Post-Removal Report Underground Storage Tank Closure 1,000 Gallon No. 2 Fuel Oil UST No. 0024 Building 1435 Fort Devens, Massachusetts

ATEC File: 37.07.91.00451 Contract No. DAK31-91-D-0015



Prepared for:

United States Army Directorate of Contracting Building 227 Fort Devens, Massachusetts

Attn: Mr. Robert J. Kruzewski, Contracting Officer

February 3, 1992



Solid & Hazardous Waste Site Assessments Remedial Design & Construction Underground Tank Management Asbestos Surveys & Analysis Hydrogeologic Investigations & Monitoring Analytical Testing / Chemistry Industrial Hygiene / Hazard Communication Environmental Audits & Permitting Exploratory Drilling & Monitoring Wells

February 3, 1992

Mr. Robert J. Kruzewski, Contracting Officer United States Army Directorate of Contracting Building 227 Fort Devens, Massachusetts 01433-5340

RE: Post-Removal Report Underground Storage Tank Closure 1,000 Gallon No. 2 Fuel Oil Building 1435 - UST No. 0024 Fort Devens, Massachusetts ATEC File: 37.07.91.00451

Mr. Kruzewski:

Attached is a report by ATEC Associates, Inc. (ATEC), detailing the results of the closure of one (1) 1,000 gallon, single wall, steel Underground Storage Tank (UST) referenced as UST No. 0024, located at property known as Building 1435, Fort Devens, Massachusetts. The purpose of the closure was to excavate the UST, to evaluate the potential for the presence of oil and hazardous material at the site.

ATEC appreciates the opportunity to be of service in this matter. If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

ATEC Associates, Inc.

Maryon Krous for

Mark E. Baldi Environmental Scientist

B. D. 3\_\_\_\_

James B. O'Brien Group Manager

Marta J. Nover

Marta J. Nover Environmental Consulting Division Manager

## EXECUTIVE SUMMARY

On January 9 and 10, 1992, ATEC closed one (1) 1,000 gallon, single wall, steel Underground Storage Tank (UST) located at property known as Building 1435, Fort Devens, Massachusetts. The purpose of the closure was to excavate the UST, evaluate the potential for the presence of oil and hazardous material at the site.

ATEC's conclusions are as follows:

- 1. Upon excavation and removal, the tank was observed to be in good condition with no signs of perforations or punctures. However, the tank was moderately corroded.
- 2. Ground water was not encountered within the excavation.
- 3. Visual inspection of the excavation revealed all excavated soils required to free the tank to be visibly contaminated.
- 4. Ten (10) soil samples were obtained from the excavation for field screening and field analysis utilizing a PID and NDIR Analysis respectively. PID readings ranged from 1.2 ppm to 200 ppm. NDIR results ranged from 77.9 ppm to 3,838.8 ppm.
- 5. Two (2) soil samples were obtained from the excavation for laboratory analysis for TPH utilizing USEPA Extraction Method 9071 and Analysis Method (draft) 9073. Analytical results for LSS-1 obtained from the west wall of the excavation revealed 4,430 ppm TPH. Analytical results for LSS-2 obtained from the bottom of the excavation revealed 3,380 ppm TPH.
- 6. One (1) composite, soil sample (LSS-3) was obtained from stockpiled soils for laboratory analysis. Analytical results for LSS-3 revealed 4,350 ppm TPH.

ATEC's recommendations are as follows:

- 1. Advance soil borings and install ground water monitoring wells to determine the vertical and horizontal extent of contamination. Continuous split spoon sampling and analysis will be conducted utilizing field analysis techniques, i.e. Photoionization Detector and Non-Dispersive Infrared Analysis, and laboratory analysis to document soil contamination levels as specified in the Hazardous Waste Containment Plan.
- 2. Additionally excavated soils and stockpiled soils should be laboratory analyzed for Total Petroleum Hydrocarbons, Volatile Organic Compounds, PCBs, 13 TCLP Metals, flashpoint, sulfide reactivity, cyanide reactivity, and corrosivity for disposal classification.

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#### POST-REMOVAL REPORT

## United States Army Reserve Center Building 1435 Fort Devens, Massachusetts ATEC Project No. 37.07.91.00451

#### **1.0 INTRODUCTION**

This Post-Removal Report details the results of the closure of one (1) 1,000 gallon, single wall, steel, Underground Storage Tank (UST) referenced as UST No. 0024, located at property known as Building 1435, Fort Devens, Massachusetts. The purpose of the closure was to excavate the UST, evaluate the potential for the presence of oil and hazardous material at the site. The closure of this UST was conducted on January 9 and 10, 1992.

The basic Project Work Scope included:

- 1. Procurement/administration of all federal, state and local permits, manifests, regulations, etc., associated with UST system closure.
- 2. Excavating, venting, cleaning, transporting, and disposing of one (1) 1,000 gallon UST by appropriately licensed contractors/facilities.
- 3. Disposal of UST slops at a licensed facility.
- Field screening and analysis of soil in the excavations by Photoionizing Detector (PID) and field analyzed with a portable Non-Dispersive Infrared (NDIR) Analyzer, to identify evidence release of oil and hazardous materials from the UST, if any.

- Laboratory Analysis of soil sampled from the UST excavation by a US EPA certified laboratory for Total Petroleum Hydrocarbons (USEPA Extraction Method 9071 and Analysis Method (draft) 9073).
- 6. Preparation of a Post-Removal Report, to include assimilation of information gathered; major findings; and conclusions.

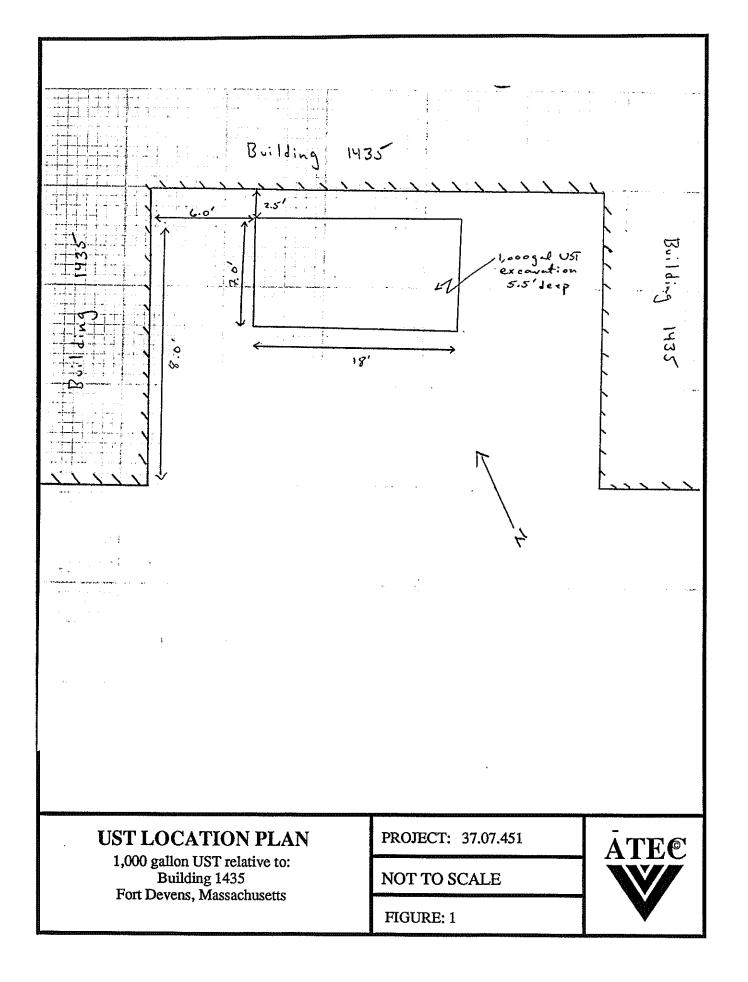
### 2.0 SUBSURFACE STORAGE TANK EXCAVATION AND REMOVAL

On January 9 and 10, 1992, one (1), 1,000 gallon, subsurface, No. 2 fuel oil, storage tank was excavated and removed from the site. The UST was located adjacent to the southwest side of the Building 1435. Site topography is level.

Soils in the excavation consisted primarily of light to medium brown, fine sand with trace gravel. The tank was covered by approximately 1.5 feet of soil. The bottom of the excavation was approximately 5.5 feet below grade. Ground water was not encountered. All excavated soils required to free the tank were visibly contaminated.

Associated piping was drained, and tank connections were removed. UST No. 0024 was estimated to contain 34 gallons of No. 2 fuel oil and gasoline. Approximately 14 gallons of fuel oil was removed on January 6, 1992, and transported to a licensed T.S.D.F. (Beede Waste Oil Corporation). Approximately 20 gallons of fuel oil and sludges were removed and drummed on January 9, 1992 for transportation at a later date. Tank openings were capped, and the tank was removed from the excavation. The tank was observed to be in good condition with no perforations or punctures. However, the tank was observed to be moderately corroded. Following venting of the tank, an access way was cut in the end of the tank to allow entry for cleaning. It was then entered and vacuumed/wiped clean of any residual slops.

The scrap tank was removed from the site on January 10, 1992 and transported to the Contractor's yard, Lake George Street, Fort Devens for temporary storage. The tank was disposed at Tombarello & Sons, a licensed Massachusetts tank yard, on January 24, 1992. A copy of the disposal receipt is included in Appendix G.



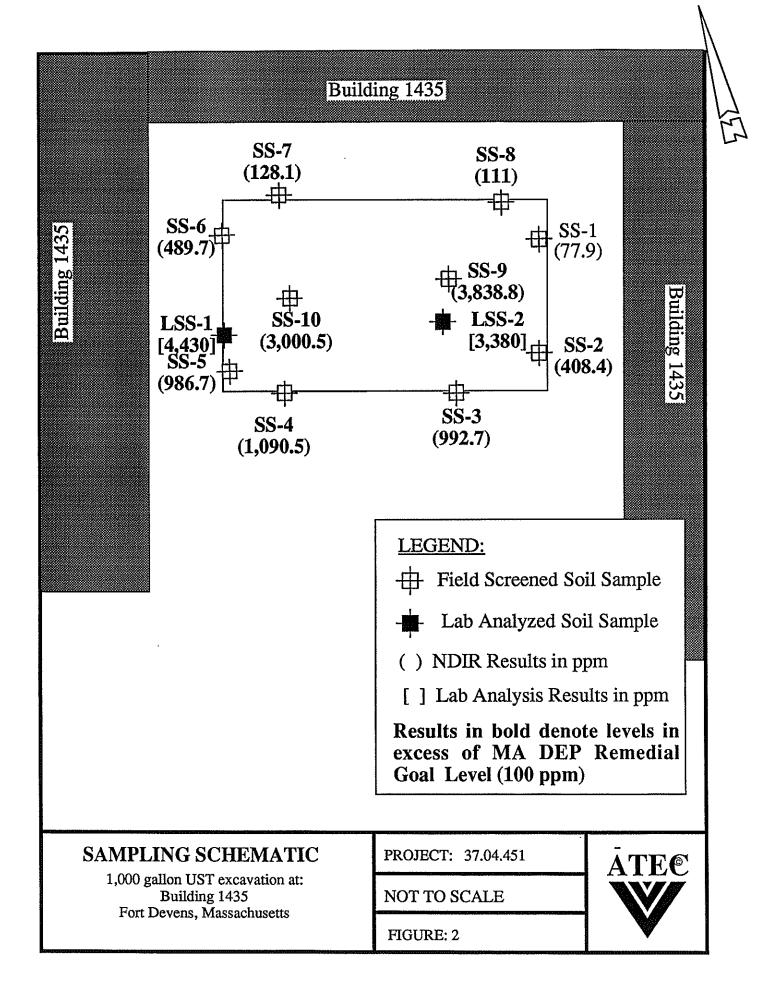
#### 3.0 SAMPLING AND ANALYSIS PLAN

Ten (10) soil samples were obtained from the excavation for field screening with a Photoionizing Detector (PID) and field analyzed with a Non-Dispersive Infrared (NDIR) Analyzer. The PID field screening for Volatile Organic Compound (VOC) vapors was conducted with an HNu photoionizer utilizing the jar headspace screening protocol outlined in the Hazardous Materials Containment Plan. The NDIR field screening for Total Petroleum Hydrocarbons (TPH) was conducted with a Horiba OCMA 220, utilizing the procedures outlined in the Hazardous Materials Containment Plan.

Eight (8) of the samples (SS-1 to SS-8) were obtained from the excavation walls at a depth of approximately 2.0 - 3.0 feet below grade. Two (2) of the samples (SS-9 and SS-10) were obtained from the bottom of the excavation at a depth of approximately 5.5 feet below grade. Two (2) composite soil samples (Stock-1 and Stock-2) were obtained from stockpiled soils for PID and NDIR field screening. Sampling locations for the excavation are depicted on the Sampling Schematic attached as Figure 2.

Two (2) soil samples (LSS-1 and LSS-2) were obtained from the excavation for laboratory analysis. Soil Sample LSS-1 was obtained from the west wall of the excavation, in the vicinity of the excavation closest to the former fill pipe. Soil sample LSS-2 was obtained from the bottom of the excavation. One (1) composite, soil sample (LSS-3) was obtained from stockpiled soils required to free the tank. These samples were analyzed for TPH utilizing USEPA Extraction Method 9071 and Analysis Method (draft) 9073. Sampling locations are depicted on the Sampling Schematic attached as Figure 2.

The appropriate chain of custodies are included in Appendix E.



#### 4.0 ANALYTICAL RESULTS

The results from analysis with the Photoionization Detector (PID) and the Non-Dispersive Infrared (NDIR) Analyzer of the ten (10) samples obtained from the excavation are as follows:

Sample No.	PID (ppm)	NDIR(ppm)
 SS-1	1.4	77.9
SS-2	4.5	408.4
SS-3	5.3	992.7
SS-4	3.2	1,090. 5
SS-5	7.5	986.7
SS-6	6.0	489.7
SS-7	1.2	128.1
SS-8	2.3	111.0
SS-9	200	3,838.8
SS-10	10.2	3,000.5
Stock-1	11.0	3,500.8
Stock-2	5.2	2,279.8

TABLE 2 - PID AND NDIR RESULTS

N.D. = None Detected

Laboratory analytical results of the two (2) soil samples obtained from the excavation revealed 4,430 ppm TPH for LSS-1, and 3,380 ppm TPH for LSS-2. Laboratory analysis of the one (1) soil sample obtained from the stockpiled soils revealed 4,350 ppm TPH for LSS-3. See Appendix D.

### 5.0 CONCLUSIONS AND RECOMMENDATIONS

ATEC's conclusions are as follows:

- 1. Upon excavation and removal, the tank was observed to be in good condition with no signs of perforations or punctures. However the tank was moderately corroded.
- 2. Ground water was not encountered within the excavation.
- 3. Visual inspection of the excavation revealed all excavated soils required to free the tank to be visibly contaminated.
- 4. Ten (10) soil samples were obtained from the excavation for field screening and field analysis utilizing a PID and NDIR Analysis respectively. PID readings ranged from 1.2 ppm to 200 ppm. NDIR results ranged from 77.9 ppm to 3,838.8 ppm.
- 5. Two (2) soil samples were obtained from the excavation for laboratory analysis for TPH utilizing USEPA Extraction Method 9071 and Analysis Method (draft) 9073. Analytical results for LSS-1 obtained from the northwest wall of the excavation revealed 4,430 ppm TPH. Analytical results for LSS-2 obtained from the bottom of the excavation revealed 3,380 ppm TPH.
- 6. One (1) composite, soil sample (LSS-3) was obtained from stockpiled soils for laboratory analysis. Analytical results for LSS-3 revealed 4,350 ppm TPH.

ATEC's recommendations are as follows:

1. Advance soil borings and install ground water monitoring wells to determine the vertical and horizontal extent of contamination. Continuous split spoon sampling and analysis will be conducted utilizing field analysis techniques, i.e. Photoionization Detector and Non-Dispersive Infrared Analysis, and laboratory analysis to document soil contamination levels as specified in the Hazardous Waste Containment Plan.

 Additionally excavated soils and stockpiled soils should be laboratory analyzed for Total Petroleum Hydrocarbons, Volatile Organic Compounds, PCBs, 13 TCLP Metals, flashpoint, sulfide reactivity, cyanide reactivity, and corrosivity for disposal classification.

#### 6.0 CERTIFICATIONS & QUALIFICATIONS

This report is addressed to Mr. Robert J. Kruzewski, Contracting Officer of Directorate of Contracting, United States Army, Fort Devens with respect to property known as Building 1435, Fort Devens, Massachusetts (the site).

ATEC certifies that to the best of their professional knowledge, information and belief:

The investigation of the site described in the report was performed by Mark E. Baldi, Quality Control Manager; and James B. O'Brien, Group Manager (site investigators) who are qualified to make the investigations and formulate the opinions herein set forth.

The site investigators are familiar with the current provisions of the State of Massachusetts General Law Chapter 148; 527 CMR 9.00; and 502 CMR 3.00.

The site investigators are knowledgeable regarding the types of industrial, manufacturing, commercial or other processes or operations which might reasonably be expected to generate, use, treat, store or dispose of oil or hazardous material.

The site investigators have reviewed the recent history of the site and have considered the potential for the generation, use, treatment, storage, or disposal of oil or hazardous material by (a) the uses presently associated with the site and (b) to the extent ascertainable by inquiry, as noted.

In January 1992, the site investigators studied the site and, except as herein qualified, the

areas in the vicinity of the site to assess the possible presence of oil and hazardous material at the site.

The following qualifications apply to ATEC's opinion:

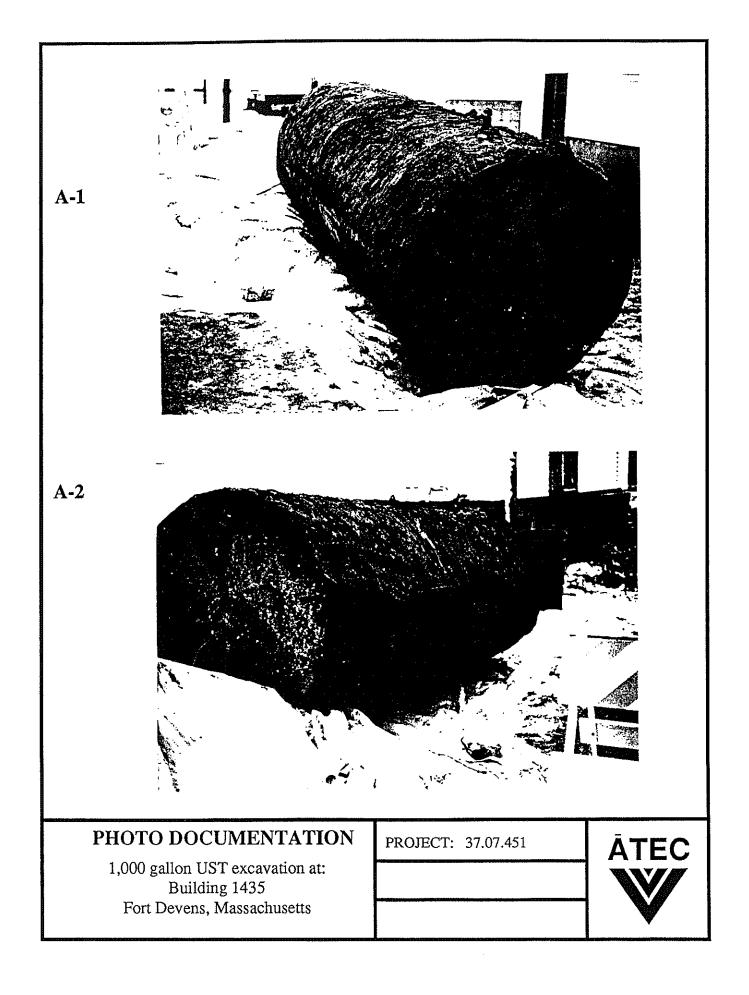
Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This warranty is in lieu of all other warranties either expressed or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

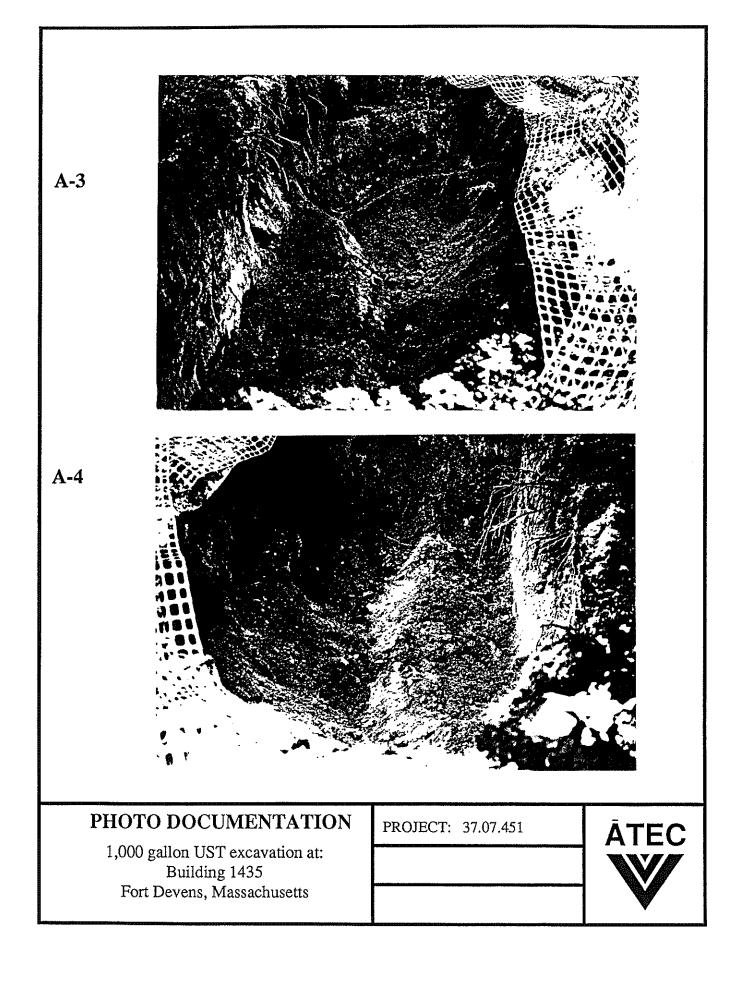
The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and locations given. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

#### APPENDIX A: PHOTOGRAPHIC DOCUMENTATION

## Building 1435, Fort Devens, Massachusetts ATEC File No. 37.07.91.00451

- A-1: One (1) side of removed tank.
- A-2: Opposite side of removed tank.
- A-3: Excavation as viewed from east, facing west.
- A-4: Excavation as viewed from west, facing east.





APPENDIX B: UST CLOSURE CHECKLIST

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UST-CLOSURE O/C CHECK LIST	11-5T NG	24 - 15	12 a 1435 Fart	Devens	
1000 gal No. 2 Fr	el				
DEFINABLE FEATURE	DATE	TIME	MEASUREMENTS		NOTES
Calibrate PID & LEL/O2 meters	1/9/92	8:30		~~~~	Site Topography: level
		[			
Drain & flush piping & pumps	1/0/97	9:30			
Excavate to top of tank	1 1 - 1 - 7	9:00			Depth to tank: $ , \leq'$
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		T4: 11:45	6 - 99,	5.5	
		T5: /1:00	6-996	20.9%	
		T6: 17:15	0.99	70.982	
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Close open excavation (if applicable)						*******
Close open excavation (it applicable)						
Restore surface and rope off						
Remove nubbish/debris						
Transport hazardous material off-site:					Amount	Classification
Note amount/classification						
Make copies of manifests, permits,						
and disposal receipts.						
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APPENDIX C - OCMA 220 DATA SHEETS

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APPENDIX D - LABORATORY REPORTS

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In Response To The Future

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# **'ERTIFICATE OF ANALYSIS**

Date: 1/17/92 Job: 101 Account: 95659 Received: 1/13/92

): ATEC ENVIRONMENTAL CO. 62 Accord Park Drive Norwell, MA 02061

Project: TANK 24

tn: Mr. Mark Baldi

ample Jumber	Method Number	Parameter	Result	Unit	Sample Description
:010101	EPA-160.3 EPA-418.1	Total Solids TPH/IR (Dry Wt.)	83 4430	% mg/kg	LSS-1
:010102	EPA-160.3 EPA-418.1	Total Solids TPH/IR (Dry Wt.)	84 3380	% mg/kg	LSS-2
010103	EPA-160.3 EPA-418.1	Total Solids TPH/IR (Dry Wt.)	89 4350	% mg∕kg	LSS-3

David Dickinson Laboratory Manager

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#### nvironmental Science Services

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532 Atwells Avenue, Providence, Rhode Island (02909 (401) 421 (0398 Fax, (401) 421 (5731

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APPENDIX E - CHAIN OF CUSTODY FORMS

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APPENDIX F - HAZARDOUS WASTE MANIFESTS

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PRESS HARD - YOU ARE WRITING THROUGH EIGHT COPIES. SEE REVERSE SIDE FOR DIRECTIONS

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	NVIRONMENTAL F F HAZARDOUS WA e Winter Street				
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Plaistow, NH 03865 N	H'D'018958140	12. Containers	13. 603	1382 59461	
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To be Recycled GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consign	ment are fully and accurately descri	ibed above by a	Recycle	2	S N 0
proper shipping name and are classified/packed, marked, and labeled, and are in a according to applicable international and national government regulations.					STAT
If I am a large quantity generator, I certify that I have a program in place to reduce and that I have selected the practicable method of treatment, storage, or disposal	currently available to me which min	nimizes the present and futu	re threat to human he	alth and the environ-	m
ment; OR, if I am a small quantity generator, I have made a good faith effort to mir can afford.	imize my waste generation and sel	ect the best waste manager	nent method that is a	vailable to me and that I	
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). Discrepancy Indication Space					
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). Facility Owner or Operator: Certification of receipt of hazardous mat	erials covered by this manifes	t except as noted in Item	19.	· ·	
Printed/Tuned Name	Signatura			Date	_

Month Day Year

APPENDIX G - PERMITS/CERTIFICATIONS

The Commonwealth of Massachusetts DEPARTMENT OF PUBLIC SAFETY DIVISION OF FIRE PREVENTION PER · Villennit FOR REMOVAL AND TRANSPORTATION TO APPROVED TANK YARD DIG NUMBE In accordance with the provisions of Chapter 148, G.L. as provided in Section 38A this permit is granted to fist Bele Name: <u>Ater Environmental Associates Inc.</u> Full name of person, firm or Corporation To transport underground steel storage tank(s) to Approved tank yard# 1 49 State clearly type of Inert gas used in steel storage tank steel tank: hod Name and address of contractor FDID# 1491 disposing tank ATE C 62 Accord Pork Dr. Norvell N/A Fee paid \$ Location to which tank be transported arda This permit will expire 31 Jan 1992 .E) official granting (Head of Fire Dept.) 201 Ħ 1

Tank 24 Building 1435

	STEORAGE TANK
ME AND ADDRESS JOHN C. TOMBARELLO OF 207 MARSTON SI.	& SONS
PROVED TANK YARD LAWRENCE, MASS. ON	
PROVED TANK YARD NO. $1490$	
ink Yard Ledger 502 CMR 3.03(4) Number: 2200022	
certify under penalty of law I have personally examined the underground steel storage tank livered to this "approved tank yard" by firm, corporation or partnership $\underline{A / C} \underline{C} \underline{E} \underline{K} \underline{V} \underline{V}$ and accepted same in conformance with Massachusett's Fire Prevention gulation 502 CMR 3.00 Provisions for Approving Underground Steel Storage Tank dismantling yards. valid permit was issued by LOCAL Head of Fire Department FDID# $\underline{A / C} \underline{C} \underline{E} \underline{V} \underline{V}$ is tank to this yard.	
me and official title of approved tank yard owner	or owners authorized representative:
Moranto CPG	$\frac{1-24-92}{\text{DATE SIGNED}}$
SIGNATURE TITLE	
is signed receipt of disposal must be returned to the local head of the fire department $1011 \angle 2 2 2$ pursuant to 502 CMR 3:00. (EACH TANK MUST HAVE A RECEIPT OF DISPOSAL)	
IRM F.P. 291 (rev. 9/88)	
DIMENSIONS	Tank Removed From
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Width Length	Building 1435
Tank 1 4 8 x - 10	(no. stréet)
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Tank 2 X	(city or town)
Tank 3 X	Fire Department
Tank 4 X	Permit # (if applicable)
Tank 5 X	
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