



DAMES & MOORE

A DAMES & MOORE GROUP COMPANY

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**UNDERGROUND STORAGE TANK
CLOSURE REPORT
MASS DEVELOPMENT
OPERATIONS DIVISION
DEVENS COMMERCE CENTER
DEVENS, MASSACHUSETTS**

UST NO. T-3800

DCC 981276 DM

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UNDERGROUND STORAGE TANK CLOSURE REPORT
UST NO. T-3800

EXECUTIVE SUMMARY

The subject 500-gallon steel underground storage tank (UST) T-3800 located adjacent to Building #3800 at the former Devens airfield was utilized to store #2 heating oil and was installed in 1966 by the United States Army. The tank was exposed, cleaned, and removed by Fleet Environmental Services on October 26, 1998. No groundwater, free product, or soil staining was observed in the excavation. Field screening methods, including soil jar headspace screening and Petroflag analysis on soil adjacent to the tank and associated piping indicated limited hydrocarbon impact. One composite confirmatory soil sample consisting of five aliquots was collected from the four tank grave sidewalls and the excavation base and analyzed for Extractable Petroleum Hydrocarbons (EPH) by Massachusetts Department of Environmental Protection (MADEP) Method 98-1. The analytical data was compared to applicable reportable concentrations for soil (RCS-1) which are outlined in the Massachusetts Contingency Plan (MCP) {310 CMR 40.0000}. Hydrocarbon contamination in excess of RCS-1 levels was not identified. Based upon the field screening results and the laboratory data, the tank grave was backfilled, compacted and the grass area restored.

UNDERGROUND STORAGE TANK CLOSURE REPORT
UST NO. T-3800

1.0 INTRODUCTION

This underground storage tank (UST) Closure report has been prepared in accordance with the Commonwealth of Massachusetts UST Closure Assessment Manual, dated April 6, 1996. Project specifications prepared for Mass Development at the Devens Commerce Center (DCC) including the UST Closure Protocol Addendum to Tier 1A Permit dated June 14, 1996, Project Specifications dated March 24, 1998, and the Release Abatement Measure Plan dated June 11, 1998, were also followed for the Multiple UST Removal project at the former United States Army base located in Devens, Massachusetts.

2.0 BACKGROUND

Tank T-3800 was located adjacent to Building #3800 at the former U.S. Army Base airfield in Devens, Massachusetts. Upon the closure of Fort Devens, ownership of the UST was transferred from the U.S. Army to Mass Development at the Devens Commerce Center. Pursuant to the Work Scope outlined in Administrative Consent Order ACO-CE-96-3001 issued by the Massachusetts Executive Office of Environmental Affairs to Mass Development for waste site cleanup in connection with the Fort Devens redevelopment, 99 USTs have been removed under this project.

The subject UST was located adjacent to Building #3800 as illustrated in Figure 1. Global Positioning System (GPS) coordinates for the former tank location are 3034752 northing and 627235 easting. GPS data was collected in order to verify the tank location in the absence of current physical reference points. The United States Army installed the subject 500-gallon steel UST in 1966. The tank was used to store #2 heating fuel and was coated with an outer tar "skin". The associated tank piping included two ½-inch copper lines leading to a boiler inside of the building.

UNDERGROUND STORAGE TANK CLOSURE REPORT
UST NO. T-3800

3.0 UST REMOVAL

The subject UST was uncovered, cleaned and removed on October 26, 1998. Fleet Environmental Services (Fleet) of Lakeville, Massachusetts removed the top of the tank using a Komatsu Excavator in order to enter and clean the inside of the tank. A vacuum truck was used to remove the remaining #2 fuel oil, tank sludge, and residual water and product generated during tank cleaning activities. After cleaning procedures, the tank was pulled from the excavation and inspected by the Devens Fire Department. The Closure Permit for the subject UST is provided in Appendix A. The tank was crushed by the excavator, stored at Fleet's onsite staging area located in a fenced area on Antietam Street, and subsequently hauled for disposal to WM Reisner Scrap Metal in Clinton, Massachusetts. Liquid generated during tank closure was transferred from the vacuum truck to a storage tanker located at Fleet's staging area and later hauled for disposal to Global Oil in Revere, Massachusetts. Appendix B includes documentation for oil disposal generated from the subject UST and various other onsite #2 fuel oil USTs. Soil removed during the tank excavation was stockpiled adjacent to the tank grave and the hole was temporarily secured with CAUTION tape. No impacted material that required off-site disposal was generated during the tank removal.

4.0 FIELD OBSERVATIONS

Upon removal, the UST was observed to be in good condition with no rust, no holes, and the bituminous outer coat intact. Groundwater, free product or visual evidence of stained soils was not observed in the excavation. In order to better view and screen the entire tank grave, the excavator removed sloughed soil along the excavation base and sidewalls. The tank grave base and four sidewalls were initially screened in at least two different locations using a Photoionization Detector (PID).

UNDERGROUND STORAGE TANK CLOSURE REPORT
UST NO. T-3800

One composite soil sample, consisting of five aliquots from the base of the excavation and four sidewalls at a depth of 3' - 5' below ground surface (bgs), was collected using a stainless steel sample spoon and bowl. Prior to sample collection, the spoon and bowl were decontaminated with non-phosphate soap and water. The composite sample was placed in amber glass soil jars for soil headspace, Petroflag and laboratory analyses. Figure 1 presents PID headspace and Petroflag results as well as confirmatory sample locations.

Soil jar headspace screening analysis was conducted in accordance with Appendix A of the Massachusetts Department of Environmental Protection UST Closure Manual. Two jars for soil headspace were covered with aluminum foil and set aside for a minimum of ten minutes. No jar headspace reading greater than 9.9 parts per million (ppm) was recorded.

Petroflag hydrocarbon analysis was then conducted on ten grams of soil from the initial composite sample. Petroflag analysis consists of a liquid extraction and analysis of soil combined with a chemical reagent. Petroflag is most effective for heavy oils such as #2 and #4 fuel oils and gives an estimate of hydrocarbon concentrations in a given sample. A Petroflag reading of 215 ppm for the composite sample was recorded.

5.0 LABORATORY ANALYTICAL RESULTS

Based on the PID and Petroflag screening results, no further excavation was conducted and the composite sample was sent to AMRO Laboratory in Merrimack, New Hampshire. The composite sample was analyzed by Massachusetts Department of Environmental Protection (MADEP) Method 98-1 for Extractable Petroleum Hydrocarbons (EPH). As outlined in the project specifications, a list of four fuel oil-related polynuclear aromatic hydrocarbons (PAHs), which are specific target analytes of the C₁₁-C₂₂ aromatic hydrocarbon range, are included with the EPH analytical data and presented in Appendix C. Analytical results for the composite sample

UNDERGROUND STORAGE TANK CLOSURE REPORT
UST NO. T-3800

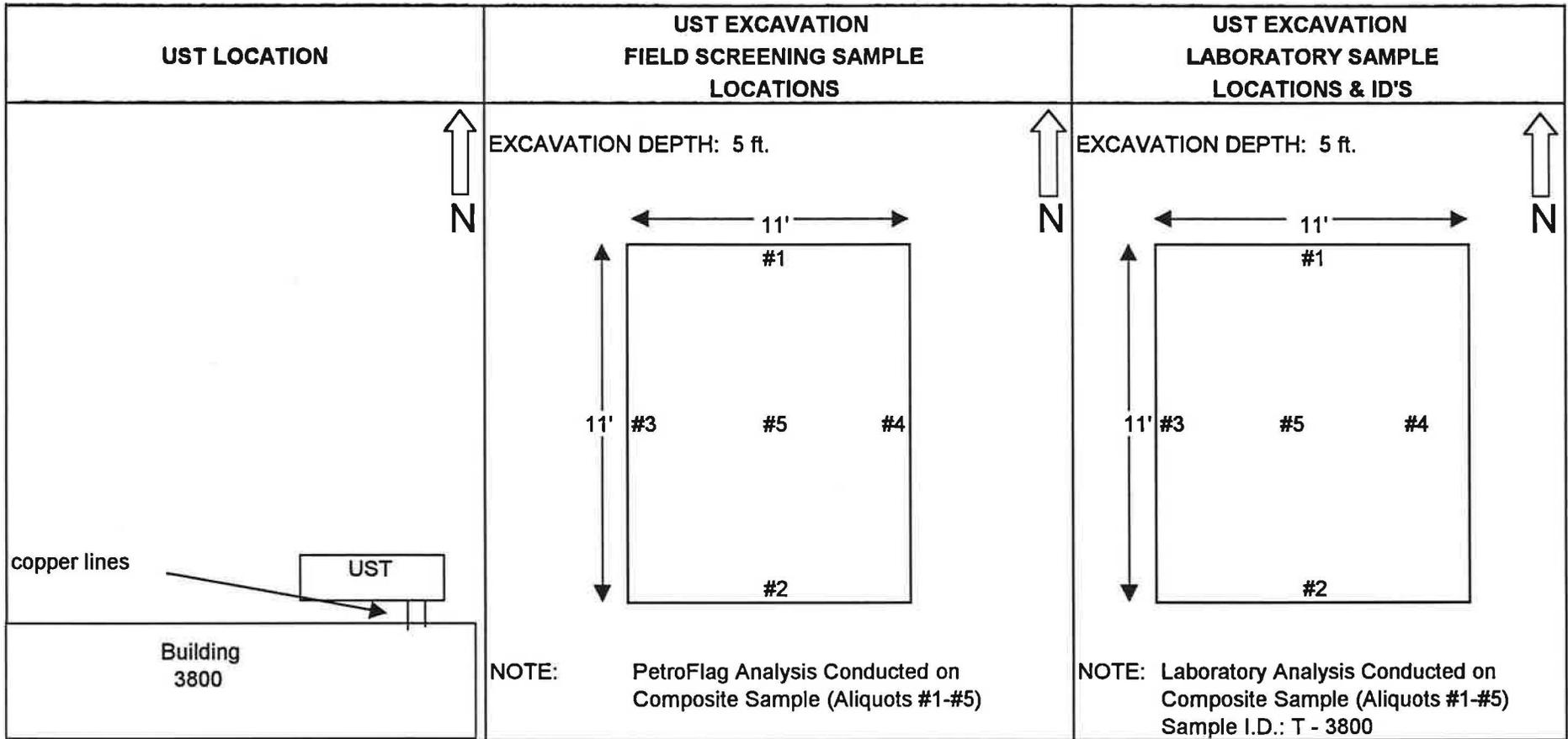
indicated the absence of hydrocarbon impact in excess of the most stringent MADEP Massachusetts Contingency Plan Reportable Concentrations for soil (RCS-1).

6.0 BACKFILLING

Stockpiled soil and off-site backfill material were used to fill the excavation. The hole was backfilled in approximately 18-inch lifts, sprayed with water, and compacted using the excavator bucket and a vibrating roller. No nuclear density compaction tests were completed during backfilling procedures. The excavation was backfilled to grade and the grass area restored.

7.0 CONCLUSIONS

Removal of the subject UST was conducted in accordance with the Commonwealth of Massachusetts UST Closure Assessment Manual and the project specifications as outlined for Mass Development at the Devens Commerce Center. The tank was cleaned, removed, inspected, crushed, and hauled to a scrap metal yard. Residual product, sludge and water was removed with a vacuum truck and was hauled to an oil recycling facility in bulk quantity with other on-site #2 fuel UST liquids. No groundwater, free product, or soil staining was observed in the excavation. Soil screening results including PID headspace and Petroflag analyses indicated limited hydrocarbon impact to soils in the tank grave. One composite soil sample consisting of five aliquots from the four excavation sidewalls and the base was collected and analyzed for EPH by a Massachusetts-certified laboratory. Analytical results indicated the absence of hydrocarbon impact in excess of the MADEP MCP (RCS-1) Reportable Concentrations. Based upon the analytical data and field screening results, the excavation was backfilled, compacted and the grass area restored.



SCREENING SUMMARY				
LOCATION	SAMPLE #	DEPTH (ft.)	PID READING (PPM)	PETROFLAG RESULT (PPM)
North	#1	3' - 5'	0.0	NA
South	#2	3' - 5'	0.0	NA
West	#3	3' - 5'	0.0	NA
East	#4	3' - 5'	0.0	NA
Base	#5	5'	2.7	NA
Composite	(#1- #5)	3' - 5'	9.9	215.0

DEVENS COMMERCE CENTER
FIGURE 1
UST EXCAVATION SCHEMATIC
UST T-3800
DEVENS, MASSACHUSETTS
Project # 41141-001 Dames & Moore

APPENDIX A
TANK CLOSURE PERMIT



The Commonwealth of Massachusetts

Department of Public Safety—Division of Fire Prevention

APPLICATION FOR PERMIT FOR REMOVAL AND TRANSPORTATION TO APPROVED TANK YARD

_____ 19
(Date)

C.82 S.40 M.G.L.

To: HEAD OF FIRE DEPARTMENT
Devens
City or Town

DIG SAFE NUMBER
<u>983809302</u>
Start Date <u>7-23-18</u>

In accordance with the provisions of Chapter 148, G.L. as provided in Section 38A Application is hereby made by FLEET ENVIRONMENTAL SERVICES LLC
(Name of Person, Firm or Corporation)

B HARDING ST LAKEVILLE MASS
Address

For permission to remove and transport underground steel storage tank(s) from
T-3800
Street address (city or town)

FDID# 17919 to approved Tank Yard# RIESENOR CORP #011

State clearly type of inert gas used in steel storage tank
Type of inert gas used

Name of Person, Firm, Corporation disposing tank Fleet Environmental Services, LLC

Date issued - rejected _____ 19
Date of expiration _____ 19 paid/due
Fee _____ (MGL C-148, S-10A)
By: [Signature]
Signature of Applicant



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC SAFETY—DIVISION OF FIRE PREVENTION

PERMIT

FOR REMOVAL AND TRANSPORTATION TO APPROVED TANK YARD

_____ 19

In accordance with the provisions of Chapter 148, G.L. as provided in Section 38A this permit is granted to

DIG SAFE NUMBER
<u>983809302</u>
Start Date <u>7-27-18</u>

Name: FLEET ENVIRONMENTAL SERVICES LLC
Full name of person, firm or Corporation

To transport underground steel storage tank(s) to Approved tank yard# #011

State clearly type of inert gas used in steel storage tank
steel tank: _____ method

FDID# 17919
Fee paid \$ _____
Name and address of contractor disposing tank FLEET ENV. SERV. LLC
Location to which tank will be transported

This permit will expire _____ 19

#011
Approved tank yard#
[Signature]
Signature of official granting permit (TITLE)
(Head of Fire Dept.)



Form FP 291

Commonwealth of Massachusetts
Department of Fire Services - Office of the State Fire Marshal
RECEIPT OF DISPOSAL OF UNDERGROUND STEEL STORAGE TANK



NAME AND ADDRESS OF APPROVED TANK YARD

WM BEISNER
CLINTON, MA

APPROVED TANK YARD NO. 011 Tank Yard Ledger 502 CMR 3.03 (4) Number: 98-332

I certify under penalty of law I have personally examined the underground steel storage tank delivered to this "approved tank yard" by firm, corporation or partnership _____ and accepted same in conformance with Massachusetts Fire Prevention Regulation 502 CMR 3.00 Provisions for Approving Underground Steel Storage Tank dismantling yards. A valid permit was issued by LOCAL Head of Fire Department. FDID# 17919 to transport this tank to this yard.

Name and official title of approved tank yard owner or owners authorized representative:

Walter C. [Signature] SCALE MANAGER 4 DEC 98
SIGNATURE TITLE DATE SIGNED

This signed receipt of disposal must be returned to the local head of the fire department FDID# 17919 pursuant to 502 CMR 3.00.
EACH TANK MUST HAVE A RECEIPT OF DISPOSAL

TANK DATA

Gallons 500
Previous Contents _____
Diameter _____ Length _____
Date Received 4 DEC 98
Serial # (if available) _____

TANK REMOVED FROM

DEJENS
(No. and Street)
DEJENS
(City or Town)

Fire Department Permit # _____

Tank I.D. # (Form FP-290) _____

Owner/Operator to mail revised copy of Notification Form (FP290, or FP290R) to : UST Compliance, Office of the State Fire Marshal, P.O. Box 1025 State Road, Stow, MA 01775.

APPENDIX B
WASTE DOCUMENTATION



236 Lunenburg St.
 Fitchburg, MA 01420
 978-345-5300 / 978-348-2528

SLIP NO 25033

Date	Driver	Truck No.	Trailer No.	Terminal Bol No.	Split Ticket #		
9/23/58	Kent	135	173				
Supply Point	No. Lead	Plus	Super	LS Diesel	LS Kero	#2 Fuel	Other
Fort Devens	UN 1203	UN 1203	UN 1203	NA 1993	NA 1993	NA 1993	
						9000	
Destination	Stick Readings						
Global Oil							
	Start	Finish	Reason				
Delay	700	900	2 HRS Delay (MEETING)				
Truck Rental	Description of Work						
	9000 Black #2 oil						
# of Loads							
# of Hours							
Signature For Delivery				Signature for Delay			
				[Signature]			

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

(Name of Carrier) PERFORMANCE TRANSPORTING SCAC. _____

Carrier's No. _____

at FORT DEVENS date 9/23/58 from _____

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), packed, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to _____ (Mail or street address of consignee - For purposes of notification only.)

Destination DENNISON PETROLEUM State _____ County _____ Zip _____

Delivery Address GLOBAL OIL

Route _____ (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier _____ Car or Vehicle Initials _____ No. _____

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column	Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
7000	GALLONS #2 FUEL OIL BLACK				(Signature of consignor)
					If charges are to be prepaid, write or stamp here, "To be Prepaid".
					Received \$ _____ to apply in prepayment of the charges on the property described hereon.
					Agent or Cashier
					Per _____ (The signature here acknowledges only the amount prepaid.)
					Charges Advanced: \$ _____

Collect On Delivery and remit to _____ C.O.D. Charge to be paid by Shipper Consignee

If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

HM EMERGENCY RESPONSE TELEPHONE NUMBER (\$172.604)

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. ①

(Name of Carrier) PRE PERFORMANCE TRAINS SCAC. _____ Carrier's No. _____
 Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at FORT DEVENS date 9/28/98 from DENNISON OIL

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to _____ (Mail or street address of consignee - For purposes of notification only.)

DENNISON OIL
 Destination State County Zip Delivery Address*
GLOBAL Petroleum MA

Route BEST WAY (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier PRE PERFORMANCE OIL Car or Vehicle Initials 49 No. 176

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column
<u>9000</u>	<u>GALLON VIRGIN BLACK #2 FUEL</u>			

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid".

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____

Collect On Delivery and remit to \$ _____ C.O.D. Charge Shipper to be paid by Consignee

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". Note - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

HM EMERGENCY RESPONSE TELEPHONE NUMBER (5172.604)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Shipper: _____ Agent: _____
 Per: _____ Date: _____ Per: _____ Date: 9/28/98

Permanent post-office address of shipper
 FORM NO. 1 BLS (Rev. 8/95)

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. (2)

(Name of Carrier) PERFORMANCE TRANS. SCAC. _____ Carrier's No. _____

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:
 at FORT DEVENS date 9/28/98 from DENNISON OIL

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to DENNISON OIL (Mail or street address of consignee - For purposes of notification only.)

Destination GLOBAL PETROLEUM State MA County _____ Zip _____ Delivery Address* _____

Route BEST WAY (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier PERFORMANCE TRANS. Car or Vehicle Initials 419 No. 176

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column	<small>Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.</small> (Signature of consignor) _____ If charges are to be prepaid, write or stamp here, "To be Prepaid". Received \$ _____ to apply in prepayment of the charges on the property described hereon. Agent or Cashier _____ Per _____ (The signature here acknowledges only the amount prepaid.) Charges Advanced: _____ \$ _____
9000	GALLONS VIRGIN BLACK #2 FUEL OIL.				

Collect On Delivery and remit to \$ _____ C.O.D. Charge to be paid by Shipper Consignee

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight". Note. - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

HM EMERGENCY RESPONSE TELEPHONE NUMBER (517.2.604)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Shipper: _____ Agent: _____
 Per: _____ Date: _____ Per: _____ Date: 9/28/98

Permanent post-office address of shipper
 FORM NO. 1 BLS (Rev. 8/95)

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

(Name of Carrier) PERFORMANCE TRANS SCAC. _____ Carrier's No. _____

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at FORT DEVANS date 10-2-98 from SENNISON OIL

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to _____ (Mail or street address of consignee - For purposes of notification only.)

SENNISON OIL

Destination GLOBAL PETROLEUM State _____ County _____ Zip _____ Delivery Address* _____

Route BEST WAY (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier PERFORMANCE TRANS Car or Vehicle Initials 49 No. 176

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column
<u>9000</u>	<u>GALLON VIRGIN BLACK #2 OIL</u>			

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)
If charges are to be prepaid, write or stamp here, "To be Prepaid".

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier
Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced:
\$ _____

Collect On Delivery and remit to \$ _____ C.O.D. Charge to be paid by Shipper Consignee

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".
Note. - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

HM EMERGENCY RESPONSE TELEPHONE NUMBER (§172.604)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Shipper: PERFORMANCE TRANS Agent: _____
Per: [Signature] Date: _____ Per: [Signature] Date: 10-2-98

Permanent post-office address of shipper
FORM NO. 1 BLS (Rev. 8/95)

THIS SHIPPING ORDER must be legibly filled in, in ink, in Indelible Pencil, or in Carbon, and retained by the Agent

Shipper's No. _____

(Name of Carrier) PERFORMANCE TRANS SCAC. _____ Carrier's No. _____
 Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at FORT DEWANS date 10-2-98 from SENNISON OIL

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions set forth in the conditions printed or written, herein contained, (as specified in Appendix B to Part 1036) which are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to _____ (Mail or street address of consignee - For purposes of notification only.)

Destination SENNISON OIL State _____ County _____ Zip _____ Delivery Address* _____

Route GLOBAL PETROLEUM (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier PERFORMANCE TRANS Car or Vehicle Initials 49 No. 176

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column
850	GALLON VIRGIN BLACK			
850	#2 OIL			
1				

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid".

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____

Collect On Delivery and remit to \$ _____ C.O.D. Charge Shipper to be paid by Consignee

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".
 Note. - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

HM EMERGENCY RESPONSE TELEPHONE NUMBER (§172.604)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Shipper: PERFORMANCE Agent: _____
 Per: [Signature] Date: _____ Per: S. Dennis Date: 10-2-98

Permanent post-office address of shipper
 FORM NO. 1 BLS (Rev. 8/95)

2

Agent must detach and retain this Shipping Order and must sign the Original Bill of Lading.

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, not a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Shipper's No. _____

(Name of Carrier) TRUCK SERVICE

SCAC. _____

Carrier's No. _____

Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading:

at DEVENS, MA date 12-17-98 from DEVENS, MA

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assignee.

Consigned to _____ (Mail or street address of consignee - For purposes of notification only.)

FLEET ENVIRONMENTAL

Destination _____ State MA County _____ Zip _____ Delivery Address* CHICLSEA, MA

Route BEST WAY (*To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

Delivering Carrier TRUCK SERVICE Car or Vehicle Initials _____ No. _____

Number of Packages _____ Description of articles, special marks, and exceptions _____ *Weight (Sub. to correction) _____ Class or rate _____ Check column _____

Number of Packages	Description of articles, special marks, and exceptions	*Weight (Sub. to correction)	Class or rate	Check column
6000	#2 FUEL OIL (BLACK)			

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of consignor)

If charges are to be prepaid, write or stamp here, "To be Prepaid".

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____

Collect On Delivery and remit to \$ _____ C.O.D. Charge to be paid by Shipper Consignee

"If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".
Note. - where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

HM EMERGENCY RESPONSE TELEPHONE NUMBER (5172.804)

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

Shipper: D. Menes Agent: [Signature]
Per: _____ Date: 12-17-98 Per: _____ Date: _____

Permanent post-office address of shipper
FORM NO. 1 BLS (Rev. 8/95)

APPENDIX C
LABORATORY ANALYTICAL RESULTS



October 30, 1998

Mr. Brian House
Fleet Environmental Svc., LLC
8 Harding St.
Lakeville, MA 02347

RE Your project: Fleet - Devens

Dear Brian:

Enclosed please find the results for the above-referenced project, received on October 26, 1998. AMRO operates a Quality Control Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample upon receipt. No quality control deviations which impact the enclosed results were noted during the analyses associated with this project. This project was assigned AMRO Project Number 20706. If you have any questions regarding this project in the future, please refer to this number.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample. If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report.

Please do not hesitate to call if you have any questions.

Sincerely,

Richard Ravenelle
Organics Laboratory Manager

Encl.

Laboratory Report Extractable Petroleum Hydrocarbons (EPH)

EPH ANALYTICAL RESULTS

Extraction Method: EPA 3541	Client ID	T-3800	
Method for Ranges: MADEP EPH 98-1			
Method for Target Analytes: MADEP EPH 98-1	AMRO Lab ID	20706-06	
EPH Surrogate Standards - Extraction Aliphatic: 1-Chlorooctadecane Aromatic: o-Terphenyl	Date Collected	10/26/98	
	Date Received	10/26/98	
	Date Extracted	10/27/98	
EPH Surrogate Standards - Analysis 2-Fluorobiphenyl 2-Bromonaphthalene	Date Analyzed	10/30/98	
	Dilution Factor	1	
	% Solids	95.3	
Range/Target Analyte	UNITS	RESULTS	RL
C ₉ -C ₁₈ Aliphatic Hydrocarbons ¹	mg/Kg	ND	52
C ₁₉ -C ₃₆ Aliphatic Hydrocarbons ¹	mg/Kg	ND	52
C ₁₁ -C ₂₂ Aromatic Hydrocarbons ^{1,2,3}	mg/Kg	ND	26
Naphthalene	mg/Kg	ND	0.26
2-Methylnaphthalene	mg/Kg	ND	0.26
Acenaphthene	mg/Kg	ND	0.26
Phenanthrene	mg/Kg	1.2	0.26
2-Fluorobiphenyl % Recovery	%	98.6	N/A
2-Bromonaphthalene % Recovery	%	92.9	N/A
o-Terphenyl % Recovery	%	79.1	N/A
1-Chlorooctadecane % Recovery	%	88.9	N/A
Surrogate Acceptance Range	%	40-140%	40-140%

¹ Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

² C₁₁-C₂₂ Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes

³ Reporting limit based on calculated MDL, not the prescribed procedure in MADEP EPH Revision 1.0 method.

N/A = Not Applicable

ND = Not Detected at or above the Reporting Limit (RL) indicated.

COMMENTS:

CERTIFICATION

Were all QA/QC procedures REQUIRED by the EPH Method followed? Yes No - See Comments
 Were all performance/acceptance standards for required QA/QC procedures achieved? Yes No - See Comments
 Were any significant modifications made to the EPH method, as specified in Sect 11.3? No Yes - Details attached

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

SIGNATURE: Richard Ravenelle POSITION: Organic Division Manager

PRINTED NAME: Richard Ravenelle DATE: 10/30/98

CHAIN OF CUSTODY RECORD

Proj. No.		Project Name				Project State	MATRIX				PAGE	OF	
		Fleet - Devens				MA	Water - A	Soil/Solid-S	Waste-W	Other-O	Explain	1	1
Samplers (Signature)						Type, Size, & No. of Containers							
S. Johnson													
Sta. No.	Date	Time	Comp	Grab	Station Location		EPH	VPH	TPH	8100M	Remarks		
CO-1	10/26	1130	X		ACO-1	1-glass	X						
CO-2	"	1145	X		ACO-2	"	X						
316	"	10 ²³	X		T-3816	"	X						
203	"	14 ²⁰	X		T-3803	"	X						
52	"	1442	X		T-952	"	X						
300	"	1345	X		T-3800	"	X						
174	"	9 ¹⁵	X		T-2474	"	X						
72	"	6 ³⁰	X		T-3572 - Southwall	1-glass	X		X		- PLEASE INITIAL FOR APPROVAL		
72	"	11 ³⁰	X		T-3572 - Southwall	1-VOA	X				* SJD		
						↳ Potentially HOT							

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.

AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No.	Send Results to:
S. Johnson	10/26/98 15 ³⁰	Julia [Signature]	20706	Fleet; Dames; Moore
Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No.	Send Results to:
[Signature]	10/26/98 4:30 PM	[Signature]	20706	
Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No.	Send Results to:
[Signature]	10/26/98 4:30 PM	[Signature]	20706	
Relinquished by (Signature)	Date Time	Received for Laboratory by (Signature)	Seal Intact?	Remarks
[Signature]	10/26/98 4:30 PM	[Signature]	Yes No N/A	Standard TAT. Report as always! JFC

Sample Receipt Checklist

Client: <u>Fleet</u>	AMRO ID: <u>20706</u>
Project Name: <u>Fleet - Deaths</u>	Date Rec.: <u>10/26/98</u>
Ship via: (circle one) Fed Ex., UPS, AMRO Courier,	Date Due: <u>11/2/98</u>
Hand Del., Other Courier, <u>Other LULIAN D.</u>	

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Custody Seals present?			✓	
2. Custody Seals Intact?			✓	
3. Air Bill included in folder if received?			✓	
4. Is COC included with samples?	✓			
5. Is COC signed and dated by client?	✓			
6. Pick up temperature of the samples. Temp.=	✓			
7. Laboratory receipt temperature. Temp.= <u>30C</u>	✓			
Samples rec. with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> neither	✓			
8. Were samples received the same day they were sampled?	✓			
Is client temperature < 6 degrees C?		✓		
If no obtain authorization from the client for the analyses.				
Client authorization from: _____ Date: _____ Obtained by: _____				
9. Is the COC filled out correctly and completely?	✓			
10. Does the info on the COC match the samples?	✓			
11. Were samples rec. within holding time?	✓			
12. Were all samples properly labeled?	✓			
13. Were all samples properly preserved?	✓			
14. Were proper sample containers used?	✓			
15. Were all samples received intact? (none broken or leaking)	✓			
16. Were VOA vials rec. with no air bubbles?			✓	
17. Were the sample volumes sufficient for requested analysis?	✓			
18. Were all samples received?	✓			
19. VPH Soils only:				
Samples preserved in Methanol or air tight container?	✓			
Samples received in Methanol covering the soil?	✓			
Samples received in air tight container?	✓			
20. Subcontracted Samples:			✓	
What samples sent:				
Where sent:				
Date:				
Analysis:				
TAT:				
21. Information entered into:				
Internal Tracking Log?	✓			
Dry Weight Log?	✓			
Client Log?	✓			
Received By: <u>Bi</u>				Date: <u>10/26/98</u>
Labeled By: <u>✓</u>				Date: <u>✓</u>
Logged in By: <u>✓</u>				Date: <u>-</u>
Checked By: _____				Date: <u>-</u>

Volatile Petroleum Hydrocarbons (VPH)
Massachusetts Department of Environmental Protection (MADEP)
Method 1.0 - January 1998
AMRO Modifications

This modification is based on the use of a purge and trap gas chromatography mass spectrometer (GCMS) system to analyze samples for VPH. The hydrocarbon ranges are quantified using predominant mass fragmentation ions which are characteristic for the range being measured. This approach eliminates potential false positives for the target analytes while providing accurate hydrocarbon range data.

The chromatographic column is an HP-624 capillary column which has been validated by GCMS analysis of a gasoline standard to correctly identify the marker compounds and elution order of specific gasoline components. Batch quality control includes, at a minimum, method blank, laboratory control sample, and duplicate analysis. A matrix spike and/or matrix spike duplicate is analyzed if sufficient sample is submitted to the laboratory.

The Reporting Limit (RL) of this method for each of the collective aliphatic and aromatic ranges is approximately 0.6-2.8 mg/kg in soil and 25-110 µg/L in water. The RL of this method for the target analytes ranges from approximately 0.05-0.13 mg/kg in soil and 2.0-5.0 µg/L for water samples.

Extractable Petroleum Hydrocarbons (EPH)
Massachusetts Department of Environmental Protection (MADEP)
Method 1.0 - January 1998
AMRO Modifications

This modification is based on a solvent extraction and gas chromatography mass spectrometer (GCMS) analysis. The hydrocarbon ranges are quantified using predominant mass fragmentation ions which are characteristic for the range being measured. This approach eliminates the silica gel solid-phase fractionation step. False positives for targeted PAH analytes are eliminated by using GCMS as the primary analysis technique.

The chromatographic column is a J&W Scientific DB-5ms capillary column. Internal standard calibration is performed using 5 α -Androstane at a concentration of 40 ng/µL. *o*-Terphenyl and 1-Chlorooctadecane are added as surrogate compounds at 20 ng/µL in the sample extract. These two surrogates monitor the effects of the sample matrix and extraction efficiency. Two additional surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, are added to the finished extract prior to analysis to monitor instrument performance. Batch quality control includes, at a minimum, a procedure blank, laboratory control sample and duplicate sample analysis. A matrix spike is analyzed if sufficient sample is submitted to the laboratory.

The Commonwealth of Massachusetts



Department of Environmental Protection

*Division of Environmental Analysis
Senator William K. Wall Experiment Station*

certifies

M-NH012 Amro Environmental Lab
111 Herrick St.
Merrimack, NH 03054

Laboratory Director: Nancy Stewart

for the Chemical Analysis of Potable and Non-Potable Water

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

A handwritten signature in cursive script, appearing to read "David C. Pincus".

Director, Division of Environmental Analysis

Issued: 07/01/98

Expires: 06/30/99