#### 2.2 SOIL SAMPLING

On February 27, 1998, after UST removal, post-excavation soil samples 9047B1, 9047B2 (Duplicate of 9047B1), 9047B3, 9047E, 9047S, 9047N, 9047W, and 9047R/F/VL were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location, and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 5.5 to 6-feet below ground surface (bgs). The sidewall samples were collected from 5 to 5.5-feet bgs. Sample 9047R/F/VL was collected from next to Building 9047 along the former return/feed line piping length of the excavation, which was approximately 10 feet long. Sample 9047R/F/VL was collected from 1 to 1.5-feet bgs. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on February 27, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on February 27, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC ranging from non-detect to 299.27 milligrams per kilogram (mg/kg).

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9047 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-19 at Building 9047.

#### dentifications نا Legend of Samp Camp Evans Area Wall Township, New Jersey

• •	
В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soli located beneath the fill port of the tank ("Beneath Fill Port")
9110032	Contaminated soil pile from the UST-9110 excavation
01068E1A	Deep Sample Cooprobe boring performed on the east side of the LIST-0106 excavation to investigate contamination from the leaking LIST. Last
SISODLIA	number denotes the boring number and last letter indicates which sample in the sequence
REL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
ASI	Above ground storage tank
9100ASTB1	Sample collected at the former location of an AST at the specified building
SD	Some collected from a storm drain
SW	Sample collected from a signification
CTR	Copper tubing run
CSP-1	Clean soil nile

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
9047R/FA/I	2/27/98	3/2/98	Soil	Post-Excavation	ТРНС	OQA-QAM-025
9047B1	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047B2	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047B3	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047E	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047S	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047N	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9047W	2/27/98	3/2/98	Soil	Post-Excavation	TPHC	oqa-qam-025

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
							10.000	
9047R/F/VL	3377.01	2/27/98	3/2 - 3/98	TPHC	177	299.27	10,000	NO
9047R1	3377.02	2/27/98	3/2 - 3/98	TPHC	172	ND	10,000	No
004782	3377 03	2/27/98	3/2 - 3/98	TPHC	167	ND	10,000	No
3047D2	2277 04	2/27/08	3/2 - 3/08	TPHC	170	ND	10.000	No
904783	3377.04	2/21/30	2/2 2/00		164	ND	10,000	No
90475	3377.05	2121198	3/2 - 3/90		470		10,000	No
9047S	3377.06	2/27/98	3/2 - 3/98	TPHC	172	ND	10,000	NU No
9047N	3377.07	2/27/98	3/2 - 3/98	TPHC	171	ND	10,000	INO
9047W	3377.08	2/27/98	3/2 - 3/98	TPHC	164	ND	10,000	No

Table 2
Post-Excavation Soil Sampling Results
Building 9047, Camp Evans Area
Wall Township, New Jersey

Note:

Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria. *

ND

Not detected Total petroleum hydrocarbons TPHC



9047.DWG ASC 01/19/99



9047.DWG ASC 01/19/99

#### APPENDIX A

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### SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-19

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area					
Facility Street Address: Build	ding 1207, DCSOPS-BID				
Municipality: <u>Wall Townshir</u>	2 County : <u>Monmouth</u>				
Block: 240, 241 and 242 L	ot(s): <u>240 (55.01, 55.02, 55.03 &amp; 55.04), 241 (1), 242 (1.01 &amp; 1.02</u>				
Telephone Number : (732) 23	9-2427				
B. Owner (RP)'s Name: U	S Army, CECOM				
Street Address: DCSOPS-E	3ID, Bldg. 1207 City : Fort Monmouth				
State: <u>NJ</u> Zíp: <u>07703</u>	Telephone Number : (732) 532-5052				
C. (Check as appropriate)	<b>D.</b> (Complete all that apply)				
• Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>				
Report (SIR) \$500 Fee	<ul> <li>US1 Registration Number : (7 digits): 90029 - 19</li> <li>Incident Report Number (10 or 12 digits):</li> </ul>				
Remedial     Investigation     Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>					
Report (RIR) \$1000 Fee					
E. Certification by the Subsurface Evaluator:					
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E · Yes					
Name: Kevin J. Phel	Name: Kevin J. Phelan Signature: <u>Kerrin J. T-Lolan</u> UST Cert. No.: 0018436				
Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457				
Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway				
State: NJ Zip: 07	866 Telephone Number : (973) 9830507, Ext. 230				

(NOTE et seq.)	: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10
<b>F.</b> Ce	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as folic
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
2. 3.	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is the accurate, and complete. I am aware that there are significant civil penalties for knowingly submit false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowing direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
·	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: November 30, 2000

#### APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-19



PHOTO 1: View of the cleaned interior of UST-9047 (looking south/southwest).



PHOTO 2: View of UST-9047 being removed from the ground (looking south/southwest).



PHOTO 3: View of the sampling locations in the UST-9047 excavation (looking east).



PHOTO 4: View of UST-9047 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

## SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-19

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

Client:	U.S. Army			Lab. ID # :		3377
	DPW. SELFM-J	PW-EV		Date Rec'd:		27-Feb-98
	Bldg. 173			Analysis Sta	rt:	02-Mar-98
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	03-Mar-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD7	ſ		DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9047
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3377.01	9047-R/F/VL	1.00	15.38	86.26	177	299.27
3377.02	9047-B1	1.00	15.23	89.69	172	ND
3377.03	9047-B2	1.00	15.52	90.79	167	ND
3377.04	9047-B3	1.00	15.38	90.13	170	ND
3377.05	9047-E	1.00	15.63	91.49	164	ND
3377.06	9047-S	1.00	15.45	88.22	172	ND
3377.07	9047-N	1.00	15.16	90.76	171	ND
3377.08	9047-W	1.00	15.51	92.38	164	ND
				<u> </u>		
· · · · · · · · · · · · · · · · · · ·						
			<u> </u>			
METHOD BLANK	2-Mar-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

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Daniel K. Wright Laboratory Director

### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-19

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#### SMC Environmental Services Group A Subschary of Sciences Management Corporation

P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 2/21/92, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

Manager

Print or Type Name Here

#### APPENDIX E

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WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-19

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#### SHIPPING INFORMATION

#### SERVICE SECTION

DESCRIPTION CODE MATTHEEZE DE MOVACTOR SERVICE STATES AND A CONTRACTOR AND A CONTRACTOR AND A CONTRACTOR AND A CONTRACTOR AND A 40300 4050L TOILY WATER DISPOSAL IN 2020 AND SHEET OF AT DOT T CASOCINE WATER STATISTICS AND A TISOT THEM DISPOSAL CONTRACTOR OF THE DATA OF T

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#### PAYMENT RECEIVED SECTION

CHARLES MICHAERECENT

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WASTE MANIFEST     M 7 2- / 0.0 2.3 2 / 0702737     M NHZ ULUG19       # Bigging Mann and Might Antone, C. L. ()     C. C. Tran, Man, A. Mann, A. Man, A. Man, A. Man, A. Man, A. Mann, A. Man, A. Mann, M. Mannn, M. Mannn, M. M	NON-HAZARDOUS	1. Generator's US	EPA ID No.	Manifest	2. Page 1		01007	
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COMBUSTIALT. LIGUED INTERPORTATION PARTY     31     XXX313     3       b.     31     XXX313     3       c.     31     31     XXX313     3       c.     31     31     31     31     31       d.     31     31     31     31     31     31       15     Standard S	- PETROLEUM OIL (PETROLEUM O	15			-		1.1.1711	
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c.     Image: Stand St	h							
a.  bAdditional Description for Materials Linked Above  c	U.				1			
c.								
d.     E. Handling Codes for Wastes Listed Above       D_Additional Descriptions for Mainfals Listed Above     TO4 FILTRATION       I_MATER_1_Z     TO4 FILTRATION       I_Sample Harpellon Lagrangian     Sample Harpellon Lagrangian       I_Sample Harpellon Lagrangian     Sample Harpe		· · · · · ·						
d.     E. Handling Codes for Wastes Listed Above       T Definition of the second of the se								
d.     E. Handling Codes for Materials Listed Above       D_Additional Descriptions for Materials Listed Above     E. Handling Codes for Wastes Listed Above       T								
P. Additioned Descriptions for Materials Listed Above       E. Handling Codes for Wastes Listed Above         WATER_1_Z       TO4 FILTRATION         1s. Special Happing Instructions and Additional Information       TO4 FILTRATION         1s. General Happing Instructions and Additional Information       TO4 FILTRATION         1s. General TeleRENCY RESPONSE (1908), 721-0907       DECAL# 2008 3ERG#128 DEXIST KIT RESULTS (1.1537 KIT RESULTS (1.15	d							
O. Additional Descriptions for Materials Listed Above WATER 1       E. Handling Codes for Wastes Listed Above         NATER 1       Z       TO4 FILTRATION         15. Special Handling Light codes and Additional Information DECAL # 708 JERGE128 DEXSIL TEST KIT RESULTS 1.500 PM MANIFEST USED FOR TRACKING PURPOSES DNLY       TO4 FILTRATION         16. GENERATOR'S CERTIFICATION: Loanity the materials described above on this manifest are not subject to tegral regulations for reporting proper disposed of Hazandous Waste.       Month Day Vs Month Day Month Day Vs Month Day Vs Month Day Month Day M	-							1
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15.Special Handling Instructions and Additional Information 15.24 TIRE ENERGY OF SERVICES (1995) 721-0900 DECAL# 2083ERGE128 DESCRIPTINE TO THE SERVICES NILY         16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to tederal regulations for reporting proper disposal of Hazardous Waste.         PrintedTyped Name       Month Day Ye         17. Transporter 1 Acknowledgement of Receipt of Materials       Signature         PrintedTyped Name       Signature         Month Day Ye       Signature         PrintedTyped Name       Signature         PrintedTyped Name       Signature         Month Day Ye       Signature         Month Day Ye       Signature         Month Day Ye       Signature         Month Day Ye       Sign								
24 HR EALENGENCY RESPURISE/(SUCR) 7/21-05901         DECAL# 2083ERGE128 DEXSIL TEST XIT RESULTS (1000PM)         MANIFEST USED FOR TRACKING PURPOSES ONLY         16. GENERATOR'S CERTIFICATION: Learthy the materials described above on this manifest are not subject to fadrial regulations for reporting proper disposal of Hazardous Waste.         Printed/Typed Name       SELF:	15 Special Handling Instructions and Additional In	formation						
DECAL # 728 3ERG128 UEXS1: FEST XIT RESULTS (1500)         MANIFEST USED FOR TRACKING PURPOSES ONLY         16. GENERATOR'S CERTIFICATION: 1 certify the materials described above on this manifest are not subject to (edgrid regulations for reporting proper disposal of Hazardous Waste.         Printed/Typed Name       Month Day         17. Transporter 1 Acknowledgement of Receipt of Materials       Signature         Printed/Typed Name       Signature         Month Day       Yes         18. Transporter 2 Acknowledgement of Receipt of Materials       Signature         Printed/Typed Name       Signature         19. Discrepancy Indication Space       Signature         20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.         Printed/Typed Name       Signature         Printed/Typed Name       Signature	24 HR EMERGENCY RESPONSE	H908) 721-	0900	2014				
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	Printed/Typed Name	<b>-</b>	Signature					
	Printed/Typed Name	(	Signature	)PY		••		



## GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No.  $\underline{NH20X0(g?9)}$  dated  $\underline{QXQ(-98)}$ , is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results:_____PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. ARmy Communication. Electronics Common Camp Evans And
Generator's EPA ID No. HJ. 3210020320
Address ATTN SLEEP QUEE FORT NORMOTH. N.J. 07703
Print Name Charles Applely Signature
Title ENU. Pro Spen SELFM-PU-EU
Date ?

 $\sqrt{7}^{2}$ 

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9051 Camp Evans Area

NJDEP UST Registration No. 90029-21

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### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix D Violographie of Obli Coosarc Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### UST Closure

On February 25, 1998, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-21 (Fort Monmouth Identification No. 9051), was located north of Building 9051 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the eastern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). Three holes approximately 0.125-inch in diameter were noted in the UST and evidence of potentially contaminated soil was observed surrounding the tank. Samples collected at the time the UST was removed (and after slightly more than two truckloads of additional soil had been excavated) contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 547.82 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was approximately 30 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9051 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-21 at Building 9051.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-21, was closed at Building 9051 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on February 25, 1998. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-21 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one significant historical discharge was associated with UST No. 90029-21 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9051 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Area "G"), as shown in Figure 1. UST No. 90029-21 was located north of Building 9051 and associated piping ran approximately 9 feet south from the UST to Building 9051. The UST fill port area was located directly above the eastern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9051.
# 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to removal because of the low volatility of No. 2 fuel oil. After the purging of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was removed from the excavation, it was staged temporarily on asphalt, and examined for holes. Three holes approximately 0.125-inch in diameter were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Evidence of contamination was observed or detected by the PID/FID in soil located adjacent to the UST. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

# 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

# 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and visual observations, soil adjacent to the UST was contaminated. This soil was removed to the staging area for disposal off site at a later date and the excavated clean (overburden) soil and imported clean fill were used to backfill the UST excavation.

# 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST did exhibit evidence of potential contamination at the time of the UST removal and was transported to the soil staging area; however, soil adjacent to the associated piping as well as the UST excavation sidewalls and bottom did not exhibit indications of contamination.

# 2.2 SOIL SAMPLING

On February 27, 1998, after UST removal and excavation of slightly more than two truckloads of potentially contaminated soil, post-excavation soil samples 9051B1, 9051B2 (Duplicate of 9051B1), 9051B3, 9051E, 9051W, 9051S, 9051N, and 9051R/F/VL were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of and beneath the former UST location, and bottom samples were collected from directly beneath the former UST location, or 8.5 to 9-feet below ground surface (bgs). The sidewall samples were collected from 8 to 8.5-feet bgs. Sample 9051R/F/VL was collected from next to Building 9051 along the former return/feed line piping length of the excavation, which was approximately 9 feet long. Sample 9051R/F/VL was collected from 0.5 to 1-feet bgs. Sample 9051OBS was collected from the overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on February 25, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on February 25, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC ranging from non-detect to 547.82 milligrams per kilogram (mg/kg).

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9051 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-21 at Building 9051.

# Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

. • •	
В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	lest pit/trench
HWAB	Hazardous waste area building (former location)
ASI	Above ground storage tank
9100A51B1	Sample collected at the former location of an AST at the specified building
	Demonstration sample to document the extent of contamination
30 SW/	Sample collected from a storm dralling and some starting and store sto
	Connot tubing tun
	Copper tubing run
005-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
		0/07/00	Qail	Deet Execution	трис	000-00M-025
9051R/F/VL	2/25/98	2/27/98	Soll	Post-Excavation		OQA-QAM025
9051OBS	2/25/98	2/27/98	Soil	Post-Excavation	IPHC	OQA-QAM-U25
9051B1	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	oqa-qam-025
9051B2	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9051B3	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9051E	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9051W	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9051S	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	oqa-qam-025
9051N	2/25/98	2/27/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

-

Table 1
Summary of Post-Excavation Sampling Activities
Building 9051, Camp Evans Area
Wall Township, New Jersey

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
		· · · · · ·	<u></u>					
9051R/F/VL	3365.01	2/25/98	2/27/98	TPHC	200	547.82	10,000	No
9051OBS	3365.02	2/25/98	2/27/98	TPHC	178	ND	10,000	No
9051B1	3365.03	2/25/98	2/27/98	TPHC	168	ND	10,000	No
9051B2	3365.04	2/25/98	2/27/98	TPHC	175	ND	10,000	No
9051B3	3365.05	2/25/98	2/27/98	TPHC	161	ND	10,000	No
0051E	3365.06	2/25/98	2/27/98	TPHC	168	ND	10,000	No
0051W	3365.07	2/25/08	2/27/98	TPHC	168	ND	10,000	No
00519	3365.08	2/25/08	2/27/98	TPHC	176	ND	10.000	No
9051N	3365.09	2/25/98	2/27/98	TPHC	178	ND	10,000	No

# Table 2 Post-Excavation Soil Sampling Results Building 9051, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





9051.DWG ASC 01/19/99

# APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-21 (12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

	A. Facility Name: US Army, Fort Monmouth, Evans Area					
	Facility Street Address: Build	ding 1207, DCSOPS-BID				
	Municipality: Wall Township	o County : <u>Monmouth</u>				
1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Block: 240, 241 and 242 L	ot(s): 240 (55.01, 55.02, 55.03 & 55.04); 241 (1), 242 (1.01 & 1.02				
	Telephone Number : (732) 23	9-2427				
· · · · · · · · · · · · · · · · · · ·	<b>B</b> . Owner (RP)'s Name: U	S Army, CECOM				
	Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth					
	State: NJ Zip: 07703 Telephone Number : (732) 532-5052					
	C. (Check as appropriate)	<b>D.</b> (Complete all that apply)				
	• Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>				
	Report (SIR) \$500 Fee	<ul> <li>US1 Registration Number : (7 digits): 90029 - <u>A1</u></li> <li>Incident Report Number (10 or 12 digits):</li> </ul>				
	• Remedial Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>				
	Report (RIR) \$1000 Fee					
	E. Certification by the Su	bsurface Evaluator:				
	The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes				
	Name: Kevin J. Phel	an Signature: Karin J. Phelan UST Cert. No.: 0018436				
	Firm: Tetra Tech EM, Inc. Firm's UST Cert. Number: US00457					
	Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway				
	State: <u>NJ</u> Zip: <u>07</u>	866 Telephone Number : (973) 9830507, Ext. 230				
- 1						

State: I (NOTE et seq.)	<u>NJ</u> Zip: <u>07866</u> Telephone Number : <u>(973) 9830507, Ext. 230</u> : Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A )
<u></u>	
F. Ce	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follow
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is tru
	accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree
	make a written faise statement which I do not believe to be true. I am also aware that if I knowing
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703

# APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-21



PHOTO 1: View of the cleaned interior of UST-9051 (looking southeast).



PHOTO 2: View of UST-9051 being removed from the ground (looking west/southwest).



PHOTO 3: View of sampling locations in the UST-9051 excavation (looking east).



PHOTO 4: View of UST-9051 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

# APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-21

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

Client :	U.S. Army			Lab. ID # :		3365
	DPW. SELFM-H	PW-EV		Date Rec'd:		26-Feb-98
	Bldg. 173			Analysis Star	rt:	27-Feb-98
	Ft. Monmouth,	NJ 07703		Analysis Con	nplete:	27-Feb-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD'	[		DICAR #:		
Ext. Meth:	Shake			Location #:		Bldg 9051
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3365.01	9051-R/F/VL	1.00	15.05	78.06	200	547.82
3365.02	9051-OBS	1.00	15.19	87.01	178	ND
3365.03	9051-B1	1.00	15.96	87.76	168	ND
3365.04	9051-B2	1.00	15.32	87.74	175	ND
3365.05	9051-B3	1.00	15.72	93.08	161	ND
3365.06	9051-E	1.00	15.48	90.20	168	ND
3365.07	9051-W	1.00	15.55	90.19	168	ND
3365.08	9051-S	1.00	15.18	87.99	176	ND
3365.09	9051-N	1.00	15.08	87.75	178	ND
					· · · · ·	
					1	
						_
METHOD BLANK	26-Feb-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

.

Daniel K. Wright Laboratory Director

# APPENDIX D

# UST DISPOSAL CERTIFICATE UST NO. 90029-21

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SMC Environmental Services Group A Subsediery of Science Management Corporation P.O. Box 859 Valley Forge. Pennsylvania 19482 Telephone (610) 265-2700

# CERTIFICATE OF NON-HAZARDOUS VESSEL

FACILITY: VESSEL:

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 223/98, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

# SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

SMC ENVIRONMENT

SEK

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te Manager

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Print or Type Name Here

# APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-21

# 231101/1211281201142

### SHIPPING INFORMATION

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# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No.  $\underline{NH2010679}$  dated  $\underline{2.198}$ ,

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results:_____PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. ARMY Communication. Electronics Common Camp Eases An	211.
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United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9053 Camp Evans Area

NJDEP UST Registration No. 90029-22

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Table 2	Post-Excavation Soil Sampling Results

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Figure 1	Building 9053 - UST Removal Location Map
Figure 2	Building 9053 - UST Removal and Soil Sample Locations

# APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure

- Appendix DFilotographs of OST ClosureAppendix CSoil Sample Analytical Data PackageAppendix DUST Disposal CertificateAppendix EWaste Manifest for Off-site Transport of UST Contents

# EXECUTIVE SUMMARY

# UST Closure

On January 8, 1998, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-22 (Fort Monmouth Identification No. 9053), was located north of Building 9053 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the eastern end of the tank.

# Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). Two holes approximately 0.25-inches in diameter were noted in the UST and evidence of contaminated soil was observed surrounding the western end and the northwest corner of the tank. Samples collected from the eastern end and the center of the excavation at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 201.52 milligrams per kilogram (mg/kg); however, samples collected from the western end and the northwestern end and the northwestern corner of the excavation contained TPHC concentrations ranging from non-detect to 720.56 mg/kg and one of the samples of the overburden soil pile contained a concentration of 8,039.66 mg/kg TPHC. After additional soil was excavated and removed, TPHC concentrations in the remaining soil range from non-detect to 720.56 mg/kg. The total amount of soil removed from the excavation was approximately 70 cubic yards.

# Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

# Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-22 at Building 9053.

# 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-22, was closed at Building 9053 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on January 8, 1998. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-22 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one significant historical discharge was associated with UST No. 90029-22 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

### 1.1 SITE DESCRIPTION

Building 9053 is located in the southern portion of the main section of the Camp Evans area of the Fort Monmouth Army Base (near Area "G"), as shown in Figure 1. UST No. 90029-22 was located north of Building 9053 and associated piping ran approximately 5 feet south from the UST to Building 9053. The UST fill port area was located directly above the eastern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9053.

# 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged temporarily on asphalt, and examined for holes. Two holes approximately 0.25-inches in diameter were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Evidence of contamination was observed or detected by the PID/FID in soil located adjacent to the western end or the northwestern corner of the tank. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

# 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

## 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, overburden soil and soil adjacent to the western end and the northwestern corner of the tank was contaminated. This soil was removed to the staging area for disposal off site at a later date and imported clean fill was used to backfill the UST excavation.

# 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by Tecom-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

# 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the western end and the northwestern corner of the UST as well as the overburden soil, did exhibit evidence of contamination and was transported to the soil staging area; however, soil excavated from around the remainder of the UST, as well as the UST excavation sidewalls and bottom, did not exhibit indication of contamination at the time of the UST removal.

### 2.2 SOIL SAMPLING

On January 8, 1998, after UST removal, post-excavation soil samples 9053B1, 9053B2 (Duplicate of 9053B1), 9053B3, 9053E, 9053S, 9053VL, and 9053RF were collected from seven locations in the eastern and center portions of the UST excavation. Because of high PID readings, the western end of the UST excavation was not sampled until additional soil could be excavated. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location, and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 6 to 6.5-feet below ground surface (bgs). The sidewall samples were collected from 5.5 to 6-feet bgs. Sample 9053DS was collected from beneath the center of the former UST location from 7.5 to 8-feet bgs. Sample 9053VL was collected from 1 to 1.5-feet beneath the former location of the vent line. Sample 9053RF was collected from next to Building 9053 along the former return/feed line piping length of the excavation, which was approximately 5 feet long. Sample 9053RF was collected from 2 to 2.5-feet bgs. All samples were analyzed for TPHC and total solids.

Following the additional soil removal from the western end of the UST excavation on January 12, 1998, Tetra Tech and SMC collected post-excavation soil samples 9053B4, 9053(W)E1, 9053(W)E2 (Duplicate of 9053(W)E1), 9053 OBS1, 9053OBS2, 9053B5, 9053W, 9053S2, 9053N1, and 9053N2 from a total of seven sampling locations. Samples 9053B4 and 9053B5 were collected from the bottom of the western half of the excavation at depths of 9.5 to 10-feet bgs and 10 to 10.5-feet bgs, respectively. Samples 9053(W)E1 and 9053(W)E2 were collected from next to the original UST excavation from 9 to

9.5-feet bgs. Sample 9053W was collected from the western end of the excavation at a depth of 9.5 to 10-feet bgs. Sample 9053S2 was collected from the south side of the western half of the excavation at a depth of 9.5 to 10-feet bgs. Samples 9053N1 and 9053N2 were collected from the north side of the western half of the excavation. Sample 9053N1 was collected at a depth of 7.5 to 8-feet bgs and sample 9053N2 was collected at a depth of 5.5 to 6-feet bgs. In addition, samples 9053OBS1 and 9053OBS2 were collected from the overburden soil to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Analytical results for the post-excavation samples collected from the original portion of the UST excavation revealed TPHC concentrations ranging from non-detect to 201.52 milligrams per kilogram (mg/kg); however, analytical results for the post-excavation samples collected from the western half of the excavation revealed 8,039.66 mg/kg TPHC at the 9053OBS2 sample location (which had been excavated from the western end of the excavation). This concentration exceeded 1,000 mg/kg TPHC, which is NJDEP's criterion for additional soil removal/remediation or for required VOC sampling. In addition, a work crew from TVS inadvertently backfilled the eastern end of the excavation with the overburden soil pile, including the contaminated portion where 9053OBS2 was collected, while repairing the water line to Building 9053 which had been disconnected while the excavation activities were underway. As a result, on February 13, 1998, Tetra Tech and SMC re-excavated the contaminated soil and collected post-excavation soil samples 9053CNFMB1, 9053CNFMB2 (Duplicate of 9053CNFMB1), 9053CNFME, 9053CNFMW, 9053CNFMS, and 9053CNFMN from a total of five sampling locations. All samples were collected from 7 to 7.5-feet bgs and were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on January 8, 1998, seven locations on January 12, 1998, and five sampling locations on February 13, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion

of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

One of the overburden soil pile samples collected on January 12, 1998 contained a TPHC concentration of 8,039.66 milligrams per kilograms (mg/kg). The other overburden soil pile sample and all of the post-excavation soil samples collected from the UST excavation and from below piping associated with the UST contained concentrations of TPHC ranging from non-detect to 596.97 mg/kg.

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9053 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, no longer exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-22 at Building 9053.

# Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
NO4	The contaminated solid stockpile
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
911665P	Contaminated soil pile from the UST-9116 excavation
	Deep Sample
9196BE1A	Geoprope boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the bonng number and last letter indicates which sample in the sequence.
	Sample from remedial excavation of a leaking remote him line/what area of the excavation the sample was collected.
	Samples was collected from a papand remote fill line for a particular UST exervation
	Samples collected from a second female in the rocard latter and number designate the particular area of the excavation where
ND I	the completives collected
CNEDM	Confirmation sample to confirm that contamination has been removed
CNEM	Another designation for a confirmation sample
	Anomer designation for a commutatory sample Deturn/feed/went lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
ŤP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
						·····
9053B1	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053B2	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053B3	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053DS	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053E	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053S	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053VL	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053RF	1/8/98	1/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053B4	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053(W)E1	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053(W)E2	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053OBS1	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053OBS2	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053GNEMB1**	2/13/98	2/21/98	s Soil	Post-Excavation	TPHC-	0QA-QAM-025
9053CNFMB2**	2/13/98	2/21/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053CNFME**	2/13/98	2/21/98	Soil -	Post-Excavation	TPHC	OQA-QAM-025
9053CNFMW**	2/13/98	2/21/98	Soll	Post-Excavation	TPHC	OQA-QAM-025
9053CNEMS**	2/13/98	2/21/98	Soll	-Post-Excavation	TPHC	OQA-QAM-025
9053CNEMN**	2/13/98	2/21/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053B5	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053W	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053S2	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053N1	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9053N2	1/12/98	1/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1 Summary of Post-Excavation Sampling Activities Building 9053, Camp Evans Area Wall Township, New Jersey

Note:

*TPHC **

Total petroleum hydrocarbons Samples collected to remediate contamination found in sample above.

				<b>A</b> - 1 - 17 - 1	<b></b>	NJDEP Soil		
	Sampla		Anchusia	Analytical	Method	Desult	Cleanup	Exceeds
Sample ID	Laboratory ID	Sample Date	Date(s)	Used	l imit (ma/ka)	(ma/ka)	(ma/ka)	Criteria
						(119/19)		
9053B1	3273.01	1/8/98	1/12/98	TPHC	166	ND	1,000	No
9053B2	3273.02	1/8/98	1/12/98	TPHC	180	ND	1,000	No
9052B3	3273.03	1/8/98	1/12/98	TPHC	180	ND	1,000	No
9052DS	3273.04	1/8/98	1/12/98	TPHC	183	ND	1,000	No
9053E	3273.05	1/8/98	1/12/98	TPHC	186	ND	1,000	No
9053S	3273.06	1/8/98	1/12/98	TPHC	167	ND	1,000	No
9053VL	3273.07	1/8/98	1/12/98	TPHC	180	201.52	1,000	No
9053RF	3273.08	1/8/98	1/12/98	TPHC	172	ND	1,000	No
9053B4	3277.01	1/12/98	1/13/98	TPHC	162	ND	1,000	No
9053(W)E1	3277.02	1/12/98	1/13/98	TPHC	159	436.58	1,000	No
9053(W)E2	3277.03	1/12/98	1/13/98	TPHC	158	720.56	1,000	No
9053OBS1	3277.04	1/12/98	1/13/98	TPHC	179	ND	1,000	No
9053OBS2	3277.05	1/12/98	1/13/98	TPHC	170	8,039.66	1,000	Yes
9053CNFMB1**	3343.01	.2/13/98	2/21/98	TPHC	. 161	ND		No 🚬
9053CNFMB2**	Ken 3343.02	2/13/98	2/21/98	TPHC	) - <b>168</b> - English	is ND	1,000	No-
9053CNFME	3343.03	2/13/98	2/21/98	TPHC	176	ND	·중국 1,000 문화	No
9053CNFMW**	3343.04	2/13/98	2/21/98	TPHC	168	596.97	1,000	No
9053CNEMS***	3343.05	2/13/98	2/21/98	TPHC	245-10173.01-14	ND: ND	F	NOT STREET
9053CNFMN**	.3343.06	2/13/98	2/21/98	TPHC	176	ND ND	1,000	No No
9053B5	3277.06	1/12/98	1/13/98	TPHC	168	ND	1,000	No
9053W	3277.07	1/12/98	1/13/98	TPHC	168	ND	1,000	No
9053S2	3277.08	1/12/98	1/13/98	TPHC	160	173.68	1,000	No
9053N1	3277.0 <del>9</del>	1/12/98	1/13/98	TPHC	189	ND	1,000	No
9053N2	3277.10	1/12/98	1/13/98	TPHC	180	ND	1,000	No

# Table 2 Post-Excavation Soil Sampling Results Building 9053, Camp Evans Area Wall Township, New Jersey

Note:

Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria. * Not detected

ND

TPHC

Total petroleum hydrocarbons Samples collected to remediate contamination found in sample above. **


9053.DWG ASC 01/19/99



9053.DWG ASC 01/19/99

#### APPENDIX A

SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-22 (12/97) New Jersey Department of Environmental Protection Site Remediation Program

## UST Site/Remedial Investigation Report Certification Form

	A. Facility Name: US Arm	y, Fort Monmouth, Evans Area						
	Facility Street Address: Building 1207, DCSOPS-BID							
	Municipality: Wall Township County : Monmouth							
	Block: 240, 241 and 242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02							
	Telephone Number : (732) 239-2427							
	<b>B.</b> Owner (RP)'s Name: US	S Army, CECOM						
	Street Address: DCSOPS-B	ID, Bldg. 1207 City : Fort Monmouth						
12 million - 1 mil	State: NJ Zip: 07703	Telephone Number : (732) 532-5052						
	<b>C.</b> (Check as appropriate)	<b>D.</b> (Complete all that apply)						
	• Site Investigation	• Assigned Case Manager : <u>Mr. Ian Curtis</u>						
	Report (SIR) \$500 Fee	<ul> <li>US1 Registration Number : (7 digits): 90029 - <u>A A</u></li> <li>Incident Report Number (10 or 12 digits):</li> </ul>						
	Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>						
	Report (RIR) \$1000 Fee							
	E. Certification by the Sub	surface Evaluator:						
A DESCRIPTION OF THE REAL PROPERTY OF THE REAL PROP	The attached report of	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes						
	Name: Kevin J. Phela	an Signature: Kevin J. Phalan UST Cert. No.: 0018436						
a	Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457						
	Firm Address: 1 Bank Stree	et, Suite 103 City: Rockaway						
	State: <u>NJ</u> Zip: <u>078</u>	366 Telephone Number : (973) 9830507, Ext. 230						
-								

(NOTE et seq.)	: Certification numbers required only if work was conducted on US is regulated per N.J.S.A. 56. TOA-
<u></u>	
F. Ce	ertification by the Responsible Party(ies) of the Facility:
The fol	owing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if make a written false statement which I do not believe to be true. I am also aware that if I knowingly
	direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Finit of Typo <u>). Int. officitoo (Sppiolo)</u>
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	NA
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: November 30, 2000

#### APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-22



PHOTO 1: View of UST-9053 after completion of cleaning activities (looking southwest).



PHOTO 2: View of 0.25 inch hole located at the western end of UST-9053.



PHOTO 3: View of sampling locations in the UST-9053 excavation (looking west).



PHOTO 4: View of UST-9053 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

### SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-22

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

Client :	U.S. Army			Lab. ID # :		3273		
	DPW. SELFM-I	PW-EV		Date Rec'd:		09-Jan-98		
	Bldg. 173			Analysis Star	rt:	12-Jan-98		
	Ft. Monmouth,		Analysis Con	aplete:	12-Jan-98			
Analysis:	OQA-QAM-025			UST Reg. #:				
Matrix:	Soil		Closure #:					
Analyst:	D.DEINHARDT			DICAR #:				
Ext. Meth:	Shake			Location #:		BLDG. 9053		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)		
3273.01	9053-B1	1.00	15.95	88.58	166	ND		
3273.02	9053-B2	1.00	15.20	85.97	180	ND		
3273.03	9053-B3	1.00	15.66	83.29	180	ND		
3273.04	9053-DS	1.00	15.79	81.12	183	ND		
3273.05	9053-E	1.00	15.19	83.23	186	ND		
3273.06	9053-S	1.00	15.78	89.03	167	ND		
3273.07	9053-VL	1.00	15.12	86.43	180	201.52		
3273.08	9053-RF	1.00	15.73	86.71	172	ND		
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METHOD BLANK	29-Sep-97	1.00	15.00	100.00	157	ND		

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

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

Client :	U.S. Army			Lab. ID # :		3277	
	DPW. SELFM-J	PW-EV		Date Rec'd:		13-Jan-98	
	Bldg. 173			Analysis Sta	rt:	13-Jan-98	
	Ft. Monmouth,	NJ 07703		Analysis Con	nplete:	13-Jan-98	
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD	Г		DICAR #:			
Ext. Meth:	Shake			Location #:		BLDG. 9053	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3277.01	9053-B4	1.00	15.69	92.57	162	ND	
3277.02	9053-(W)E1	1,00	15.55	95.17	159	436.58	
3277.03	9053-(W)E2	1.00	15.32	96.97	158	720.56	
3277.04	9053-OBS1	1.00	15.44	85.11	179	ND	
3277.05	9053-OBS2	1.00	15.24	90.44	170	8039.66	
3277.06	9053-B5	1.00	15.09	92.52	168	ND	
3277.07	9053-W	1.00	15.55	89.77	168	ND	
3277.08	9053-S2	1.00	15.74	93.12	160	173.68	
3277.09	9053-N1	1.00	15.27	81.23	189	ND	
3277.10	9053-N2	1.00	15.89	82.26	180	ND	
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METHOD BLANK	13-Jan-98	1.00	15.00	100.00	157	ND	

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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

Client:	U.S. Army			Lab. ID # :		3343
	DPW. SELFM-I	PW-EV		Date Rec'd:		13-Feb-98
	Bldg. 173			Analysis Star	rt:	21-Feb-98
	Ft. Monmouth,	NJ 07703		Analysis Cor	aplete:	21-Feb-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARDI	2		DICAR #:		
Ext. Meth:	Shake			Location #:	Bldg 9053	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3343.01	9058-CNFMB1	1.00	15.91	91.80	161	ND
3343.02	9053-CNFMB2	1.00	15.16	92.03	168	ND
3343.03	9053-CNFME	1.00	15.44	86.35	176	ND
3343.04	9053-CNFMW	1.00	15.65	89.43	168	596.97
3343.05	9053-CNFMS	1.00	15.88	85.47	173	ND
3343.06	9053-CNFMN	1.00	15.24	87.45	176	ND
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METHOD BLANK	18-Feb-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

#### APPENDIX D

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UST DISPOSAL CERTIFICATE UST NO. 90029-22

· · ·	(A) contractions of an increase		RECROER ITEM & BLN74
-1		STRÂIGHT BILL OF LADING ORIGINAL - NOT NEGOTIABLE	shipper He
		SMC ENVIRONMENTAL SERVICES GR	Corritor No.
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SMC Environmental Services Group A Subschary of Sciences Management Corporation

P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M/R.M. on 1/8/98, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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site Manager anie

Print or Type Name Here

#### APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-22

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## PETROLEUMAERVICES

#### SHIPPING INFORMATION

AND A DECK OF A DECK SERVICE SECTION

SALES CODE USED OIL REMOVAL ALC: NOT OF 40500 ANTI-FREEZE REMOVAL TO STATE 40300 USED OIL FILTER REMOVAL 40600 OILY WATER DISPOSAL 240501 40502 SIUDGE DISPOSAL AND STOTAT WE GOOD CALL GASOLINE/WATER CALL AND A SALE AND A 41001 415016 DRUM DISPOSAL

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PAYMENT RECEIVED SECTION

CUSTOMER SERVICED EVERY 30 DAYS

	RD.1	, BOX 5A - OLD BRIDGE, N	<u>U 08857</u>					
NON-HAZARDOUS WASTE MANIFEST	1. Generator's	US EPA ID No.	Manifest Document No.	2. Page 1 of	<u> </u>	IHZ	00954	8
Generator's Name and Mailing Address US, Army Commun (Gmp Evans Area, FT. M Generator's Phone ()	cations El on mouth, A	ectronics ( 1 mm J. , 07703	nd					
5. Transporter 1 Company Name LIONETTI OIL RECOVERY CI	D INC	NJD084	Number 0 4 4 0 6 4	A. Transp 9	orter's Ph 08 72	one 1-09	00	
7. Transporter 2 Company Name		8. US EPA II 	) Number	B. Transp	orter's Pl	none		
9. Designated Facility Name and Site Address LIONETTI OIL RECOVERY C RUNYON&CHEESEQUAKE RDS OLD BRIDGE.NJ 08857	O INC DBA L	DRCO PETROLEUM	SVCS 0, 4, 4, 0, 6, 4	C. Facility	's Phone 3 721-	0900	)	
11. Waste Shipping Name and Description	•			1	12. Conta No.	ainers Type	13. Total Quantity	14. Unit
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D. Additional Descriptions for Materials Dated T.L. PETROLEUM OIL 98 % WATER 2 %		ч.		. T04	FILT	RATI	DN	
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15. Special Handling Instructions and Addition 24 HR EMERGENCY RESPONS DECALE <u>27084</u> ERG#128 DEX MANIFEST USED FOR TRACK	al Information E#(908) 721 SIL TEST KI SING PURPOSE	-0900 T RESULTS A	I PPM	•				
15. Special Handling Instructions and Addition 24 HR EMERGENCY RESPONS DECALE <u>PTOKUERG</u> #128 DEX MANIFEST USED FOR TRACK 16. GENERATOR'S CERTIFICATION: 1 centre Printed/Typed Name	al Information E#(908) 721 SIL TEST KI SING PURPOSE	-0900 T RESULTS ///	ot subject to fedged reg	utations for re	porting pro	oper disp	osal of Hazardous Wa Month Day	iste. Ya
15. Special Handling Instructions and Addition 24 HR EMERGENCY RESPONS DECALE <u>PTOKY</u> ERG#128 DEX MANIFEST USED FOR TRACK 16. GENERATOR'S CERTIFICATION: 1 certi	al Information IE# (908) 721 SIL TEST KI SING PURPOSE The materials describe SFLP ot of Materials	-0900 T RESULTS A/A S ONLY d above on this manifest are n Signature		ulations for re	porting pro	oper disp	Sal of Hazardous Wa Month Day	15te. 7 Y
15. Special Handling Instructions and Addition 24 HR EMERGENCY RESPONS DECAL! <u>Provv</u> ERG#128 DEX MANIFEST USED FOR TRACK 16. GENERATOR'S CERTIFICATION: 1 centr Printed/Typed Name <u>Printed/Typed Name</u> Printed/Typed Name <u>Printed/Typed Name</u> <u>Out TACUMOT</u>	al Information E#(908) 721 SIL TEST KI SING PURPOSE y the materials describe SFLP ot of Materials	-0900 T RESULTS A/A S ONLY d above on this manifest are n Signature MAL-SA		ulations for re	porting pro	xper disp	Dosal of Hazardous Wa Month Day	asta. Y 8 9 7 7 7
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## GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No.

09548 dated 1-28-98, is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.



Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.

- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: <u>NA</u> PPM halogens.

I am duly authorized to sign said certification.

Constant U.S. Army Communications Electronizs Command
VT32/0020324
Generator's EPA ID No
Address Camp Evans Area FT. Monmerth, N-J., 07703
Print Name Charles Applag Signature Signature
Title Envi Prest. Sec. SELPMPS-EV
1-28-98
Date

United States Army Fort Monmouth, New Jersey

## Underground Storage Tank Closure and Site Investigation Report

Building 9055 Camp Evans Area

NJDEP UST Registration No. 90029-23

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#### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix RSigned bite Assessment buildingAppendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data PackageAppendix DUST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### UST Closure

On January 30, 1998, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-23 (Fort Monmouth Identification No. 9055), was located north of Building 9055 in the Camp Evans area of Fort Monmouth. The UST was a 1,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the eastern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). Several small holes were noted in the UST; however, only slight evidence of potentially contaminated soil was observed surrounding the tank. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 3,300.15 milligrams per kilogram (mg/kg). After additional soil was excavated and removed, soil remaining in the excavation contained non-detectable concentrations of TPHC. The total amount of soil removed from the excavation was 30 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9055 area, as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-23 at Building 9055.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-23, was closed at Building 9055 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on January 30, 1998. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-23 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one significant historical discharge was associated with UST No. 90029-23 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9055 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Area "G"), as shown in Figure 1. UST No. 90029-23 was located north of Building 9055 and associated piping ran approximately 10 feet south from the UST to Building 9055. The UST fill port area was located directly above the eastern end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9055.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged temporarily on the asphalt driveway, and examined for holes. Several pinholes in the southeastern corner of the UST were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. Visual evidence of contamination was observed and detected by the PID/FID in soil located in the southeast and southwest corners and the bottom of the excavation as well as soil located adjacent to the UST fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length. The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil at the 9055S sampling location (southeastern corner of the excavation) was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean excavated soil and imported clean fill were used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507
   NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST, as well as the UST excavation sidewalls and bottom, did exhibit evidence of potential contamination at the time of the UST removal and was removed to the staging area; however, soil adjacent to the associated piping did not exhibit indications of contamination.

#### 2.2 SOIL SAMPLING

On January 30, 1998, after UST removal, post-excavation soil samples 9055B1, 9055B2 (Duplicate of 9055B1), 9055B3, 9055E, 9055W, 9055N, 9055S, 9055R/F, 9055VL1, and 9055VL2 were collected from nine locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location, and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 7.5 to 8-feet below ground surface (bgs). The sidewall samples were collected from 7 to 7.5-feet bgs. Sample 9055R/F was collected from next to Building 9055 along the former return/feed line piping length of the excavation, which was approximately 10 feet long. Sample 9055R/F was collected from 2 to 2.5-feet bgs. In addition, sample 9055VL1 was collected from next to Building 9055 at the former vent line location and sample 9055VL2 was collected at the edge of the main UST excavation. Both samples were collected from 2 to 2.5-feet bgs. Samples 9055OBS was collected from the overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Analytical results for the original post-excavation samples revealed 3,300.15 milligrams per kilogram (mg/kg) TPHC at the 9055S sample location. This concentration exceeds 1,000 mg/kg TPHC, which is NJDEP's criterion for additional soil removal/remediation or for required VOC sampling. As a result, on February 10, 1998, Tetra Tech and SMC excavated additional soil from the bottom, east, west, and south sides of the excavation and collected post-excavation samples 9055RB1, 9055RB2 (duplicate of 9055RB1), 9055RS1, 9055RW1, and 9055RE1 from a total of four sampling locations. Bottom samples

9055-5

were collected from 7 to 7.5-feet bgs and sidewall samples were collected from 6.5 to 7-feet bgs. All samples were analyzed for TPHC and total solids.

Laboratory analytical results for the first remedial post-excavation samples revealed TPHC concentrations 2,723.28 mg/kg at the 9055RB1 sample location and 2,673.69 mg/kg at the 9055RB2 sample location. These concentrations also exceed the NJDEP's cleanup criterion of 1,000 mg/kg TPHC for additional soil removal or volatile organic compound (VOC) sampling. As a result, on March 2, 1998, Tetra Tech and SMC performed a second phase of additional soil excavation from the southern half of the original UST excavation and collected post-excavation soil samples 9055RB3, 9055RB4 (Duplicate of 9055RB3), 9055RN1, 9055RS2, 9055RE2, and 9055RW2 from a total of five sampling locations. All samples were collected from 10 to 10.5-feet bgs and were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's "Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from nine locations on January 30, 1998, four locations on February 10, 1998, and five locations on March 2, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on January 30, 1998 and February 10, 1998, contained concentrations of TPHC ranging from non-detect to 3,300.15 milligrams per kilogram (mg/kg). The samples collected on March 2, 1998 contained non-detectable concentrations of TPHC.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9055 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, no longer exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-23 at Building 9055.

#### Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

	wall rownship, new sersey
в	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
Ē	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	above)
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where the sample was collected
CNERM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

•

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
			<b></b>	<u></u>		
9055OBS	1/30/98	2/2/98	Soil	Post-Excavation	ТРНС	OQA-QAM-025
9055B1	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055B2	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055B3	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055E	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055W	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055N	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055S	1/30/98	2/2/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9055RB1**	2/10/98	2/21/98	Soll	Post-Excavation	TPHC	OQA-QAM-025
9055RB2**	2/10/98	2/21/98	Soll	<ul> <li>Post-Excavation</li> </ul>	TPHC	-OQA-QAM-025
9055RS1**	2/10/98	2/21/98	Soil	Post-Excavation	ТРНС	OQA-QAM-025
9055RW1**	2/10/98	2/21/98	Soil 🚽	Post-Excavation	TPHC	OQA-QAM-025
9055RE1**	2/10/98	2/21/98	Soll	Post-Excavation		0QA-QAM-025
9055RB3	103/2/981	3/3/98	Soll	<ul> <li>PosidExcavation:</li> </ul>	TPHC	10QA-QAM-025
9055RB4**	3/2/98	3/3/98	Soll	<ul> <li>Post-Excavation</li> </ul>	- TPHC	HOQA-QAM-025
9055RN1**	3/2/98	3/3/98	- Soil -	Post-Excavation		- OQA-QAM-025
9055RS2	3/2/98	3/3/98	Soil	Rest Excavation	<b>MARTINE TRADE</b>	
9055RE21	3/2/98	3/3/98	Soil	Post-Excavation	TIPHO.	400A-0AM-025
9055RW2**	3/2/98	3/3/98	Soil	<ul> <li>Post-Excavation</li> </ul>	A STPHCE	/ OQA-QAM-025
9055R/F**	1/30/98	2/2/98	Soil	<ul> <li>Post-Excavation</li> </ul>	TPHC	oqa-qam-025
9055VL1** 200	4/1/80/98	2/2/98 34 11	no risoli i n	Post-Excavation:	<b>TRHO</b>	MOQA=QAM-025
9055VL2**	1/30/98	2/2/98	Söll	Post-Excavation	##ENPHC和A	HOQAIQAM-025

.

Table 1
Summary of Post-Excavation Sampling Activities
Building 9055, Camp Evans Area
Wall Township, New Jersey

Note:

*TPHC Total petroleum hydrocarbons
 ** Samples collected to remediate contamination found in sample above.

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
0055089	2200.04	4/20/00	0/0 //00		174		40.000	NI-
90000000	3309.01	1/20/90	212 - 4190		174		10,000	INO N-
900001	3309.0Z	1/30/98	212 - 4/98		177	392.8	10,000	NO
900002	3309.03	1/30/98	2/2 - 4/98		175	278.98	10,000	NO
905565	3309.04	1/30/98	2/2 - 4/98	TPHC	176	348.16	10,000	NO
90000	3309.05	1/30/98	2/2 - 4/98	TPHC	191	663.4	10,000	NO
905577	3309.00	1/30/98	2/2 - 4/98	TPHC	167		10,000	NO
9000IN	3309.07	1/30/98	2/2 - 4/98		160		10,000	NO No
90000	3309.08	1/30/98	2/2 - 4/98	TPHC	170	3,300.15	10,000	NO
905555	3337.02	2/10/98	2/21/98	IPHC -	164	ND	10,000	NO
9055RW1	- 3537.04	2/10/98	2/21/98		168		10,000	NO
9000RE1	3337.05	2/10/98	2/21/98	· IPHC	109		10,000	INO SAL
9055RB1	3337:01	- z/10/98	2/21/98	IPHC	165	2,123.28	10,000	NO:
9055RB2	3337.03	2/10/98	2/21/98	IPRO		2,67,3.69	10,000	
9055RB3	3380.01	3/2/98	3/3 44/98.	IPHC.			10,000	n neo Nomesco
9055RB4		3/2/98	3/3 - 4/98	IPERC	179	ND	10,000	re∈ No - /
9055RN1	3380,03	ser <u>3/2/98</u>	× 3/3 - 4/98	TPHC	167,	ND	10,000	NO NO
9055RS2	3380 04	3/2/98	- 3/3 - 4/985	IN TIPHO IN	临时带1777年中中	ND	10,000	NOT NOT STATE
9055RE2		3/2/98	- 3/3 - 4/98	TPHCAN	999991719134	ND NO UN	10,000	No
9055RW2***			3/3 - 4/98 .	TPHC	- 167 - 1	- ND	10,000	et e No in la
9055R/F*2		else 1/30/98 mission	2/2 - 4/98	TPHC	d - 174 - 174	370.26	., ⊭.10,000	No
9055XL13	3309 10	1/30/98.01	2/2-4/98	TPHONE	和建設175級制度	ND ND	前前前10,000地点	No et e
9055VL2**		1/30/98	2/2 - 4/98	THE PHC	· 183.1111		10,000	No

Table 2
Post-Excavation Soil Sampling Results
Building 9055, Camp Evans Area
Wall Township, New Jersey

.

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria. Not detected

ND

TPHC

Total petroleum hydrocarbons Samples collected to remediate contamination found in sample above. **





#### APPENDIX A

### SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-23

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area
Facility Street Address: Building 1207, DCSOPS-BID
Municipality: Wall Township County : Monmouth
Block: 240, 241 and 242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02
Telephone Number : (732) 239-2427
B. Owner (RP)'s Name: US Army, CECOM
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth
State: NJ Zip: 07703 Telephone Number : (732) 532-5052
C. (Check as appropriate) D. (Complete all that apply)
Site Investigation     Assigned Case Manager : <u>Mr. Ian Curtis</u>
OST Registration Number : (7 digits): 90029 - <u>d</u> Incident Report Number (10 or 12 digits):
Remedial     Investigation     Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>
Report (RIR) \$1000 Fee
E. Certification by the Subsurface Evaluator:
The attached report conforms to the specific reporting requirements of N LA C 7:26E Yes
Name: Kevin J. Phelan Signature: <u>Kervin J., Phelon</u> UST Cert. No.: <u>0018436</u>
Firm: Tetra Tech EM, Inc. Firm's UST Cert. Number: US00457
Firm Address: 1 Bank Street, Suite 103 City: Rockaway

(NOTE	Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:1
et seq.	)
<b>F.</b> c	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as foll
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. 3.	For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is t
	accurate, and complete. I am aware that there are significant civil penalties for knowingly submit
	make a written false statement which I do not believe to be true. I am also aware that if I knowin
	direct or authorize the violation of any statute, I am personally liable for the penatties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	$\partial I \partial$
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
## APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-23

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PHOTO 1: View of the cleaned interior of UST-9055 (looking south/southwest).



PHOTO 2: View of UST-9055 being removed from the ground (looking southeast).



PHOTO 3: View of the sampling locations in the original UST-9055 excavation (looking west).



PHOTO 4: View of the sampling locations in the remedial UST-9055 excavation (looking south/southwest).



PHOTO 5: View of UST-9055 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-23

Client :	U.S. Army			Lab. ID # :	3309			
	DPW. SELFM-	PW-EV		Date Rec'd:		30-Jan-98		
	Bldg. 173			Analysis Star	02-Feb-98			
	Ft. Monmouth,	NJ 07703		Analysis Con	nplete:	04-Feb-98		
Analysis:	OQA-QAM-025			UST Reg. #:				
Matrix:	Soil			Closure #:				
Analyst:	D.DEINHARD	r		DICAR #:				
Ext. Meth:	Shake	Shake Location #:						
Sample	Field ID	Dilution Factor	Weight (g) % Solid MDL (mg/kg)			TPHC Result (mg/kg)		
3309.01	9055-OBS	1.00	15.50	86.89	174	ND		
3309.02	9055-B1	1.00	15.13	87.52	177	392.80		
3309.03	9055-B2	1.00	15.16	88.51 175		278.98		
3309.04	9055-B3	1.00 1.00 1.00 1.00	15.17           15.27           15.60           15.69	88.14 80.77 90.19 93.54	176 191	348.16		
3309.05	9055-E					663,40		
3309.06	9055-W				167	ND ND		
3309.07	9055-N				160			
3309.08	9055-S	1.00	15.30	90.10	3300.15			
3309.09	9055-R/F	1.00	15.90	85.07	174	370.26		
3309.10	9055-VL1	1.00	15.51	86.44	175	ND		
3309.11	9055-VL2	1.00	15.01	85.48	183	ND		
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ND = Not Detected

MDL = Method Detection Limit

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Daniel K. Wright Laboratory Director

Client :	U.S. Army			Lab. ID # :	3337				
	DPW. SELFM-I	PW-EV		Date Rec'd:		11-Feb-98			
	Bldg. 173			Analysis Star	rt:	21-Feb-98			
	Ft. Monmouth,	NJ 07703		Analysis Con	aplete:	21-Feb-98			
Analysis:	OQA-QAM-025			UST Reg. #:					
Matrix:	Soil			Closure #:					
Analyst:	D.DEINHARD	r		DICAR #:					
Ext. Meth:	Shake			Bldg 9055					
Sample	Field ID	Dilution Factor	Weight (g) % Solid MDL (mg/kg)			TPHC Result (mg/kg)			
3337.01	9055-RB1	1.00	15.42	92.48	165	2723.28			
3337.02	9055-RS1	1.00	15.58	92.10	164	ND			
3337.03	9055-RB2	1.00	15.17	90.41	171	2673.69			
3337.04	9055-RW1	1.00	15.67	89.49	168	ND			
3337.05	9055-RE1 1.00 15.		15.05	92.62	ND				
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METHOD BLANK	12-Feb-98	1.00	15.00	100.00	157	ND			

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

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Client :	U.S. Army			Lab. ID # :	3380			
	DPW. SELFM-1	PW-EV		Date Rec'd:		03-Mar-98		
	Bldg. 173			Analysis Sta	03-Mar-98			
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	04-Mar-98		
Analysis:	OQA-QAM-025			UST Reg. #:				
Matrix:	Soil			Closure #:				
Analyst:	D.DEINHARD'	r		DICAR #:				
Ext. Meth:	Shake	Shake Location #:						
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	TPHC Result (mg/kg)			
3380.01	9055-RB3	1.00	15.25	88,53	174	ND		
3380.02	9055-RB4	1.00	15.00	87.59	179	ND		
3380.03	9055-RN1	1.00	15.19	92,47	167	ND		
3380.04	9055-RS2	1.00	15.57	85.38	177	ND		
3380.05	9055-RE2	1.00	15.66	87.65	171	ND		
3380.06	9055-RW2	1.00	15.44	91.05	167	ND		
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METHOD BLANK	3-Mar-98	1.00	15.00	100.00	157	ND		
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ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

# APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-23

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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M.) 130/98, the above said vessel is certified gas free and has on been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

#### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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lsite Manager NP

Print or Type Name Here

#### APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-23

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#### SHIPPING INFORMATION

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# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No. NHZONOG79 dated 2NQ-98

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- L-22: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results:_____PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. ARmy Communication. ELECTRONICS Common Camp Errors. Generator's EPA ID No. ルブ、 321002032グ BUNG c/o Joseph FAllor 173. Address ATTN SLEEM FONT MOULDINGTH. 07707 Signature_ Print Name. ELFM-PW-EU 2.19.9 Date ____

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9057 Camp Evans Area

NJDEP UST Registration No. 90029-41

### **TABLE OF CONTENTS**

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	1.2	Underground Storage Tank Excavation And Cleaning	3
	1.3	Underground Storage Tank Transportation And Disposal	3
	1.4	Management Of Excavated Soils	4
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4.0	CON	CLUSIONS AND RECOMMENDATIONS	6

#### **TABLES**

Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results

### FIGURES

Figure 1	Building 9057(A) - UST Removal Location Map
Figure 2	Building 9057(A) - UST Removal and Soil Sample Locations

#### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### **EXECUTIVE SUMMARY**

#### UST Closure

On November 6, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-41 (Fort Monmouth Identification No. 9057(A)), was located east of Building 9057 in the Camp Evans area of Fort Monmouth. The UST was a 550-gallon tank used to store diesel fuel. The former UST fill port location was located directly above the center of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST; however, evidence of potentially contaminated soil was observed in the overburden soil, adjacent to the fill port location and surrounding the tank. After this soil had been excavated, samples collected at the time of the UST removal contained nondetectable concentrations of total petroleum hydrocarbons (TPHC). The total amount of soil removed from the excavation was approximately 15 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-41 at Building 9057.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-41, was closed at Building 9057 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on November 6, 1997. The UST was a steel 550-gallon tank used to store diesel fuel.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-41 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-41.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9057 is located adjacent to the eastern perimeter of the main section of the Camp Evans area of the Fort Monmouth Army Base as shown in Figure 1. UST No. 90029-41 was located north of Building 9057 and associated piping formerly ran approximately 6 feet west from the UST to Building 9057. The former UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST-9057(A) removal relative to Building 9057.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and the associated piping. No free product was present in the piping because the UST was out-of-service when removed; however, the UST had previously been found to be full of water when it was discovered (Note: At the time that the project began, no one knew that UST No. 90029-41 was still in place). As a result, SMC called Lorco Petroleum Company and made arrangements for a vacuum truck to be sent to the site to remove the water from the UST. After that had been completed, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with a drum vacuum device. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, transported to the UST staging area (located adjacent to the west side of Building 9061), and examined for holes. No holes or punctures were observed by the Tetra Tech subsurface evaluator. Appendix C provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed or detected by the PID/FID except for soil located adjacent to the UST fill port and surrounding the UST. Visual and PID/FID soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the former piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from (test trench) post-excavation soil samples, soil located adjacent to the UST fill port and surrounding the tank was contaminated (see Exploratory Test Trench Report). This soil was removed to the staging area for disposal off site at a later date and the clean excavated soil and imported clean fill were used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from adjacent to the former UST fill port location and surrounding the tank did exhibit evidence of contamination and was transported to the soil staging area.

#### 2.2 SOIL SAMPLING

On November 6, 1997, after the UST removal and the excavation of three truckloads of potentially contaminated soil, post-excavation soil samples 9057(A)B1, 9057(A)B2 (Duplicate of 9057(A)B1), 9057(A)B3, 9057(A)N, 9057(A)E, 9057(A)S, 9057(A)W, and 9057(A)RF1 were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of and beneath the former UST location, and bottom samples were collected from directly beneath the former UST location, or 7.5 to 8-feet below ground surface (bgs). The sidewall samples were collected from 7 to 7.5-feet bgs. Sample 9057(A)RF1 was collected from next to Building 9057 along the former return/feed line piping length of the excavation, which was approximately 6 feet long. Sample 9057(A)RF1 was collected from 3 to 3.5-feet bgs. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's "Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on November 6, 1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact VOC soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on November 6, 1997 from the UST excavation and from below the former location of piping associated with the UST contained non-detectable concentrations of TPHC.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the 9057(A) UST excavation at Building 9057 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-41 at Building 9057.

#### Legend of Sample identifications Camp Evans Area Wall Township, New Jersey

·	Wall Township, New Jersey
D	Comple from the bettern of the overvettern
	Sample from the wort sidewall of the excevation
	Samples from the east sidewall of the exception
	Samples from the porth sidewall of the excervation
N C	Samples from the south sidewall of the excevation
	Sample from beneath the former location of the return/food lines of the LIST
	Sample from beneath the former location of the vent line to the LIST
	Sample from the overburden soil pile of a LIST excevation to determine if the sail can be used as backfill or must be transported to
000	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
ONEDH	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
CONTA	sample could be collected for Doth lines
SUNTI	Sample collected at a location of suspected contamination
(vv)⊨1 TD	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	Less pivirench
	Hazardous waste area building (former location)
	Above ground storage tank
	Sample collected at the former location of all AST at the specified building
SD	Semple collected from a storm drain
SM	Sample collected from a sidewall of a remodial excevation
CTP	Conner tubing run
CSP_1	
005-1	Clean soil pile

.

Table 1
Summary of Post-Excavation Sampling Activities [UST 9057(A)]
Building 9057, Camp Evans Area
Wall Township, New Jersey
· -

Comolo ID	Date	Date Analysis	R.A.m.Autor	Comolo Timo	Analytical	
	Collected	Started		Sample Type	Parameters	Analysis Methoo
9057(A)RF1	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)B1	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)B2	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)B3	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)N	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)E	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)S	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(A)W	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

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Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9057(A)RE1	3152.03	11/6/97	11/10 - 11/97	TPHC	171		10.000	
9057(A)B1	3152.04	11/6/97	11/10 - 11/97	TPHC	179	ND	10,000	No
9057(A)B2	3152.05	11/6/97	11/10 - 11/97	TPHC	176	ND	10.000	No
9057(A)B3	3152.06	11/6/97	11/10 - 11/97	TPHC	178	ND	10,000	No
9057(A)N	3152.07	11/6/97	11/10 - 11/97	TPHC	163	ND	10,000	No
9057(A)E	3152.08	11/6/97	11/10 - 11/97	TPHC	177	ND	10,000	No
9057(A)S	3152.09	11/6/97	11/10 - 11/97	TPHC	174	ND	10,000	No
9057(A)W	3152.10	11/6/97	11/10 - 11/97	TPHC	168	ND	10,000	No

#### Table 2 Post-Excavation Soil Sampling Results [UST 9057(A)] Building 9057, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





## APPENDIX A

# SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-41

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(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area							
Facility Street Address: Building 1207, DCSOPS-BID							
Municipality: Wall Township County : Monmouth							
Block: 240, 241 and 242 Lot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02							
Telephone Number : (732) 239-2427							
B. Owner (RP)'s Name: US Army, CECOM							
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth							
State: NJ Zip: 07703 Telephone Number : (732) 532-5052							
<b>C.</b> (Check as appropriate)	D. (Complete all that apply)						
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>						
Report (SIR) \$500 Fee	<ul> <li>UST Registration Number : (7 digits): 90029 - <u>4</u></li> <li>Incident Report Number (10 or 12 digits):</li> </ul>						
Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>						
Report (RIR) \$1000 Fee							
E. Certification by the Subsurface Evaluator:							
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes							
Name: Kevin J. Phelan Signature: <u>Karin J. Phalon</u> UST Cert. No.: 0018436							
Firm: Tetra Tech EM, Inc. Firm's UST Cert. Number: US00457							
Firm Address: 1 Bank Street, Suite 103 City: Rockaway							
State: <u>NJ</u> Zip: <u>07</u>	866 Telephone Number : (973) 9830507, Ext. 230						

<b>F.</b> ce	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as folio
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is tr accurate, and complete. I am aware that there are significant civil penalties for knowingly submit false, inaccurate, or incomplete information and that I am committing a crime of the fourth degre make a written false statement which I do not believe to be true. I am also aware that if I knowin direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	Signature:
ł	Company Name: US Army CECOM DCSOPS-BID Fort Monmouth N.L 07703

## APPENDIX B

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# PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-41



PHOTO 1: View of the sampling location beneath the return/feed line piping of UST-9057(A) (looking northwest).



PHOTO 2: View of the sampling locations in the UST-9057(A) excavation (looking north).



PHOTO 3: View of UST-9057(A) staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

### APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-41

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Client:	U.S. Army			Lab. ID # :		3152		
	DPW. SELFM-P	DPW. SELFM-PW-EV			Date Rec'd:			
	Bldg. 173	Bldg. 173			Analysis Start:			
	Ft. Monmouth, l	Ft. Monmouth, NJ 07703			Analysis Complete:			
Analysis:	OQA-QAM-025			UST Reg. #:				
Matrix:	fatrix: Soil				Closure #:			
Analyst:	D.DEINHARDT			DICAR #:				
Ext. Meth:	Shake			Location #: BLDG. 9057				
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)		
3152.01	9057(B)-RF1	1.00	15.22	87.44	177	ND		
3152.02	9057(B)-RF2	1.00	15.31	86.91	177	209.70		
3152.03	9057(A)-RF1	1.00	15.82	86.85	171	ND		
3152.04	9057(A)-B1	1.00	15.16	86.47	179	ND		
3152.05	9057(A)-B2	1.00	15.40	86.65	176	ND		
3152.06	9057(A)-B3	1.00	15.19	86.98	178	ND		
3152.07	9057(A)-N	1.00	15.13	95.49	163	ND		
3152.08	9057(A)-E	1.00	15.14	87.80	177	ND		
3152.09	9057(A)-S	1.00	15.51	87.21	174	ND		
3152.1	9057(A)-W	1.00	15.19	92.36	168	ND		
3152.11	9057(B)-N	1.00	15.83	88.76	167	ND		
3152.12	9057(B)-DS	1.00	15.28	95.37	161	ND		
3152.13	9057(B)-E	1.00	15.29	92.06	167	ND		
3152.14	9057(B)-W1	1.00	15.57	95.14	159	ND		
3152.15	9057(B)-S	1.00	15.63	86.53	174	325.03		
3152.16	9057(B)-OBS1	1.00	15.57	86.68	174	ND		
3152.17	9057(B)-OBS2	1.00	15.24	87.44	176	ND		
3152.18	9057(B)-W2	1.00	15.49	92.06	165	ND		
			1					
METHOD BLANK	10-Nov-97	1.00	15.00	100.00	157	ND		

ND = Not Detected

MDL = Method Detection Limit

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Daniel K. Wright Laboratory Director
#### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-41

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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

#### CERTIFICATE OF NON-HAZARDOUS VESSEL

FACILITY: VESSEL:

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on NoV, 0, 1997, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

#### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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te Manager Print or Type Name Here

#### APPENDIX E

# WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-41

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	5. Additional Descriptions for Materials Listed A T,L PETROLEUM OIL WATER 99 %	bove			E. Han	dling Code: 4 FILT	s for Wa	istes Listed Above ON	
	15. Special Handling Instructions and Additional 24 HR EMERGENCY RESPONSE DECAL#87064ERG#128 DEXS MANIFEST USED FOR TRACK	学(9世紀) 721-0 SIL TEST KIT ING PURPOSES	900 RESULTS <u>CIODO</u> ONLY	РРМ					
	• ".						-		
	16. GENERATOR'S CERTIFICATION: I certify t	he materials described abo	we on this manifest are not	supref) of ederal reg	utations for	reporting pro	oper disp	osal of Hazardous Wi	aste.
↓	Charlis Applyby SELA	Fm-Aw-EV	Signature	46	5	•		Month Day	497
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SP OR	18. Transporter 2 Acknowledgement of Receipt	of Materials	Signature		X	1		Month Da	y Yest
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F	19. Discrepancy Indication Space								
	20. Facility Owner or Operator: Certification of n	eceipt of wasle materials	s covered by this manifes	at except as noted in	n Item 19.				
Ϋ́	Printed/Typed Name		Signature					Month Da	y Year
		ORIGINAL	- RETURN TO GE	NERATOR					



# **GENERATOR CERTIFICATION**

I hereby certify to the best of my knowledge that the waste described on Hazardous Waste Manifest No.  $NHZ \longrightarrow 8114$  dated 11-6-97.

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- X723, Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: <u></com</u> PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. ARMY	COMMUNICATIONS	ELECTRONICS	BMMAND	CAMP BUSUS	<u>, A</u> dea
Generator's EPA ID No	NJ321002032	4			
Address ATTN: 50	FALLON BLDG 173 ELEM- PW-EV	FORT MONMO	WTH, N.J.	07703	
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Date					

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9057 Camp Evans Area

NJDEP UST Registration No. 90029-45

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#### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix BPhotographs of UST ClosureAppendix CSoil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### EXECUTIVE SUMMARY

#### UST Closure

On November 6, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-45 (Fort Monmouth Identification No. 9057(B)), was located east of Building 9057 in the Camp Evans area of Fort Monmouth. The UST was a 1,500-gallon tank used to store diesel fuel. The former UST fill port location was located directly above the northern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the fill port. Samples collected at the time the UST was removed contained levels of total petroleum hydrocarbons (TPHC) concentrations ranging from non-detect to 325.03 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was approximately 15 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9057 area as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-45 at Building 9057.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-45, was closed at Building 9057 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on November 6, 1997. The UST was a steel 1,500-gallon tank containing diesel fuel.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-45 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-45.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9057 is located adjacent to the eastern perimeter of the main section of the Camp Evans area of the Fort Monmouth Army Base as shown in Figure 1. UST No. 90029-45 was located east of Building 9057 and associated piping formerly ran approximately 20 feet west from the UST to Building 9057. The former UST fill port area was located directly above the northern end of the tank. A site map is provided in Figure 1 showing the location of the UST-9057(B) removal relative to Building 9057.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and the associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with a drum vacuum device. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, transported to the UST staging area (located adjacent to the west side of Building 9061), and examined for holes. No holes or punctures were observed by the Tetra Tech subsurface evaluator. Appendix C provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed or detected by the PID/FID except for soil located adjacent to the UST fill port and the overburden soil (at the western end of the tank). Visual and PID/FID soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the former piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil located adjacent to the UST fill port and the overburden soil (at the northern end of the tank) was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean excavated soil and imported clean fill were used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from adjacent to the former UST fill port location and the overburden soil from the northern end of the tank did exhibit evidence of contamination and was transported to the soil staging area.

#### 2.2 SOIL SAMPLING

On November 6, 1997, after the UST removal, post-excavation soil samples 9057(B)N, 9057(B)DS, 9057(B)E, 9057(B)W1, 9057(B)W2 (Duplicate of 9057(B)W1), 9057(B)S, 9057(B)RF1, and 9057(B)RF2 were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 7 to 7.5-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9057(B)RF1 was collected from next to Building 9057 along the former return/feed line piping length of the excavation, which was approximately 20 feet long. Sample 9057(B)RF1 was collected beneath the 9057(B)N sample location from 8.5 to 9-feet bgs. Sample 9057(B)RF1 was collected approximately 15 feet east of Building 9057 along the former return/feed line piping length former return/feed line piping length of the secavation from 1 to 1.5-feet bgs. Sample 9057(B)RF2 was collected approximately 15 feet east of Building 9057 along the former return/feed line piping length and 9057(B)CBS2 were collected from the overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on November 6, 1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figures 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on November 6, 1997 from the UST excavation and from below the former location of piping associated with the UST contained non-detectable concentrations of TPHC.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the 9057(B) UST excavation at Building 9057 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-45 at Building 9057.

#### Legend of Sample identifications Camp Evans Area Wall Township, New Jersey

. • •	
В	Sample from the bottom of the excavation
W	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/reed/vent lines. Used at buildings where the return/reed lines and the vent lines were located close together and one
00NT1	sample could be collected for both lines
SCN11	Sample collected at a location of suspected contamination
(VV)⊏1 TD	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	lest pivitench
	Hazardous waste area building (former location)
	Above ground storage tank
910040101	Sample collected at the former location of an AST at the specified building
	Sample collected from a storm drain
SU/	Sample collected from a significant didition
CTR	Conner tubing run
	Clean soil nile

:

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
	4410107	44/40/07	Seil	Best Excavation	трис	004-04M-025
9057(B)RF1	11/6/97	11/10/97	3011 Soil	Post-Excavation		
9057(B)RF2	11/6/97	11/10/97	501	Post-Excavation		
9057(B)N	11/6/97	11/10/97	Soll	Post-Excavation		OQA-QAM-025
9057(B)DS	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(B)E	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	oqa-qam-025
9057(B)W1	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(B)S	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(B)OBS1	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
0057(B)OBS2	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9057(B)W2	11/6/97	11/10/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities [UST 9057(B)]
Building 9057, Camp Evans Area
Wall Township, New Jersey

Note:

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9057(B)RF1	3152 01	11/6/97	11/10 - 11/97	TPHC	177	ND	10.000	No
9057(B)RF2	3152.02	11/6/97	11/10 - 11/97	TPHC	177	209.70	10.000	No
9057(B)N	3152.11	11/6/97	11/10 - 11/97	TPHC	167	ND	10,000	No
9057(B)DS	3152.12	11/6/97	11/10 - 11/97	TPHC	161	ND	10,000	No
9057(B)E	3152.13	11/6/97	11/10 - 11/97	TPHC	167	ND	10,000	No
9057(B)W1	3152.14	11/6/97	11/10 - 11/97	TPHC	159	ND	10,000	No
9057(B)S	3152.15	11/6/97	11/10 - 11/97	TPHC	174	325.03	· 10,000	No
9057(B)OBS1	3152.16	11/6/97	11/10 - 11/97	TPHC	174	ND	10,000	No
9057(B)OBS2	3152.17	11/6/97	11/10 - 11/97	TPHC	176	ND	10,000	No
9057(B)W2	3152.18	11/6/97	11/10 - 11/97	TPHC	165	ND	10,000	No

#### Table 2 Post-Excavation Soil Sampling Results [UST 9057(B)] Building 9057, Camp Evans Area Wall Township, New Jersey

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons



9057.DWG ASC 01/19/99



#### APPENDIX A

### SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-45

(1297) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

1.5000 + 1800	A. Facility Name: US Army, Fort Monmouth, Evans Area					
	Facility Street Address: Building 1207, DCSOPS-BID					
	Municipality: Wall Township	County : <u>Monmouth</u>				
	Block: 240, 241 and 242 Lo	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02				
	Telephone Number : (732) 23	<u>9-2427</u>				
	B. Owner (RP)'s Name: US Army, CECOM					
	Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth					
	State: NJ Zíp: 07703 Telephone Number : (732) 532-5052					
	C. (Check as appropriate) D. (Complete all that apply)					
· · · · · · · · · · · · · · · · · · ·	• Site Investigation	<ul> <li>Assigned Case Manager : <u>Mr. Ian Curtis</u></li> <li>UST Registration Number : <u>(7 digits)</u>: 90029 - <u>45</u></li> </ul>				
2	Report (SIR) \$500 Fee	Incident Report Number (10 or 12 digits):				
	Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>				
	Report (RIR) \$1000 Fee					
	E. Certification by the Subsurface Evaluator:					
	The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes					
	Name: Kevin J. Phelan Signature: Kevin J. Ahelan UST Cert. No.: 0018436					
, 	Firm: Tetra Tech EM, Inc.	Firm's UST Cert. Number: US00457				
-	Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway				
	State: NJ Zip: 07	866 Telephone Number : (973) 9830507, Ext. 230				

<ul> <li>The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follow</li> <li>For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or</li> <li>For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or</li> <li>For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.</li> <li>"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 responsible for obtaining the information. I believe that the submitted information is true accurate, and complete. I am aware that there are significant divit penalties for knowingly ubmitting false, fraccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that I'l knowingly direct or authorize the violation of any statule, I am personally liable for the penalties."</li> <li>Name (Print or Type): Mr. Charles Appleby</li> <li>Title: <u>BRAC Environmental Coordinator, Evans Area</u></li> <li><u>NJDEP Subsurface Evaluator # 2056</u></li> <li>Signature:</li> </ul>	<b>F.</b> c	ertification by the Responsible Party(ies) of the Facility:
<ol> <li>For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or</li> <li>For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or</li> <li>For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.         <ul> <li>"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 responsible for obtaining the information. I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."</li> </ul> </li> <li>Name (Print or Type): Mr. Charles Appleby</li> <li>Title: <u>BRAC Environmental Coordinator, Evans Area</u></li> <li><u>NJDEP Subsurface Evaluator # 2056</u></li> <li>Signature:</li> </ol>	The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follow
<ul> <li>document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or</li> <li>For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or</li> <li>For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.</li> <li>"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 responsible for obtaining the information. I believe that the submitted information is true accurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowingl direct or authorize the violation of any statute, I am personally liable for the penalties."</li> <li>Name (Print or Type): Mr. Charles Appleby</li> <li>Title: <u>BRAC Environmental Coordinator, Evans Area</u></li> <li><u>NJDEP Subsurface Evaluator # 2056</u></li> <li>Signature:</li> </ul>	1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
<ul> <li>Stormitter abolg with the certification, of</li> <li>For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or</li> <li>For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.</li> <li>"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 responsible for obtaining the information, I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submitted false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowingl direct or authorize the violation of any statute, I am personally liable for the penalties."</li> <li>Name (Print or Type): Mr. Charles Appleby</li> <li>Title: <u>BRAC Environmental Coordinator, Evans Area</u></li> <li><u>NJDEP Subsurface Evaluator # 2056</u></li> <li><u>Signature:</u></li> </ul>		document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
"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 responsible for obtaining the information, I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submittin false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties." Name (Print or Type): Mr. Charles Appleby Title: <u>BRAC Environmental Coordinator, Evans Area</u> NJDEP Subsurface Evaluator # 2056 Signature:	2. 3.	For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
Industriation of any statute, I am personally liable for the penalities."         Name (Print or Type): Mr. Charles Appleby         Title: BRAC Environmental Coordinator, Evans Area         NJDEP Subsurface Evaluator # 2056         Signature:		"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 responsible for obtaining the information, I believe that the submitted information is true accurate, and complete. I am aware that there are significant civil penalties for knowingly submittin false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree i make a written false statement which I do not believe to be true. I am also aware that if I knowingly
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NJDEP Subsurface Evaluator # 2056 Signature:		Title: BRAC Environmental Coordinator, Evans Area
Signature:		NJDEP Subsurface Evaluator # 2056
		Signature:

#### APPENDIX B

## PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-45



PHOTO 1: View of the cleaned interior of UST-9057(B) (looking east/southeast).



PHOTO 2: View of UST-9057(B) being removed from the ground (looking southeast).



PHOTO 3: View of the sampling locations in the UST-9057(B) excavation (looking north).



PHOTO 4: View of UST-9057(B) (on the right) staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-45

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

Client:	U.S. Army			Lab. ID # :	3152		
	DPW. SELFM-P	W-EV		Date Rec'd:	07-Nov-97		
	Bldg. 173			Analysis Sta	10-Nov-97		
	Ft. Monmouth, l	NJ 07703		Analysis Con	11-Nov-97		
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARDT	i		DICAR #:			
Ext. Meth:	Shake			Location #:		BLDG. 9057	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3152.01	9057(B)-RF1	1.00	15.22	87.44	177	ND	
3152.02	9057(B)-RF2	1.00	15.31	86.91	177	209.70	
3152.03	9057(A)-RF1	1.00	15.82	86.85	171	ND	
3152.04	9057(A)-B1	1.00	15.16	86.47	、 179	ND	
3152.05	9057(A)-B2	1.00	15.40	86.65	176	ND	
3152.06	9057(A)-B3	1.00	15.19	86.98	178	ND	
3152.07	9057(A)-N	1.00	15.13	95.49	163	ND	
3152.08	9057(A)-E	1.00	15.14	87.80	177	ND	
3152.09	9057(A)-S	1.00	15.51	87.21	174	ND	
3152.1	9057(A)-W	1.00	15.19	92.36	168	ND	
3152.11	9057(B)-N	1.00	15.83	88.76	167	ND	
3152.12	9057(B)-DS	1,00	15.28	95.37	161	ND	
3152.13	9057(B)-E	1.00	15.29	92.06	167	ND	
3152.14	9057(B)-W1	1.00	15.57	95.14	159	ND	
3152.15	9057(B)-S	1.00	15.63	86.53	174	325.03	
3152.16	9057(B)-OBS1	1.00	15.57	86.68	174	ND	
3152.17	9057(B)-OBS2	1.00	15.24	87.44	176	ND	
3152.18	9057(B)-W2	1.00	15.49	92.06	165	ND	
METHOD BLANK	10-Nov-97	1.00	15.00	100.00	157	ND	

ND = Not Detected

MDL = Method Detection Limit

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Daniel K. Wright Laboratory Director

#### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-45

	Call to Mar	;1404-527-9639		•		REORD	ER ITEM # BLN
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SMC Environmental Services Group A Subsidiary of Science Management Corporation P.O. Box 859 Valley Forge, Perinsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 100 (0, 1997, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

#### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

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Isite Manager anie 15 Print or Type Name Here

#### APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-45

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D. Additional Descriptions for Materials Listed Abo	γ <b>υ</b>	E. Hand	ing Codes for Wa	astes Listed Above	
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# **GENERATOR CERTIFICATION**

I hereby certify to the best of my knowledge that the waste described on Hazardous Waste Manifest No. NHZOOB114______dated _____11-6-97_____.

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

- X723, Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: <u></c>
PPM halogens.</u>

I am duly authorized to sign said certification.

GENERATOR U.S. ARMY COMMUNICATIONS ELECTRONICS BAMANS CAMP BUENS A.	260
Generator's EPAIDNO. NJ3210020324	
0/0 JOSEPH FALLON BLOG 173 Address ATTN: JELFM- PW-EV FORT MONMOUTH, N.J. 07703	
Drint Name Charles Applely Signature	
Find Value Env. PROSTEC, SELFM-PW-EV	
Date 11-6-97	

X722:

United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9059 Camp Evans Area

NJDEP UST Registration No. 90029-24
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# FIGURES

Figure 1	Building 9059 - UST Removal Location Map
Figure 2	Building 9059 - UST Removal and Soil Sample Locations

# APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### EXECUTIVE SUMMARY

#### UST Closure

On October 1, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-24 (Fort Monmouth Identification No. 9059), was located west of Building 9059 in the Camp Evans area of Fort Monmouth. The UST was a 550-gallon No. 2 fuel oil tank. The UST fill port was located directly above the center of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed surrounding the fill port. Samples collected at the time the UST was removed contained total petroleum hydrocarbons (TPHC) concentrations ranging from non-detect to 213.33 milligrams per kilogram (mg/kg). The total amount of soil removed from the excavation was 5 cubic yards or less.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9059 area, as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-24 at Building 9059.

# 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-24, was closed at Building 9059 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on October 1, 1997. The UST was a steel 550-gallon tank containing No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-24 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-24 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

# 1.1 SITE DESCRIPTION

Building 9059 is located in the northeastern portion of the main section of the Camp Evans area of the Fort Monmouth Army Base as shown in Figure 1. UST No. 90029-24 was located west of Building 9059 and associated piping ran approximately 6 feet east from the UST to Building 9059. The UST fill port area was located directly above the center of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9059.

# 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the removal of associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation, staged on polyethylene sheeting, and examined for holes. No holes or punctures were observed by the Tetra Tech site manager and the SMC subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed or detected by the PID/FID except for soil located adjacent to the UST fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and tanks residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

# 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons Inc., in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOLLS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil adjacent to the UST fill port was contaminated. This soil was removed to the staging area for disposal off site at a later date and the clean excavated soil and imported clean fill were used to backfill the UST excavation.

# 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: David H. Daniels Employer: SMC Environmental Services Group Telephone No.: (215) 788-7844
   NJDEP Certification No.: 0010279
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

# 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit evidence of contamination.

# 2.2 SOIL SAMPLING

On October 1, 1997, following the removal of the UST, post-excavation soil samples 9059B1, 9059B2 (Duplicate of 9059B1), 9059E, 9059W, 9059S, 9059N, 9059RF, and 9059DS were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location at a depth of 4.5 to 5.0 feet below ground surface (bgs). Bottom samples 9051B1 and 9059B2 were collected from 0 to 6 inches beneath the former UST location, or 5.5 to 6.0 feet bgs. The deep sample, 9059DS, was collected from 7.5 to 8.0 feet bgs. Sample 9059RF was collected from next to Building 9059 along the former return/feed line piping length of the excavation, which was approximately 6 feet long. Sample 9059RF was collected from 2.5 to 3.0 feet bgs. Sample 9059OBS was collected from the overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on October 1, 1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

The post-excavation soil samples collected on October 1, 1997, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC ranging from non-detect to 213.33 mg/kg.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9059 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-24 at Building 9059.

# Legend of Sample identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
W	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
Ν	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method	
	···· ··· ···	······································	<u> </u>				
9059B1	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9059E	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9059\/	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
00505	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
90590 9050N	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9055N 0050R2	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9009DZ	10/1/07	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9009KF	10/1/37	10/3/07	Soil	Post-Excavation	TPHC	OQA-QAM-025	
9059DS	10/1/97	10/3/97	Soil	Post-Excavation	TPHC	OQA-QAM-025	

# Table 1 Summary of Post-Excavation Sampling Activities Building 9059, Camp Evans Area Wall Township, New Jersey

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
0050B1	3024.01	10/1/07	10/3 - 1/07	трис			10.000	No
9059E	3024.01	10/1/97	10/3 - 4/97	TPHC	164	205 73	10,000	No
9059W	3024.03	10/1/97	10/3 - 4/97	TPHC	163	ND	10,000	No
9059S	3024.04	10/1/97	10/3 - 4/97	TPHC	157	179.91	10,000	No
9059N	3024.05	10/1/97	10/3 - 4/97	TPHC	160	184.52	10,000	No
9059B2	3024.06	10/1/97	10/3 - 4/97	TPHC	158	ND	10,000	No
9059RF	3024.07	10/1/97	10/3 - 4/97	TPHC	170	ND	10,000	No
9059OBS	3024.08	10/1/97	10/3 - 4/97	TPHC	166	213.33	10,000	No
9059DS	3024.09	10/1/97	10/3 - 4/97	TPHC	149	ND	10,000	No

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons



9047.DWG ASC 01/19/99



# APPENDIX A

# SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-24

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Arr	A. Facility Name: US Army, Fort Monmouth, Evans Area								
Facility Street Address: Buil	Facility Street Address: Building 1207, DCSOPS-BID								
Municipality: Wall Townshi	p County : <u>Monmouth</u>								
Block: 240, 241 and 242 L	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02								
Telephone Number : (732) 23	9-2427								
B. Owner (RP)'s Name: US Army, CECOM									
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth									
State: <u>NJ</u> Zip: <u>07703</u>	State: NJ Zip: 07703 Telephone Number : (732) 532-5052								
C. (Check as appropriate)	<b>D.</b> (Complete all that apply)								
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>								
Report (SIR) \$500 Fee	<ul> <li>UST Registration Number : (7 digits): 90029 - <u>a</u> <u>4</u></li> <li>Incident Report Number (10 or 12 digits):</li> </ul>								
Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>								
Report (RIR) \$1000 Fee	Report (RIR) \$1000 Fee								
E. Certification by the Su	ibsurface Evaluator:								
The attached report conforms to the specific reporting requirements of N JAC 7.26E · Yes									
Name: Kevin J. Phe	Ian Signature: Kevin J. Phalan UST Cert. No.: 0018436								
Firm: Tetra Tech EM, Inc	Firm's UST Cert. Number: US00457								
Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway								
State: NJ Zip: 07	7866 Telephone Number : (973) 9830507, Ext. 230								
- 11									

State: <u>1</u> (NOTE et seq.)	NJ Zip: 07866 Telephone Number : (973) 9830507, Ext. 230 : Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-
<b>F.</b> Ce	ertification by the Responsible Party(ies) of the Facility:
The fol	lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056 Signature:
•	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703

# APPENDIX B

# PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-24



PHOTO 1: View of SMC personnel cutting open the top of UST-9059 (looking south/southeast).



PHOTO 2: View of the cleaned interior of UST-9059 (looking south/southeast).



PHOTO 3: View of the sampling locations in the UST-9059 excavation (looking northeast).



PHOTO 4: View of UST-9059 staged on the west side of Building 9061 awaiting disposal and labeled with all required information.

# APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-24

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

Client :	U.S. Army			Lab. ID # :	3024		
	DPW. SELFM-	PW-EV		Date Rec'd:		01-Oct-97	
	Bldg. 173			Analysis Star	rt:	03-Oct-97	
	Ft. Monmouth,	NJ 07703		Analysis Cor	04-Oct-97		
Analysis:	OQA-QAM-025			UST Reg. #:			
Matrix:	Soil			Closure #:			
Analyst:	D.DEINHARD'	Г		DICAR #:			
Ext. Meth:	Shake		·	Location #:		BLDG. 9059	
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)	
3024.01	9059-B1	1.00	15.21	95.40	162	ND	
3024.02	9059-E	1.00	16.02	89.69	164	205.73	
3024.03	9059-W	1.00	14.98	95.96	163	ND	
3024.04	9059-S	1.00	15.68	95.21	157	179.91	
3024.05	9059-N	1.00	16.10	91.50	160	184.52	
3024.06	9059-B2	1.00	15.80	94.18	158	ND	
3024.07	9059-RF	1.00	15.62	88.42	170	ND	
3024.08	9059-OBS	1.00	15.62	90.90	166	213.33	
3024.09	9059-DS	1.00	16.09	97.84	149	ND	
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METHOD BLANK	3-Oct-97	1.00	15.00	100.00	157	ND	

ND = Not Detected MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

# APPENDIX D

.

UST DISPOSAL CERTIFICATE UST NO. 90029-24

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SMC Environmental Services Group A Subadiary of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M.(P.M.) been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

# SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

15ito Manager ς

Print or Type Name Here

# APPENDIX E

# WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-24

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United States Army Fort Monmouth, New Jersey

# Underground Storage Tank Closure and Site Investigation Report

Building 9064 Camp Evans Area

NJDEP UST Registration No. 90029-27

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# APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### EXECUTIVE SUMMARY

#### UST Closure

On February 9, 1998, a fiberglass underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-27 (Fort Monmouth Identification No. 9064), was located west of Building 9064 in the Camp Evans area of Fort Monmouth. The UST was a 6,000-gallon No. 2 fuel oil tank. The UST fill port was located directly above the southern end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). One hole/fracture was noted in the UST, but the only evidence of potentially contaminated soil was observed surrounding the fill port of the tank. Samples collected at the time the UST was removed contained concentrations of total petroleum hydrocarbons (TPHC) ranging from non-detect to 342.30 milligrams per kilogram (mg/kg); however, it was suggested that a discharge from the fracture in the UST, over a period of several years, could have seeped along and underneath the concrete pad beneath the UST. As a result, Fort Monmouth approved the removal of the pad and sampling of the underlying soil. After the concrete pad was broken up and removed, additional samples were collected and contained TPHC concentrations ranging from non-detect to 728.88 mg/kg. The total amount of soil removed from the excavation was 40 cubic yards.

# Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean native soil from the Building 9064 area, as well as clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

# Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in remaining soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-27 at Building 9064.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-27, was closed at Building 9064 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on February 9, 1998. The UST was a fiberglass 6,000-gallon tank containing No. 2 fuel oil. A site location map is provided in Figure 1 showing the location of the UST removal relative to Building 9064.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-27 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that at least one historical discharge was associated with UST No. 90029-27 or its associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9064 is located at the northwest corner of the main section of the Camp Evans area of the Fort Monmouth Army Base (adjacent to Monmouth Boulevard), as shown in Figure 1. UST No. 90029-27 was located west of Building 9064 and associated piping ran approximately 6 feet east from the UST to Building 9064. The UST fill port area was located directly above the southern end of the tank.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST, associated piping, and a concrete pad above the UST. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to removal because of the low volatility of No. 2 fuel oil. After the removal of the concrete pad and purging of the associated piping, soil excavation continued to uncover the UST. Because of the large size of the UST, SMC decided to remove the tank from the ground prior to opening and cleaning the tank in order to avoid a confined space entry situation. Once the UST was removed and temporarily staged on the asphalt driveway, SMC cut open the tank with a circular saw and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads. After the UST had been cleaned and removed, SMC excavated and removed the associated piping.

After the UST was staged and cleaned, it was examined for holes. One hole/fracture was observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of potential contamination was observed except for soil located adjacent to the fill port. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was broken up and staged in a rolloff container from Marpal Disposal Company, in Tinton Falls, New Jersey for later pickup and disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate.

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results and total petroleum hydrocarbon (TPHC) results from post-excavation soil samples, soil located adjacent to the UST fill port was contaminated. This soil was removed to the staging area for disposal off site at a later date. Prior to the backfilling of the excavation, however, the suggestion was made that a discharge from the fracture in the underside of the UST could have run along and beneath the concrete pad over a period of several years and would result in contamination that might not be detected via standard sampling (at the edges of the pad). As a result, Fort Monmouth authorized the demolition and removal of the pad and post-excavation sampling beneath the former pad location. After post-excavation samples were collected which showed that no contamination was present that exceeded the soil cleanup standards, the excavation was backfilled with the clean excavated soil and imported clean fill.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office. The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
   NJDEP Hazardous Waste Hauler No.: S6247

# 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST fill port and the concrete pad beneath the tank, did exhibit evidence of potential contamination and was removed to the soil staging area; however, soil excavated from around the UST and associated piping, as well as the UST excavation sidewalls and bottom did not exhibit indications of contamination.

# 2.2 SOIL SAMPLING

On February 9, 1998, after the UST removal, post-excavation soil samples 9064W1, 9064E1, 9064W2, 9064E2, 9064N1, 9064N2 (duplicate of 9064N1), 9064DS, 9064RF1, and 9064S were collected from eight locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the concrete pad beneath the former UST location from 11 to 11.5-feet below ground surface (bgs). No bottom samples could be collected because of the concrete pad. Sample 9064DS was collected beneath the 9064N1 and 9064N2 sample location from 11.5 to 12-feet bgs. Sample 9064RF1 was collected from next to the edge of the UST excavation along the former return/feed line piping length of the excavation, which was approximately 6 feet long. Sample 9064RF1 was collected on March 13, 1998 from next to Building 9064 at a depth of 2 to 2.5-feet bgs. Sample 9064VL was collected along the excavation perimeter from the former vent line location at a depth of 1.5 to 2-feet bgs. Samples 9064OBS1, 9064OBS2, and 9064OBS3 were collected from the

overburden soil pile to verify that the pile was not contaminated and could be used as clean backfill for the excavation. All samples were analyzed for TPHC and total solids.

Analytical results for the original post-excavation samples did not reveal any contamination that exceeded 1,000 milligrams per kilogram TPHC, which is the NJDEP's criterion for additional soil removal/remediation or for required VOC sampling. However, because of the possibility of contamination beneath the tank, Tetra Tech and SMC demolished and then removed the concrete pad (with Fort Monmouth's approval) and collected post-excavation soil samples 9064CNFRM1, 9064CNFRM2 (Duplicate of 9064CNFRM1), and 9064CNFRM 3 on March 20, 1998 and 9064CNFRM4, 9064CNFRM5 (Duplicate of 9064CNFRM4), 9064CNFRM6, 9064CNFRM7, 9064CNFRM8, 9064CNFRM9, 9064CNFRM10, and 9064CNFRM11 on March 24, 1998 from a total of nine sampling locations. Samples were collected from 13.5 to 14-feet bgs or 14 to 14.5-feet bgs. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP's Field Sampling Procedures Manual" dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from nine locations on February 9, 1998, two locations on March 20, 1998, and seven locations on March 24, 1998. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected from the UST excavation and from below piping associated with the UST contained concentrations of TPHC ranging from non-detect to 728.88 milligrams per kilograms (mg/kg).

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9064 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-27 at Building 9064.

# Legend of Samp ات Identifications Camp Evans Area Wall Township, New Jersey

• • •	
В	Sample from the bottom of the excavation
W	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from beneath the former location of the return/feed lines of the UST
VL	Sample from beneath the former location of the vent line to the UST
OBS	Sample from the overburden soil pile of a UST excavation to determine if the soil can be used as backfill or must be transported to
	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCN11	Sample collected at a location of suspected contamination
(₩)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
	l est pit/trench
HWAB	Hazardous waste area building (tormer location)
ASI	Above ground storage tank
9105A5 (B1	Sample collected at the former location of an AST at the specified building
	Semple collected from a storm drain
30 9M	Sample collected from a signification Semple collected from a sidewall of a remodial everyation
OTD	Sample collecteu nom a sidewall of a remedial excavation
	Copper tubing run
032-1	Clean soil pile

.

OIn ID	Date	Date Analysis		0	Analytical	An - busin BA-thursh
	Collected	Started		Sample Type	Parameters	Analysis Method
00640864	2/0/09	2/20/08	€-il	Deat Execution	TDUC	
90040031	2/9/90	2/20/90	Soil	Post-Excavation		
90040002	2/9/90	2/20/90	Soll	Post-Excavation		
90040000	2/9/90	2/20/90	Soll	Post-Excavation		
9064771	2/9/98	2/20/98	Soli	Post-Excavation		
	2/9/98	2/20/98	Soli	Post-Excavation		
9064772	2/9/98	2/20/98	501	Post-Excavation	TPHC	
9004E2	2/9/98	2/20/98	501	Post-Excavation	TPHU	
9064N1	2/9/98	2/20/98	Soll	Post-Excavation	TPHC	UQA-QAM-025
9064N2	2/9/98	2/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064DS	2/9/98	2/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064RF1	2/9/98	2/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064S	2/9/98	2/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064VL	2/9/98	2/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064RF2	3/13/98	3/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064RF3	3/13/98	3/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM1	3/20/98	3/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM2	3/20/98	3/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM3	3/20/98	3/20/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM4	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM5	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM6	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM7	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM8	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM9	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM10	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9064CNFRM11	3/24/98	3/24/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities
Building 9064, Camp Evans Area
Wall Township, New Jersey
#### Table 2 Post-Excavation Soil Sampling Results Building 9064, Camp Evans Area Wali Township, New Jersey

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analyticat Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	NJDEP Soil Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
	<u></u>			"·····································				
9064OBS1	3329.01	2/9/98	2/20/98	TPHC	166	ND	10,000	No
9064OBS2	3329.02	2/9/98	2/20/98	TPHC	165	ND	10,000	No
9064OBS3	3329.03	2/9/98	2/20/98	TPHC	166	ND	10,000	No
9064W1	3329.04	2/9/98	2/20/98	TPHC	160	ND	10,000	No
9064E1	3329.05	2/9/98	2/20/98	TPHC	157	ND	10,000	No
9064W2	3329.06	2/9/98	2/20/98	TPHC	158	ND	10,000	No
9064E2	3329.07	2/9/98	2/20/98	TPHC	161	ND	10,000	No
9064N1	3329.08	2/9/98	2/20/98	TPHC	156	ND	10,000	No
9064N2	3329.09	2/9/98	2/20/98	TPHC	160	ND	10,000	No
9064DS	3329.10	2/9/98	2/20/98	TPHC	156	ND	10,000	No
9064RF1	3329.11	2/9/98	2/20/98	TPHC	160	ND	10,000	No
9064S	3329.12	2/9/98	2/20/98	TPHC	161	ND	10,000	No
9064VL	3329.13	2/9/98	2/20/98	TPHC	163	ND	10,000	No
9064RF2	3409.14	3/13/98	3/16 - 17/98	TPHC	170	213.78	10,000	No
9064RF3	3409.15	3/13/98	3/16 - 17/98	TPHC	173	275.28	10,000	No
9064CNFRM1	3423.01	3/20/98	3/20/98	TPHC	173	ND	10,000	No
9064CNFRM2	3423.02	3/20/98	3/20/98	TPHC	159	ND	10,000	No
9064CNFRM3	3423.03	3/20/98	3/20/98	TPHC	157	190.52	10,000	No
9064CNFRM4	3426.01	3/24/98	3/24/98	TPHC	164	ND	10,000	No
9064CNFRM5	3426.02	3/24/98	3/24/98	TPHC	171	ND	10,000	No
9064CNFRM6	3426.03	3/24/98	3/24/98	TPHC	163	ND	10,000	No
9064CNFRM7	3426.04	3/24/98	3/24/98	TPHC	187	ND	10,000	No
9064CNFRM8	3426.05	3/24/98	3/24/98	TPHC	162	ND	10,000	No
9064CNFRM9	3426.06	3/24/98	3/24/98	TPHC	187	ND	10,000	No
9064CNFRM10	3426.07	3/24/98	3/24/98	TPHC	173	728.33	10,000	No
9064CNFRM11	3426.08	3/24/98	3/24/98	TPHC	199	ND	10,000	No

#### Note:

Samples collected on 2/9/98 were originally analyzed between 2/10/98 and 2/12/98. The results of the original analysis showed all of the samples as ND except for 9064OBS2 which had a TPHC concentration of 324.30 mg/kg. However, after a malfunction was discovered in the laboratory instrumentation, the samples were re-analyzed on the above-noted date with the above noted results.

* Tetra Tech EM inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

Total petroleum hydrocarbons TPHC





#### APPENDIX A

# SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-27

(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

······					
A. Facility Name: US Arm	ny, Fort Monmouth, Evans Area				
Facility Street Address: Build	ding 1207, DCSOPS-BID				
Municipality: Wall Township	County : <u>Monmouth</u>				
Block: 240, 241 and 242	ot(s): <u>240 (55,01, 55.02, 55.03 &amp; 55.04), 241 (1), 242 (1.01 &amp; 1.02</u>				
Telephone Number : (732) 23	<u>9-2427</u>				
B. Owner (RP)'s Name: US Army, CECOM					
Street Address: DCSOPS-E	Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth				
State: <u>NJ</u> Zip: <u>07703</u>	Telephone Number : (732) 532-5052				
C. (Check as appropriate)	D. (Complete all that apply)				
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>				
Report (SIR) \$500 Fee	<ul> <li>UST Registration Number : (7 digits): 90029</li> <li>Incident Report Number (10 or 12 digits):</li> </ul>				
Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>				
Report (RIR) \$1000 Fee					
E. Certification by the Su	bsurface Evaluator:				
The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes				
Name: Kevin J. Phel	Name: Kevin J. Phelan Signature: "Yo a bring D. P. b. of a callST Cert. No. 0018436				
Firm: Tetra Tech EM. Inc. Firm's UST Cert. Number: US00457					
Firm Address: 1 Bank Street Suite 103 City: Rockaway					
State: NJ Zip: 07	866 Telephone Number : (973) 9830507. Ext. 230				

<b>F.</b> c	ertification by the Responsible Party(ies) of the Facility:
The fo	llowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:
1.	For a Corporation by a person authorized by a resolution of the board of directors to sign the
	document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be
2. 3.	For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.
	"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 responsible for obtaining the information, I believe that the submitted information is true,
	accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I
	make a written false statement which I do not believe to be true. I am also aware that if I knowingly
	direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area
	NJDEP Subsurface Evaluator # 2056
	n n
	Signature:

#### APPENDIX B

# PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-27



PHOTO 1: View of the UST-9064 being uncovered (looking south/southeast).



PHOTO 2: View of the UST-9064 being removed from the ground (looking south/southwest).



PHOTO 3: View of the sampling locations in the UST-9064 excavation (looking south/southwest).



PHOTO 4: View of a section of UST-9064 in the rolloff container waiting to be crushed prior to ultimate disposal (looking north).



PHOTO 5: View of SMC removing a section of the concrete pad located beneath UST-9064 prior to confirmatory sampling (looking north).



PHOTO 6: View of the confirmatory sampling activities in the UST-9064 excavation (looking northeast).

## APPENDIX C

# SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-27

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Client :	U.S. Army			Lab. ID # :		3329
	DPW. SELFM-1	PW-EV		Date Rec'd:		09-Feb-98
	Bldg. 173			20-Feb-98		
	Ft. Monmouth,	NJ 07703		Analysis Cor	nplete:	20-Feb-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARD	ſ		DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9064
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3329.01	9064-OBS1	1.00	15.27	92.61	166	ND
3329.02	9064-OBS2	1.00	15.21	93.65	165	ND
3329.03	9064-OBS3	1.00	15.02	94.39	166	ND
3329.04	9064-W1	1.00	15.21	96.71	160	ND
3329.05	9064-E1	1.00	15.29	98.05	157	ND
3329.06	9064-W2	1.00	15.38	96.88	158	ND
3329.07	9064-E2	1.00	15.64	93.06	161	ND
3329.08	9064-N1	1.00	15.78	95.42	156	ND
3329.09	9064-N2	1.00	15.37	95.56	160	ND
3329.10	9064-DS	1.00	15.67	95.98	156	ND
3329.11	9064-RF1	1.00	15.48	94.65	160	ND
3329.12	9064-S	1.00	15.37	94.95	161	ND
8329.13	9064-VL	1.00	15.88	90.87	163	ND
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ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright Laboratory Director

Client :	U.S. Army	Lab. ID # :	3409
	DPW. SELFM-PW-EV	Date Rec'd:	13-Mar-98
	Bldg. 173	Analysis Start:	16-Mar-98
	Ft. Monmouth, NJ 07703	Analysis Complete:	17-Mar-98
Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	•
Analyst:	D.DEINHARDT	DICAR #:	
Ext. Meth:	Shake	Location #:	BLDGS. 9089

						9054
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3409.01	9089-B1	1.00	15.11	83.69	186	810.71
3409.02	9089-B2	1.00	15.35	88.64	173	ND
3409.03	9089-CNFRM1	1.00	15.05	88.21	177	ND
3409.04	9089-B3	1.00	15.32	92.81	165	ND
3409.05	9089-B4	1.00	15.52	92.50	164	ND
3409.06	9089-N	1.00	15.42	85.31	179	ND
3409.07	9089-S	1.00	15.09	87.25	178	ND
3409.08	9089-W	1.00	15.83	88.84	167	ND
3409.09	9089-E	1.00	15.66	93.02	161	ND
3409.10	9089-CNFRM2	1.00	15.69	86.80	173	ND
3409.11	9089-CNFRM3	1.00	15.41	82.98	184	ND
3409.12	TP-9089(UST1)	1.00	15.94	85.19	173	' ND
3409.13	TP-9089(UST2)	1.00	15,38	84.49	181	ND
3409.14	9064-RF2	1.00	15.32	90.24	170	213.78
3409.15	9064-RF3	1.00	15.21	89.48	173	275.28
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METHOD BLANK	16-Mar-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Aright Laboratory Director

Client :	U.S. Army			Lab. ID # :		3423
	DPW. SELFM-PV	W-EV		Date Rec'd:		20-Mar-98
	Bldg. 173			Analysis Star	rt:	20-Mar-98
	Ft. Monmouth, N	IJ 07703		Analysis Con	nplete:	20-Mar-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARDT			DICAR #:		
Ext. Meth:	Shake			Location #:		Bldg. 9064
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3423.01	9064-CNFRM1	1.00	15.42	87.87	173	ND
3423.02	9064-CNFRM2	1.00	17.10	86.53	159	ND
3423.03	9064-CNFRM3	1.00	16.33	91.78	157	190.52
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ND = Not Detected

MDL = Method Detection Limit

Daniel KZWright Laboratory Director

Client :	U.S. Army			Lab, ID # :		3426
	DPW. SELFM-PW	-EV		Date Rec'd:		24-Mar-98
	Bldg. 173			Analysis Star	rt:	24-Mar-98
	Ft. Monmouth, N	I 07703		Analysis Con	nplete:	24-Mar-98
Analysis:	OQA-QAM-025			UST Reg. #:		
Matrix:	Soil			Closure #:		
Analyst:	D.DEINHARDT			DICAR #:		
Ext. Meth:	Shake			Location #:		BLDG. 9064
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3426.01	9064-CNFRM4	1.00	15.73	91.31	164	ND
3426.02	9064-CNFRM5	1.00	15.13	90.71	171	ND
3426.03	9064-CNFRM6	1.00	15.42	93.42	163	ND
3426.04	9064-CNFRM7	1.00	15.52	80.92	187	ND
3426.05	9064-CNFRM8	1.00	15.36	94.19	162	ND
3426.06	9064-CNFRM9	1.00	15.38	81.78	187	ND
3426.07	9064-CNFRM10	1.00	15.41	88.07	173	723.33
3426.08	9064-CNFRM11	1.00	15.45	76.33	199	ND
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ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

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Laboratory Director

### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-27

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SMC Environmental Services Group A Subschery of Science Management Corporation P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700



This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M./R.M. on 2/9/92, the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

#### SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

te Manager Print or Type Name Here

#### APPENDIX E

# WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-27

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# GENERATOR CERTIFICATION

I hereby certify to the best of my knowledge that the waste described on Non Hazardous Waste Manifest No. NH2010(9?9) dated 2.198,

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- L-21: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- L-22:  $\bigcirc$  Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- L-23: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- L-24: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- L-25: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- L-26: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- L-28. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results:_____PPM halogens.

I am duly authorized to sign said certification.

Generator U.S. Alleny Communication. Electronics Common Camp Evans. Ano Generator's EPA ID No. ルン、コストロロマのコング 0/0 JOSEPH FALLON BLAG 173. FORT NOULMOTH. 07707 Address ATTN SiFFM an ____ Signature___ Print Name SELFA-PW-EU Title 2.19.9 Date _

United States Army Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 9079 Camp Evans Area

NJDEP UST Registration No. 90029-28

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EXEC	CUTIVI	E SUMMARY	.1
1.0	UNDI	ERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES	.2
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	1.2	Underground Storage Tank Excavation And Cleaning	.3
	1.3	Underground Storage Tank Transportation And Disposal	.3
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4.0	CON	CLUSIONS AND RECOMMENDATIONS	.6

#### TABLES

Table 1	Summary of Post-Excavation Sampling Activities
Table 2	Post-Excavation Soil Sampling Results

#### FIGURES

Figure 1	Building 9079 - UST Removal Location Map
Figure 2	Building 9079 - UST Removal and Soil Sample Locations

#### APPENDICES

- Appendix A Signed Site Assessment Summary
- Appendix B Photographs of UST Closure
- Appendix C Soil Sample Analytical Data Package
- Appendix D UST Disposal Certificate
- Appendix E Waste Manifest for Off-site Transport of UST Contents

#### EXECUTIVE SUMMARY

#### UST Closure

On December 18, 1997, a steel underground storage tank (UST) was closed by removal at the Camp Evans area of the U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey. The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-28 (Fort Monmouth Identification No. 9079), was located south of Building 9079 in the Camp Evans area of Fort Monmouth. The UST was a 550-gallon No. 2 fuel oil tank. The UST fill port was located directly above the western end of the tank.

#### Site Assessment

The site assessment was performed by Tetra Tech EM Inc. (Tetra Tech) and SMC Environmental Services Group (SMC). No holes were noted in the UST and the only evidence of potentially contaminated soil was observed adjacent to the UST fill port and in the overburden soil. Samples collected at the time the UST was removed contained non-detectable concentrations of total petroleum hydrocarbons (TPHC). The total amount of soil removed from the excavation was 20 cubic yards.

#### Site Restoration

After receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with clean soil imported from the New Jersey Sand and Gravel Company. The excavation site was then restored to its original condition.

#### Conclusions and Recommendations

Based on post-excavation soil sampling results, TPHC concentrations in soil do not exceed the NJDEP soil cleanup criterion for total organic contaminants of 10,000 mg/kg, or the more stringent soil cleanup criteria of 1,000 mg/kg TPHC used by Fort Monmouth, at the former location of the UST or associated piping. No further action is proposed with regard to the closure and site assessment of UST No. 90029-28 at Building 9079.

#### 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90029-28, was closed at Building 9079 at the Camp Evans area of U.S. Army Fort Monmouth, Fort Monmouth, Wall Township, New Jersey on December 18, 1997. The UST was a steel 550-gallon tank with fiberglass sheathing on the exterior and contained No. 2 fuel oil.

The UST removal was performed in accordance with the Fort Monmouth UST Management Plan (S.O.P. Number 19), which had previously been approved by the NJDEP. The signed site assessment summary form for UST No. 90029-28 is included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soil, and soil sample analytical results, Tetra Tech has concluded that no significant historical discharges are associated with UST No. 90029-28 or associated piping.

This report was prepared based on information collected at the time of UST closure. Section 1 of this UST closure and site investigation report provides a site description and summarizes UST removal activities. Section 2 describes site investigation activities, including field screening and soil sampling. Section 3 presents the post-excavation soil sampling results. Conclusions and recommendations are presented in Section 4 of this report.

#### 1.1 SITE DESCRIPTION

Building 9079 is located in the main section of the Camp Evans area of the Fort Monmouth Army Base (on the south side of Avenue "A"), as shown in Figure 1. UST No. 90029-28 was located south of Building 9079 and associated piping ran approximately 4 feet north from the UST to Building 9079. The UST fill port area was located directly above the western end of the tank. A site map is provided in Figure 1 showing the location of the UST removal relative to Building 9079.

#### 1.2 UNDERGROUND STORAGE TANK EXCAVATION AND CLEANING

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping. All free product present in the piping was purged with compressed air into the UST. The UST was not purged prior to the removal of the piping because of the low volatility of No. 2 fuel oil. After the purging of the associated piping, soil excavation continued to uncover the UST. Once the UST was uncovered, SMC cut open the tank with a nonsparking pneumatic cutter and the remaining contents of the tank were removed with drum vacuum equipment. SMC completed cleaning the UST by wiping the interior out with oil absorbent pads.

After the UST was cleaned, it was removed from the excavation and examined for holes. No holes or punctures were observed by the Tetra Tech subsurface evaluator. Appendix B provides photographs of the tank. After the UST was removed, SMC excavated and removed the associated piping. Soil around the UST was screened visually and with a photoionization detector (PID) and flame ionization detector (FID) for contamination. No evidence of contamination was observed or detected by the PID/FID except for soil located adjacent to the UST fill port and the overburden soil. Visual and PID/FID soil screening was also performed along piping associated with the UST. No contamination was noted anywhere along the piping length.

The sludges and residues removed from the UST were transported by Lorco Petroleum Company to its NJDEP-approved petroleum recycling and disposal facility in Old Bridge, New Jersey. Appendix E provides a copy of the waste manifest for the off-site transport of the tank contents.

#### 1.3 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The cleaned tank was transported to Mazza and Sons, Inc. in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. Appendix D provides a copy of the UST Disposal Certificate. Prior to transport, the UST was labeled with the following information:

- Site of origin
- Contact person
- NJDEP UST facility identification number
- Name of transporter and contact person
- Destination site and contact person

#### 1.4 MANAGEMENT OF EXCAVATED SOILS

Post-excavation soil sampling locations are shown in Figure 2 and discussed in Section 2.2. Based on PID/FID air monitoring results, soil adjacent to the UST fill port and the overburden soil was contaminated. This soil was removed to the staging area for disposal off site at a later date and the imported clean fill was used to backfill the UST excavation.

#### 2.0 SITE INVESTIGATION ACTIVITIES

In accordance with NJDEP's "Technical Requirements for Site Remediation" and "Field Sampling Procedures Manual," Tetra Tech and SMC personnel conducted the site assessment. The site investigation was managed by Tetra Tech and performed by SMC. All analyses were performed and results reported by the U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory operated by TECOM-Vinnell Services, Inc. (TVS). All sampling was performed under the direct supervision of a NJDEP certified subsurface evaluator in accordance with methods described in NJDEP's "Field Sampling Procedures Manual" dated 1992. Sampling frequency and parameters analyzed complied with applicable regulations at the date of UST closure specified in NJDEP-BUST's document "Interim Closure Requirements for Underground Storage Tank Systems" dated October 1990; revisions dated November 1, 1991. All records of site investigation activities are maintained by Tetra Tech and the Fort Monmouth Department of Public Works (DPW) Environmental Office.

The following parties participated in UST closure and site investigation activities:

- Subsurface Evaluator: Kevin J. Phelan Employer: Tetra Tech EM Inc. Telephone No.: (973) 983-0507 NJDEP Certification No.: 0018436
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory Contact Person: Daniel K. Wright Telephone No.: (732) 532-4359
   NJDEP Company Certification No.: 13461

 Hazardous Waste Hauler: Lorco Petroleum Company Contact Person: Dan MacKay Telephone No.: (732) 721-0900
 NJDEP Hazardous Waste Hauler No.: S6247

#### 2.1 FIELD SCREENING/MONITORING

Visual screening and field screening using a PID/FID were performed by a NJDEP certified subsurface evaluator to identify potentially contaminated material. Soil excavated from around the UST and associated piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination; however, soil located adjacent to the UST fill port and the overburden soil did exhibit indications of contamination and was removed to the soil staging area.

#### 2.2 SOIL SAMPLING

On December 18, 1997, after UST removal, post-excavation soil samples 9079B1, 9079B2 (Duplicate of 9079B1), 9079DS, 9079E, 9079W, 9079N, 9079S, and 9079R/F/VL were collected from seven locations in the UST excavation. Figure 2 presents the sampling locations. Excavation sidewall samples were collected at the edge of the former UST location, and bottom samples were collected from 0 to 6-inches beneath the former UST location, or 8 to 8.5-feet below ground surface (bgs). The sidewall samples were collected from 7.5 to 8-feet bgs. Sample 9079DS was collected beneath the 9079B1 and 9079B2 sample location from 10.5 to 11-feet bgs. Sample 9079R/F/VL was collected from next to Building 9079 along the former return/feed line piping length of the excavation, which was approximately 4 feet long. Sample 9079R/F/VL was collected from 0 to 0.5-feet bgs. In addition, samples 9079SCNT1 and 9079SCNT2 were collected from locations that appeared to be contaminated based on visual observations. Sample 9079SCNT1 was collected from 7 to 7.5-feet bgs and sample 9079SCNT2 was collected from 3.5 to 4-feet bgs. All samples were analyzed for TPHC and total solids.

Post-excavation soil samples were collected in accordance with standard sampling procedures specified in NJDEP=s Field Sampling Procedures Manual@ dated 1992. Samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory in Fort Monmouth, New Jersey, for analysis. A summary of post-excavation sampling activities, including parameters analyzed for, is provided in Table 1.

#### 3.0 SOIL SAMPLING RESULTS

To evaluate soil conditions after removal of the UST and associated piping, post-excavation soil samples were collected from seven locations on December 18, 1997. All samples were analyzed for TPHC and total solids. Post-excavation sampling results were compared to the NJDEP residential direct contact soil cleanup criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994) and the more stringent soil cleanup criterion of 1,000 mg/kg TPHC used by Fort Monmouth. A summary of the analytical results and comparison to the NJDEP soil cleanup criterion is provided in Table 2. Soil sampling locations are shown in Figure 2. The analytical data package is provided in Appendix C.

All of the post-excavation soil samples collected on December 18, 1997, from the UST excavation, from below piping associated with the UST, and from areas of suspected contamination contained non-detectable concentrations of TPHC.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Analytical results for all post-excavation soil samples for soil remaining in the UST excavation at Building 9079 were below the NJDEP soil cleanup criterion for required VOC analysis.

Based on post-excavation sampling results, soil containing TPHC concentrations exceeding the NJDEP soil cleanup criterion for organic contaminants of 10,000 mg/kg, or the more stringent Fort Monmouth soil cleanup criterion of 1,000 mg/kg TPHC, do not exist in the former location of the UST or associated piping; therefore, no further action is proposed with regard to the closure and site assessment of UST No. 90029-28 at Building 9079.

#### Legend of Sample Identifications Camp Evans Area Wall Township, New Jersey

В	Sample from the bottom of the excavation
Ŵ	Samples from the west sidewall of the excavation
E	Samples from the east sidewall of the excavation
N	Samples from the north sidewall of the excavation
S	Samples from the south sidewall of the excavation
RF	Sample from heneath the former location of the return/feed lines of the LIST
VI	Sample from beneath the former location of the vent line to the LIST
OBS	Sample from the overburden soil pile of a LIST excevation to determine if the soil can be used as backfill or must be transported to
000	the contaminated soil stockpile
N21	Sample collected from the north sidewall on the second day of sampling (from a particular UST excavation) first sample (from that
	particular sidewall or area of the excavation) (NOTE: The "21" designation can be used with any of the letter combinations listed
	above).
FPS	Soil located directly adjacent to the fill port of the tank ("Fill Port Soil").
BFP	Soil located beneath the fill port of the tank ("Beneath Fill Port")
9116CSP	Contaminated soil pile from the UST-9116 excavation
DS	Deep Sample
9196BE1A	Geoprobe boring performed on the east side of the UST-9196 excavation to investigate contamination from the leaking UST. Last
	number denotes the boring number and last letter indicates which sample in the sequence.
RFL/B6	Sample from remedial excavation of a leaking remote fill line/what area of the excavation the sample was collected.
RF(CT)	Samples was collected from return feed lines consisting of copper tubing.
RFL(2)	Samples collected from a second remote fill line for a particular UST excavation
RB1	Remedial excavation for a particular building. The second letter and number designate the particular area of the excavation where
	the sample was collected
CNFRM	Confirmatory sample to confirm that contamination has been removed
CNFM	Another designation for a confirmatory sample
R/F/VL	Return/feed/vent lines. Used at buildings where the return/feed lines and the vent lines were located close together and one
	sample could be collected for both lines
SCNT1	Sample collected at a location of suspected contamination
(W)E1	Sample collected from the eastern sidewall of the western half of the excavation (remedial excavation).
TP	Test pit/trench
HWAB	Hazardous waste area building (former location)
AST	Above ground storage tank
9105ASTB1	Sample collected at the former location of an AST at the specified building
DEL	Delineation sample to document the extent of contamination
SD	Sample collected from a storm drain
SW	Sample collected from a sidewall of a remedial excavation
CTR	Copper tubing run
CSP-1	Clean soil pile

.

Sample ID	Date Collected	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
	40/40/07				7010	
9079B1	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079B2	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079DS	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079E	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079W	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079N	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079SCNT1	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079S	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079SCNT2	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
9079R/F/VL	12/18/97	12/22/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Table 1
Summary of Post-Excavation Sampling Activities
Building 9079, Camp Evans Area
Wall Township, New Jersey

						NJDEP Soil		
Sample ID	Sample Laboratory ID	Sample Date	Analysis Date(s)	Analytical Method Used	Method Detection Limit (mg/kg)	Result (mg/kg)	Cleanup Criteria* (mg/kg)	Exceeds Cleanup Criteria
9079B1	3248.01	12/18/97	12/22 - 23/97	TPHC	166	ND	10,000	No
9079B2	3248.02	12/18/97	12/22 - 23/97	TPHC	166	ND	10,000	No
9079DS	3248.03	12/18/97	12/22 - 23/97	TPHC	158	ND	10,000	No
9079E	3248.04	12/18/97	12/22 - 23/97	TPHC	171	ND	10,000	No
9079W	3248.05	12/18/97	12/22 - 23/97	TPHC	161	ND	10,000	No
9079N	3248.05	12/18/97	12/22 - 23/97	TPHC	188	ND	10,000	No
9079SCNT1	3248.06	12/18/97	12/22 - 23/97	TPHC	173	ND	10,000	No
9079S	3248.07	12/18/97	12/22 - 23/97	TPHC	172	ND	10,000	No
9079SCNT2	3248.09	12/18/97	12/22 - 23/97	TPHC	174	ND	10,000	No
9079R/F/VL	3248.10	12/18/97	12/22 - 23/97	TPHC	157	ND	10,000	No

Table 2 Post-Excavation Soil Sampling Results Building 9079, Camp Evans Area Wall Township, New Jersey

.

Note:

* Tetra Tech EM Inc. used the NJDEP limit of 1,000 ppm of TPHC before sampling for volatiles is required as a soil cleanup criteria.

ND Not detected

TPHC Total petroleum hydrocarbons





9079.DWG -ASC- 07/12/99

### APPENDIX A

## SIGNED SITE ASSESSMENT SUMMARY FORM UST NO. 90029-28
(12/97) New Jersey Department of Environmental Protection Site Remediation Program

# UST Site/Remedial Investigation Report Certification Form

A. Facility Name: US Army, Fort Monmouth, Evans Area							
Facility Street Address: Building 1207, DCSOPS-BID							
Municipality: Wall Township County : Monmouth							
Block: 240, 241 and 242 L	ot(s): 240 (55.01, 55.02, 55.03 & 55.04), 241 (1), 242 (1.01 & 1.02						
Telephone Number : (732) 23	<u>9-2427</u>						
<b>B.</b> Owner (RP)'s Name: <u>U</u>	B. Owner (RP)'s Name: US Army, CECOM						
Street Address: DCSOPS-BID, Bldg. 1207 City : Fort Monmouth							
State: <u>NJ</u> Zíp: <u>07703</u>	State: NJ Zip: 07703 Telephone Number : (732) 532-5052						
<b>C</b> . (Check as appropriate)	(Check as appropriate) <b>D.</b> (Complete all that apply)						
Site Investigation	Assigned Case Manager : <u>Mr. Ian Curtis</u>						
Report (SIR) \$500 Fee	<ul> <li>UST Registration Number : (7 digits): 90029 - <u>38</u></li> <li>Incident Report Number (10 or 12 digits):</li> </ul>						
Remedial     Investigation	• Tank Closure Number C(N)9 (7 characters): <u>Approved by Case Manager</u>						
Report (RIR) \$1000 Fee	Report (RIR) \$1000 Fee						
E. Certification by the Su	bsurface Evaluator:						
The attached report	conforms to the specific reporting requirements of N.J.A.C. 7:26E : Yes						
Name: Kevin J. Phe	lan Signature: Kerrin J. Phelan UST Cert. No.: 0018436						
Firm: Tetra Tech EM. Inc.	Firm's UST Cert. Number: US00457						
Firm Address: 1 Bank Stre	et, Suite 103 City: Rockaway						
State: NJ         Zip: 07866         Telephone Number : (973) 9830507, Ext. 230							

State:   (NOTE et seq.	NJ Zip: <u>07866</u> Telephone Number : <u>(973) 9830507, Ext. 230</u> :: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 )
<b>F.</b> Ce The fol	ertification by the Responsible Party(ies) of the Facility: lowing certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:
1. 2. 3.	For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, State, federal or other public agency by either a principal executive officer or ranking
	"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 responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."
	Name (Print or Type): Mr. Charles Appleby
	Title: BRAC Environmental Coordinator, Evans Area NJDEP Subsurface Evaluator # 2056
	Signature:
	Company Name: US Army, CECOM, DCSOPS-BID, Fort Monmouth NJ, 07703
	Date: <u>November 30, 2000</u>

## APPENDIX B

PHOTOGRAPHS OF UST CLOSURE UST NO. 90029-28



PHOTO 1: View of the sampling locations in the UST-9079 excavation (looking east).



PHOTO 2: View of the sampling locations in the UST-9079 excavation (looking west).



PHOTO 3: View of UST-9079 on the west side of Building 9061 awaiting disposal and labeled with all required information.

#### APPENDIX C

## SOIL SAMPLE ANALYTICAL DATA PACKAGE UST NO. 90029-28

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

Client :	U.S. Army	Lab. ID # :	3248
	DPW. SELFM-PW-EV	Date Rec'd:	19-Dec-97
	Bldg. 173	Analysis Start:	22-Dec-97
	Ft. Monmouth, NJ 07703	Analysis Complete:	23-Dec-97
Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	
Analyst:	D. Deinhardt	DICAR #:	
Ext. Meth: Shake		Location #:	Bldg. 9079,9019

Sample		Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3248.01		9079-B1	1.00	15.63	90.63	166	ND
3248.02		9079-B2	1.00	15.34	92.26	166	NÐ
3248.03		9079-DS	1.00	15.65	95.11	158	ND
3248.04		9079-E	1.00	15.39	89.49	171	ND
3248.05		9079-W	1.00	15.93	91.64	161	ND
3248.06		9079-N	1.00	15.24	82.22	188	ND
3248.07		9079-SCNT1	1.00	15.26	88.78	173	ND
3248.08		9079-S	1.00	15.49	88.19	172	ND
3248.09		9079-SCNT2	1.00	15.85	84.99	174	ND
3248.10		9079-R/F/VL	1.00	15.55	96.33	157	ND
3248.11	9019	CNFRM1	1.00	15.44	96.34	158	ND
3248.12	9019	CNFRM2	1.00	15.59	88.32	171	ND
3248.13	9019	2072 CNRM3	1.00	15.39	96.60	158	ND
3248.14	9019	9079-CNFRM4	1.00	15.40	96.06	159	1449.05
	·						
METHOD BLA	ANK	22-Dec-97	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

1

Daniel K. Wright Laboratory Director

### APPENDIX D

UST DISPOSAL CERTIFICATE UST NO. 90029-28

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Sent by:

SMC Environmental Services Group A Subsidiary of Science Management Corporation

P.O. Box 859 Valley Forge, Pennsylvania 19482 Telephone (610) 265-2700

ENV1RONMENT

CERTIFICATE OF NON-HAZARDOUS VESSEL FACILITY: **VESSEL:** 

This letter is to confirm that the vessel/vessels at the above referenced location has been physically entered (if necessary), degreased, washed/cleaned, and the material contained within has been completely removed and properly disposed. As of 3:00 A.M/R.M. on 2:00 A.M/R.M., the above said vessel is certified gas free and has been cleaned following recommended procedures in API PUBLICATION 2015. Due to conditions that SMC Environmental Services Group has no control over, this certification is valid only until the vessel is received by the designated steel recycling facility. SMC Environmental Services Group will not be held liable for any damages which may occur after certification.

## SMC ENVIRONMENTAL SERVICES GROUP SIGNATURE OF CERTIFICATION

Signature

site Manager 5

Print or Type Name Here

#### APPENDIX E

WASTE MANIFEST FOR OFF-SITE TRANSPORT OF UST CONTENTS UST NO. 90029-28

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		16. GENERATOR'S CERTIFICATION: I certity the	materials described ab	ove on this manifest are p Signature	et subject to federal reg	ulations for i	reporting pro	xper disp	osal of Házardous W	laste.
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## **GENERATOR CERTIFICATION**

I hereby certify to the best of my knowledge that the waste described on Hazardous Waste Manifest No. <u>379</u> dated <u>1231617</u>

is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

- X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.
- X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.
- X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.
- X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.
- X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.
- X726: The following used and unused waste oils: metal working oils; turbine lubricating oils, diesel lubricating oils, and quenching oils.
- X728. Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

*This used oil product was tested on site, before pumping with a dexsil C.D.T. test kit. Results: _____ PPM halogens.

I am duly authorized to sign said certification.

Generator USAFMY COMMANICATIONS ELECTRINICS COMMO COMP GUINS ARAT
Generator's EPA ID No. NJ3210020324
GO JOYETH FAILON BLOG MI FAST MENDER NO 0703
DINKEL 11. DILET
Print Name Signature
TitleENV + how work the only chemica
Date 11 6,47