C.M.

NIA-C

RESPONSE ACTION OUTCOME

Prepared for:
Speedy Lube, Inc.
633 North Main Street, Randolph, MA

3-1518

Prepared by:
Decoulos & Company

Date: June 14, 2002

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

J. 12.

BWSC-113

Release Tracking Number
3 - 15188

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

A. LOCATION OF DISPOSAL SITE AND PROPERTY SUBJECT TO AUL:

Disposal Site Name: Speedy Lube

Street: 633 North Main Street Location

City/Town: Randolph ZIP Code: 02368

Address of property subject to AUL, if different than above. Street:

City/Town: ZIP Code:

☑ Check here if this Disposal Site is Tier Classified.

If the Disposal Site subject to the AUL is also subject to a Tier I Permit, provide the Permit Number:

Related Release Tracking Numbers affected by this AUL:

B. THIS FORM IS BEING USED TO: (check one)

☑ Submit a certified copy of a **Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1074 (complete all sections of this form).

☐ Submit a certified copy of an **Amended Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1081(4) (complete all sections of this form).

☐ Submit a certified copy of a **Termination of a Notice of Activity and Use Limitation**, pursuant to 310 CMR 40.1083(3) (complete all sections of this form).

☐ Submit a certified copy of a **Grant of Environmental Restriction**, pursuant to 310 CMR 40.1071, (complete all sections of this form).

☐ Submit a certified copy of an **Amendment of Environmental Restriction**, pursuant to 310 CMR 40.1081(3) (complete all sections of this form).

☐ Submit a certified copy of a **Release of Environmental Restriction**, pursuant to 310 CMR 40.1083(2) (complete all sections of this form).

You must attach all supporting documentation for the use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

C. AUL INFORMATION:

Date AUL was recorded and/or registered with Registry of Deeds and/or Land Registration Office: June 14, 2002

Name of Registry of Deeds and/or Land Registration Office where AUL was recorded and/or registered: Norfolk

Book and Page Number and/or Document Number of recorded and/or registered AUL:

D. PERSON SUBMITTING AUL TRANSMITTAL FORM:

Name of Organization: Speedy Lube, Inc.

Name of Contact: Eyad Badawi Title: Vice President and Treasurer

Street: 633 North Main Street

City/Town: Randolphj State: MA ZIP Code: 02368

Telephone 781-961-4881 Ext.: FAX: (optional)

E. OWNER OF PROPERTY, IF NOT PERSON SUBMITTING AUL TRANSMITTAL FORM:

Provide a mailing address for the owner of the property if that person is not submitting the AUL Transmittal Form. Provide addresses for additional owners on an attachment.

Name of Organization:

Name of Contact: Title:

Street:

City/Town: State: ZIP Code:

Telephone Ext.: FAX: (optional)

RECEIVED
JUN 18 2002
DEP
NORTHEAST REGIONAL OFFICE

Massachusetts Department of Environmental Protection **BWSC-113**

Bureau of Waste Site Cleanup

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

Release Tracking Number: 3 - 15188

F. RELATIONSHIP TO DISPOSAL SITE OF PERSON SUBMITTING AUL TRANSMITTAL FORM: (check one)

- [x] RP or PRP — Specify: (•) Owner ( ) Operator ( ) Generator ( ) Transporter — Other RP or PRP: _____
- [ ] Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- [ ] Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- [ ] Any Other Person Submitting AUL — Specify Relationship: _____

G. CERTIFICATION OF PERSON SUBMITTING AUL TRANSMITTAL FORM:

I, Eyad Badawi, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete

By: _____ (signature) Title: Vice President and Treasurer

For: Speedy Lube, Inc. (print name of person or entity recorded in Section D) Date: June 14, 2002

Enter address of person providing certification, if different from address recorded in Section

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE, AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES.

DECOULOS & COMPANY
ENVIRONMENTAL ENGINEERING & LAND PLANNING

Friday, June 14, 2002

Bureau of Waste Site Cleanup
DEP – Northeast Region
205 Lowell Street
Wilmington, MA 01887

RE: 633 North Main Street, Randolph, MA; DEP RTNs 3-15188 and 3-15653

Dear Sirs:

On behalf of Speedy Lube, Inc., Decoulos & Company is pleased to submit this Response Action Outcome (RAO) Report for the above referenced property. The property is closed out under a Class A-3 RAO.

The property has been impacted by two separate releases and both releases have been assessed and monitored in this RAO.

The Risk Characterization in the RAO has determined that there is *No Significant Risk* to public health, safety, welfare or the environment from the remaining constituents within the groundwater on the Site. There is however a potentially *Significant Risk* to public health, safety, welfare or the environment from the remaining petroleum constituents within the soil on the Site.

As a result of the risk characterization, an Activity and Use Limitation was recorded at the Norfolk Registry of Deeds on June 14, 2002 as Instrument Number 102515 to limit the use of the Site to commercial or industrial uses.

Please feel free to call or email if you have any questions or concerns. Thank you.

Very truly yours,

James J. Decoulos, PE, LSP
jamesj@decoulos.com

Cc: Speedy Lube, Inc.

248 ANDOVER STREET, PEABODY, MASSACHUSETTS 01960
TEL: 978 532 8154 FAX: 978 359 6034
WWW.DECOULOS.COM

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Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC-104

J. H.

RESPONSE ACTION OUTCOME (RAO) STATEMENT & DOWNGRADIENT PROPERTY STATUS TRANSMITTAL FORM

Pursuant to 310 CMR 40.0180 (Subpart B), 40.0580 (Subpart E) & 40.1056 (Subpart

Release Tracking Number: 3 - 15188

A. SITE OR DOWNGRADIENT PROPERTY LOCATION:

Site Name: (optional) Speedy Lube

Street: 633 North Main Street Location Aid:

City/Town: Randolph ZIP Code: 02368

☑ Check here if this Site location is Tier Classified. If a Tier I Permit has been issued, state the Permit Number:

Related Release Tracking Numbers that this Form Addresses: 3-15653

If submitting an RAO Statement, you must document the location of the Site or the location and boundaries of the Disposal Site subject to this Statement. If submitting an RAO Statement for a PORTION of a Disposal Site, you must document the location and boundaries for both the portion subject to this submittal and, to the extent defined, the entire Disposal Site. If submitting a Downgradient Property Status Submittal, you must provide a site plan of the property subject to the submittal and, to the extent defined, the Disposal Site.

B. THIS FORM IS BEING USED TO: (check all that apply)

☑ Submit a **Response Action Outcome (RAO) Statement** (complete Sections A, B, C, D, E, F, H, I, J and L).

☐ Check here if this is a revised RAO Statement. Date of Prior Submittal:

☐ Check here if any Response Actions remain to be taken to address conditions associated with any of the Releases whose Release Tracking Numbers are listed above. This RAO Statement will record only an RAO-Partial Statement for those Release Tracking Numbers.

Specify Affected Release Tracking Numbers:

☐ Submit an optional **Phase I Completion Statement** supporting an RAO Statement or Downgradient Property Status Submittal (complete Sections A, B, H, I, J, and L).

☐ Submit a **Downgradient Property Status Submittal** (complete Sections A, B, G, H, I, J and K).

☐ Check here if this is a revised Downgradient Property Status Submittal. Date of Prior Submittal

☐ Submit a **Termination of a Downgradient Property Status Submittal** (complete Sections A, B, I, J and L).

☐ Submit a **Periodic Review Opinion evaluating the status of a Temporary Solution** (complete Sections A, B, H, I, J and L).

Specify one: ☐ For a Class C RAO ☐ For a Waiver Completion Statement indicating a Temporary Solution

Provide Submittal Date of RAO Statement or Waiver Completion Statement

You must attach all supporting documentation required for each use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

RECEIVED
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DEP
NORTHEAST REGIONAL OFFICE

C. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply)

☑ Assessment and/or Monitoring Only

☐ Removal of Contaminated Soils

☐ Re-use, Recycling or Treatment

○ On Site ○ Off Site Est. Vol.: _____ cubic yards

Describe:

☐ Landfill ○ Cover ○ Disposal Est. Vol.: _____ cubic yards

☐ Removal of Drums, Tanks or Containers

Describe:

☐ Removal of Other Contaminated Media

Specify Type and Volume:

☐ Other Response Actions

Describe:

☐ Deployment of Absorbant or Containment Materials

☐ Temporary Covers or Caps

☐ Bioremediation

☐ Soil Vapor Extraction

☐ Structure Venting System

☐ Product or NAPL Recovery

☐ Groundwater Treatment Systems

☐ Air Sparging

☐ Temporary Water Supplies

☐ Temporary Evacuation or Relocation of Residents

☐ Fencing and Sign Posting

SECTION C IS CONTINUED ON THE NEXT PAGE.

Massachusetts Department of Environmental Protection **BWSC-104**
Bureau of Waste Site Cleanup

RESPONSE ACTION OUTCOME (RAO) STATEMENT & DOWNGRADIENT PROPERTY STATUS TRANSMITTAL FORM
Pursuant to 310 CMR 40.0180 (Subpart B), 40.0580 (Subpart E) & 40.1056 (Subpart J)

Release Tracking Number: 3 - 15188

C. DESCRIPTION OF RESPONSE ACTIONS: (continued)

☐ Check here if any Response Action(s) that serve as the basis for this RAO Statement involve the use of Innovative Technologies. (DEP is interested in using this information to create an Innovative Technologies Clearinghouse.)

Describe Technologies: _____

D. TRANSPORT OF REMEDIATION WASTE: (If Remediation Waste was sent to an off-site facility, answer the following questions)

Name of Facility: _____

Town and State: _____

Quantity of Remediation Waste Transported to Date: _____

E. RESPONSE ACTION OUTCOME CLASS:

Specify the Class of Response Action Outcome that applies to the Site or Disposal Site. Select ONLY one Class:

☐ **Class A-1 RAO:** Specify one of the following:

○ Contamination has been reduced to background levels. ○ A Threat of Release has been eliminated.

☐ **Class A-2 RAO:** You MUST provide justification that reducing contamination to background levels is infeasible.

☑ **Class A-3 RAO:** You MUST provide both an implemented Activity and Use Limitation (AUL) and justification that reducing contamination to background levels is infeasible.

If applicable, provide the earlier of the AUL expiration date or date the design life of the remedy will end: _____

☐ **Class B-1 RAO:** Specify one of the following:

○ Contamination is consistent with background levels ○ Contamination is NOT consistent with background levels.

☐ **Class B-2 RAO:** You MUST provide an implemented AUL.

If applicable, provide the AUL expiration date: _____

☐ **Class C RAO:** ☐ Check here if you will conduct post-RAO Operation, Maintenance and Monitoring at the Site.

Specify One: ○ Passive Operation and Maintenance ○ Monitoring Only

○ Active Operation and Maintenance (defined at 310 CMR 40.0006)

F. RESPONSE ACTION OUTCOME INFORMATION:

☐ If an RAO Compliance Fee is required, check here to certify that the fee has been submitted. You MUST attach a photocopy of the payment.

☑ Check here if submitting one or more AULs. You must attach an AUL Transmittal Form (BWSC-113) and a copy of each implemented AUL related to this RAO Statement. Specify the type of AUL(s) below: (required for all Class A-3 RAOs and Class B-2 RAOs)

☑ Notice of Activity and Use Limitation ○ Grant of Environmental Restriction Number of AULs attached: _____

Specify the Risk Characterization Method(s) used to achieve the RAO described above and all Soil and Groundwater Categories applicable to the Site.

More than one Soil Category and more than one Groundwater Category may apply at a Site.
Be sure to check off all APPLICABLE categories, even if more stringent soil and groundwater standards were met.

Risk Characterization Method(s) Used:	☑ Method 1	☑ Method 2	☐ Method 3
Soil Category(ies) Applicable:	☑ S-1	☑ S-2	☑ S-3
Groundwater Category(ies) Applicable:	☐ GW-1	☑ GW-2	☑ GW-3

> **When submitting any Class A-1 RAO or a Class B-1 RAO where contamination is consistent with background levels, do NOT specify a Risk Characterization Method.**

> **When submitting any Class A-2 RAO or a Class B-1 RAO where contamination is NOT consistent with background levels, you cannot use an AUL to maintain a level of no significant risk. Therefore, you must meet S-1 Soil Standards, if using Risk Characterization Method 1.**

Massachusetts Department of Environmental Protection **BWSC-104**
Bureau of Waste Site Cleanup

RESPONSE ACTION OUTCOME (RAO) STATEMENT & DOWNGRADIENT PROPERTY STATUS TRANSMITTAL FORM

Pursuant to 310 CMR 40.0180 (Subpart B), 40.0580 (Subpart E) & 40.1056 (Subpart I)

Release Tracking Number: 3 - 15188

G. DOWNGRADIENT PROPERTY STATUS SUBMITTAL:

☐ If a Downgradient Property Status Submittal Compliance Fee is required, check here to certify that the fee has been submitted. You MUST attach a photocopy of the payment.

☐ Check here if a Release(s) of Oil or Hazardous Material(s), other than that which is the subject of this submittal, has occurred at this property.

Release Tracking Number(s) _____

○ Check here if the Releases identified above require further Response Actions pursuant to 310 CMR 40.0000.

Required documentation for a Downgradient Property Status Submittal includes, but is not limited to, copies of notices provided to owners and operators of both upgradient and downgradient abutting properties and of any known or suspected source properties.

H. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

> *If Section B indicates that a **Downgradient Property Status Submittal** is being provided,* the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in 310 CMR 40.0183(2)(b), and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *If Section B indicates that either an **RAO Statement, Phase I Completion Statement and/or Periodic Review Opinion** is being provided,* the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

☐ Check here if the Response Action(s) on which this opinion is based, if any, is (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

LSP Name: James J. Decoulos LSP #: 9360 Stamp:

Telephone 978-532-8154 Ext.: _____

FAX: (optional) 978-359-6034

Signature: _____

Date: June 14, 2002

COMMONWEALTH OF MASSACHUSETTS
JAMES J. DECOULOS No. 9360
REGISTERED LICENSED SITE PROFESSIONAL

I. PERSON MAKING SUBMITTAL:

Name of Organization: Speedy Lube, Inc.

Name of Contact: Eyad Badawi Title: Vice President and Treasurer

Street: 633 North Main Street

City/Town: Randolph State: MA ZIP Code: 02368

Telephone: 781-961-4881 Ext.: _____ FAX: (optional) _____

J. RELATIONSHIP TO SITE OF PERSON MAKING SUBMITTAL: (check one)

✔ RP or PRP Specify: ⊘ Owner ○ Operator ○ Generator ○ Transporter Other RP or PRP: _____

☐ Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G. c. 21E, s. 2)

☐ Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ Any Other Person Submitting This Form Specify Relationship: _____

Massachusetts Department of Environmental Protection **BWSC-104**
Bureau of Waste Site Cleanup

RESPONSE ACTION OUTCOME (RAO) STATEMENT & DOWNGRADIENT PROPERTY STATUS TRANSMITTAL FORM
Pursuant to 310 CMR 40.0180 (Subpart B), 40.0580 (Subpart E) & 40.1056 (Subpart

Release Tracking Number
3 - 15188

K. CERTIFICATION OF PERSON SUBMITTING DOWNGRADIENT PROPERTY STATUS SUBMITTAL:

I, _____, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form; (ii) that, based on my inquiry of the/those individual(s) immediately responsible for obtaining the information, the material information contained herein is, to the best of my knowledge, information and belief, true, accurate and complete; (iii) that, to the best of my knowledge, information and belief, I/the person(s) or entity(ies) on whose behalf this submittal is made satisfy(ies) the criteria in 310 CMR 40.0183(2)(iv) that I/the person(s) or entity(ies) on whose behalf this submittal is made have provided notice in accordance with 310 CMR 40.0183(5); and (v) that I am duly authorized to make this attestation on behalf of the person(s) or entity(ies) legally responsible for this submittal. I/the person(s) or entity(ies) on whose behalf this submittal is made is/are aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information

By: _____ Title: _____
(signature)

For: _____ Date: _____
(print name of person or entity recorded in Section

Enter address of the person providing certification, if different from address recorded in Section I:

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone: _____ Ext.: _____ FAX: (optional) _____

L. CERTIFICATION OF PERSON MAKING SUBMITTAL:

If you are completing only a Downgradient Property Status Submittal, you do not need to complete this section of the form.

I, Eyad Badawi, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: _____ Title: Vice President and Treasurer
(signature)

For: Speedy Lube, Inc. Date: June 14, 2002
(print name of person or entity recorded in Section I)

Enter address of the person providing certification, if different from address recorded in Section I:

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE, AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

BWSC-113

Release Tracking Number: 3 - 15188

A. LOCATION OF DISPOSAL SITE AND PROPERTY SUBJECT TO AUL:

Disposal Site Name: Speedy Lube

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City/Town: Randolph ZIP Code: 02368

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C. AUL INFORMATION:

Date AUL was recorded and/or registered with Registry of Deeds and/or Land Registration Office: June 14, 2002

Name of Registry of Deeds and/or Land Registration Office where AUL was recorded and/or registered: Norfolk

Book and Page Number and/or Document Number of recorded and/or registered AUL:

D. PERSON SUBMITTING AUL TRANSMITTAL FORM:

Name of Organization: Speedy Lube, Inc.

Name of Contact: Eyad Badawi Title: Vice President and Treasurer

Street: 633 North Main Street

City/Town: Randolphj State: MA ZIP Code: 02368

Telephone 781-961-4881 Ext.: FAX: (optional)

E. OWNER OF PROPERTY, IF NOT PERSON SUBMITTING AUL TRANSMITTAL FORM:

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Name of Organization:

Name of Contact: Title:

Street:

City/Town: State: ZIP Code:

Telephone Ext.: FAX: (optional)

Massachusetts Department of Environmental Protection **BWSC-113**
Bureau of Waste Site Cleanup

ACTIVITY & USE LIMITATION (AUL) TRANSMITTAL FORM

Pursuant to 310 CMR 40.1056 and 40.1070 - 40.1084 (Subpart J)

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☐ Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ Any Other Person Submitting AUL Specify Relationship: _____

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By: _____ Title: Vice President and Treasurer
(signature)

For: Speedy Lube, Inc. Date: June 14, 2002
(print name of person or entity recorded in Section D)

Enter address of person providing certification, if different from address recorded in Section

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE. AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES.

2.0 BACKGROUND

2.1 Site Description

The property is described by the Town of Randolph Assessors as on Map 30, Block C, Lot 6.1A and is recorded at the Norfolk Registry of Deeds in Book 9310, Page 747 (the Site) (see locus on Figure 1).

The U.S. Geological Survey (USGS) map of Norwood, Massachusetts dated 1985 shows the Site located approximately 54 meters above the National Geodetic Vertical Datum of 1929. Horizontal coordinates within the Universal Transverse Mercator (UTM) system are 4,671,450 mN, and 330,450 mE.

The Site fronts on both North Main Street and Orchard Street. Entrance onto the Site from North Main Street is from two curb cut openings, one lying on the northerly portion of the Site and the other on the southerly. Entrance onto the Site from Orchard Street is predominately from one curb cut opening.

The land is improved by a one story wood framed commercial building on a concrete slab (see Figure 2). The commercial building has a postal address of 633 North Main Street.

The Site lies within a residential zoning district as shown on the current Zoning Map of the Town of Randolph. On January 21, 1993, the Randolph Zoning Board of Appeals approved an upgraded commercial use for the Site and the plan accepted for this approval was recorded at the Norfolk Registry as Number 124-1993 in Plan Book 412.

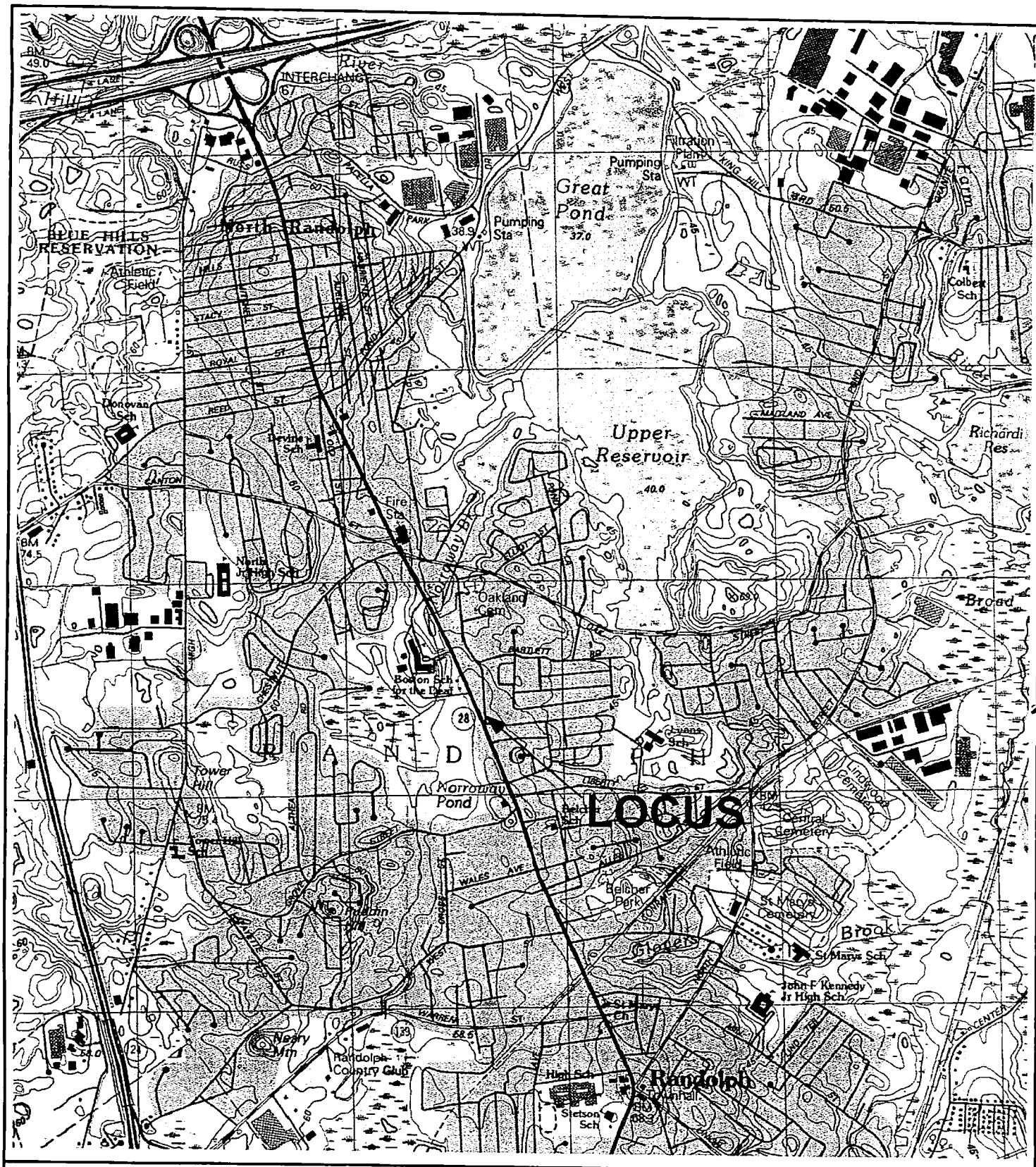
2.2 Current Use

The Site is currently used for retail vehicle fueling and light automotive repair. The vehicle fueling operation utilizes one 12,000 gallon double-walled fiberglass underground storage tank (UST) for fuel storage. The UST is split to provide storage for 9,000 gallons of regular fuel and 3,000 gallons of premium gasoline. Double-walled fiberglass piping distributes fuel product to the fuel dispenser pumps as shown on Figure 3. The fuel dispenser island is covered by an overhead canopy. The entire UST system is monitored and automatically gauged by a Veeder-Root TLS-350 Monitoring System.

The automotive repair shop conducts very general mechanical automotive repair. The repairs primary include tire replacement and oil changes. No body work or painting is conducted on Site.

The Site is nearly all paved. Areas that are not part of traffic flow for fueling or repair are used to store vehicles on a temporary basis.

The building is serviced by underground town water and sewer service and is heated by fuel oil. Electric and telephone utilities are serviced by overhead wiring from Orchard Street. Two 275 gallon fuel oil tanks are located outside the commercial building on the west side of the building as shown in Figure 2. The fuel tanks appeared in good condition with no evidence of tank or piping failure.



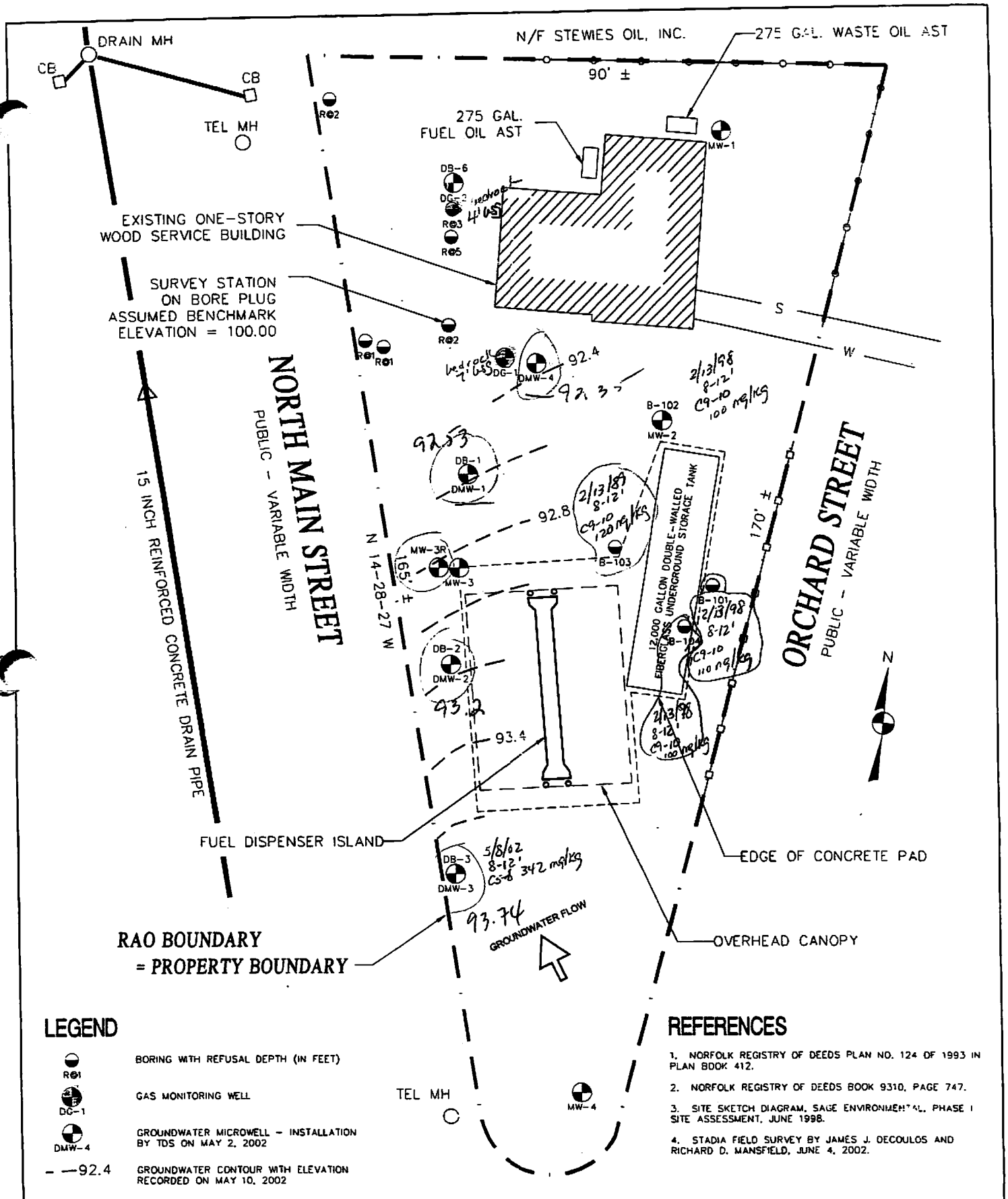
REFERENCE:

USGS QUADRANGLE
NORWOOD, MA
DATE: 1985
SCALE: 1:25 000

LOCUS MAP

FIGURE 1

DECOULOS & COMPANY



LEGEND

- R@1 — BORING WITH REFUSAL DEPTH (IN FEET)
- DG-1 — GAS MONITORING WELL
- DMW-4 — GROUNDWATER MICROWELL - INSTALLATION BY TDS ON MAY 2, 2002
- --92.4 — GROUNDWATER CONTOUR WITH ELEVATION RECORDED ON MAY 10, 2002

REFERENCES

1. NORFOLK REGISTRY OF DEEDS PLAN NO. 124 OF 1993 IN PLAN BOOK 412.
2. NORFOLK REGISTRY OF DEEDS BOOK 9310, PAGE 747.
3. SITE SKETCH DIAGRAM, SAGE ENVIRONMENTAL, PHASE I SITE ASSESSMENT, JUNE 1998.
4. STADIA FIELD SURVEY BY JAMES J. DECOULOS AND RICHARD D. MANSFIELD, JUNE 4, 2002.

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EXISTING CONDITIONS
633 NORTH MAIN STREET
RANDOLPH, MASSACHUSETTS

DATE: JUNE 2002
SCALE: 1" = 20'
FIGURE NO. 2

2.3 Current Abutting Uses

The site is abutted to the north by a commercial business known as Stewies Oil, Inc. Stewies distributes heating oil and sells diesel fuel from the location. The fuel is stored in an above ground storage tank.

Remaining abutting uses to the east, south and west are the public ways of North Main Street and Orchard Street.

3.0 UST AND MCP COMPLIANCE

Since approximately 1935, the Site has been used as a retail gasoline filling station. On June 11, 1997, a release of petroleum was reported to the Massachusetts Department of Environmental Protection (DEP) pursuant to G.L. c.21E and the Massachusetts Contingency Plan (MCP). The release was assigned tracking number 3-15188 by DEP and apparently associated with a 2,000 gallon underground storage tank (UST) removed by RC Construction in June of 1997. According to Captain Rogers of the Randolph Fire Department, no records or disposal receipts are available.

On October 27, 1997, another release of petroleum was reported to DEP as a result of the removal of two 6,000 gallon USTs. DEP assigned tracking number 3-15653 to the release. A total of 275.05 tons of petroleum contaminated soil from the release was recycled at Bardon Trimount in Stoughton, MA.

SAGE Environmental, Inc. of Pawtucket, RI (SAGE) oversaw the work related to the second reported release. SAGE conducted subsurface investigations on February 13, 1998 to evaluate the extent of the releases and subsequently submitted the following reports to DEP: an Immediate Response Action Plan on December 17, 1997; an Immediate Response Action Outcome Statement in May of 1998; and, a Phase I Initial Site Investigation and Tier Classification in June of 1998. Documentation regarding the disposal of contaminated soil and the USTs is included in these reports.

In the Phase I report dated June of 1998, SAGE tier classified the Site as Tier II with a score of 171.

4.0 SOIL AND GROUNDWATER SAMPLING

Due to the need for additional downgradient groundwater data, additional soil borings and monitoring wells were advanced by Technical Drilling Services, Inc. of Sterling, MA (TDS) on May 8, 2002. Decoulos & Company personnel oversaw the operation of a GeoProbe™ 54DT direct push probing machine. Eleven borings were advanced and four were completed as micro-monitoring wells. Soil was screened with a Thermo-Electron 580B photo-ionization detector (PID) calibrated that morning by Spectra Environmental of Reading, MA. Logs from the soil investigation are provided in Appendix A. Positive PID readings are presented in the logs on the right side of each page.

Based upon PID readings, soil samples from the boring investigation were collected for laboratory analysis. The samples with the highest PID readings were collected and analyzed for volatile petroleum hydrocarbons (VPHs) (see Table 1 and Laboratory Certificates of Analysis in Appendix B).

Borings in the northwestern portion of the Site were unable to penetrate the groundwater table. Refusal was encountered by bedrock from depths ranging between one and five feet below grade. The borings are identified on Figure 2 with their respective refusal depths.

Two of the borings were completed as gas monitoring wells DG-1 and DG-2 as shown on Figure 2. The wells were set to provide soil gas data points if necessary.

Pre-existing monitoring well MW-3 was without a cover. Soil had been placed within the well frame and the soil filled the well to the top of the casing. Due to its location, stormwater runoff from the concrete pad was likely to flow directly into MW-3 from the surface. As a result of this potential source point, the top three inches of the well were cleaned out and concrete was set to the top of the frame.

The downgradient location of MW-3R (from MW-3) created a potential unreliable groundwater point. Two of the micro-wells set on May 8th (DMW-1 and DMW-2) were designed to provide more representative groundwater conditions at this location on Site.

Groundwater samples were collected from new micro-wells DMW-1, DMW-2, DMW-3 and DMW-4 and existing micro-well MW-3R on May 10, 2002. The depth to the static groundwater interface and total well depth were measured to the nearest 0.01 foot with an Environmental Instruments groundwater interface probe prior to sampling activities. The groundwater depth measurement, as well as a description of the odor and appearance of the groundwater, was logged in the field. A slight sheen was noted in the groundwater from DMW-2 with gray/brown sediment and a slight/mild petroleum odor observed in all the wells sampled.

Each well was purged with a GeoPump 2 low flow peristaltic pump equipped with dedicated polyethylene tubing until approximately three well volumes were removed. The wells were allowed to recharge and stabilize prior to sample collection. The groundwater samples were filtered with dedicated Waterra 0.45 micron filters due to the sediment withdrawn with the water. The samples were collected in properly preserved, laboratory prepared containers, placed in an ice chest and delivered to the GeoLabs, Inc. certified laboratory on May 13, 2002. The groundwater samples were analyzed for volatile petroleum hydrocarbons (VPHs) according to DEP protocols on a standard two-week turn-around.

A level survey was conducted on the Site and elevations established for the top of the well casings on June 4, 2002. It was determined that groundwater flow was in a north-northwesterly direction based on the survey and groundwater depth data collected. Local groundwater flow direction will likely be influenced by surface and subsurface structures and utilities in and adjacent to the Site.

Positive Lab Results for Soil Samples
633 North Main Street
Randolph, MA
Table 1

										Method 1				Upper
										S-1 Soil		S-2 Soil		Conc.
Sample ID:	B-101/S-3	B-102/S-3	B-103/S-3	B-104/S-3	DB-1/S-2	DB-2/S-1	DB-3/S-3	DB-6/S-1	Average	GW 2	GW 3	GW 2	GW 3	Limit
Date:	2/13/98	2/13/98	2/13/98	2/13/98	5/8/02	5/8/02	5/8/02	5/8/02	Soil					
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Depth (ft):	8-12	8-12	8-12	8-12	4-8	0-4	8-12	0-4						
VPHs														
C5-C8 Aliphatics	36	38	36	36	61.9	56.6	342	1.8	76	100	100	500	500	5,000
C9-C12 Aliphatics	18	14	17	14	51.6	72.9	138	ND	41	1,000	1,000	2,500	2,500	20,000
C9-C10 Aromatics	110	100	120	100	23.9	58.1	86.2	ND	75	100	100	500	500	5,000
VPH Target Analytes														
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	0.2	40	40	60	60	2,000
Ethylbenzene	1.5	1.6	1.9	1.2	1.43	1.03	2.32	ND	1	500	500	1,000	500	10,000
MTBE	ND	ND	ND	ND	0.868	ND	ND	ND	0.2	100	100	200	200	5,000
Naphthalene	2	1.6	1.8	1.7	1.93	4.02	3.56	ND	2	100	100	1,000	1,000	10,000
Toluene	ND	ND	0.29	ND	ND	ND	ND	ND	0.2	500	500	500	1,000	10,000
m-,p-Xylenes	8.8	8.4	9.3	8.2	2.56	7.92	12.6	ND	7	500	500	500	1,000	10,000
o-Xylene	3.5	3.3	3.4	2.9	ND	3.96	4.14	ND	3	500	500	500	1,000	10,000

NOTES
non detects set at one half of reportable limit
Method 1 S-1 GW-2 Exceedance

The elevation data from the new micro-wells was as follows:

Groundwater Elevation Data
Table 2

	Well Casing Elevation	Total Well Depth	Groundwater Depth 05/10/02	Groundwater Elevation 05/10/02
DMW-1	100.25	14.20	7.72	92.53
DMW-2	100.64	13.30	7.44	93.20
DMW-3	101.04	12.10	7.30	93.74
DMW-4	100.25	14.08	7.90	92.35

Confirmatory groundwater samples were collected from the previously sampled on-site micro-wells DMW-1, DMW-2, DMW-3, DMW-4 and MW-3R on June 4, 2002. Groundwater depth measurements were not collected since dedicated tubing was present in each of the micro-wells. A description of the odor and appearance of the groundwater, was logged in the field prior to sample collection. A gray/ brown sediment and a slight/mild petroleum odor was observed in all the wells sampled.

Each well was purged with a GeoPump 2 low flow peristaltic pump equipped with previously installed, dedicated polyethylene tubing until approximately three well volumes were removed. The wells were allowed to recharge and stabilize prior to sample collection. The groundwater samples were filtered with dedicated Waterra 0.45 micron filters due to the sediment withdrawn with the water. The samples were collected in properly preserved, laboratory prepared containers, placed in an ice chest and delivered to the GeoLabs, Inc. on June 5, 2002. The groundwater samples were analyzed for VPHs according to DEP protocols on a standard two-week turn-around.

Groundwater analytical data is presented in Table 3 with the Laboratory Certificates of Analysis in Appendix B.

5.0 SOIL GAS SAMPLING

A soil gas investigation was conducted by Decoulos & Company personnel on June 4, 2002 due to the exceedance of Method 1 GW-2 groundwater standards for various parameters in the on-site micro-wells. The gas samples were collected from overburden gas wells DG-1 and DG-2 installed by TDS on May 8, 2002. The boreholes had been installed with 0.75 inch PVC slotted screen to grade and completed with a roadbox cemented in place atop the wells (see logs in Appendix A).

Dedicated polyethylene tubing was installed to the bottom of each gas well with a tight rubber stopper seal between the well and tubing prior to sampling. The seal was installed prior to sample collection to prevent short circuit with ambient air. Six liter, non-regulated, Summa canisters were then connected to the tubing and grab samples collected from each boring for two minutes. The canisters were shipped to GeoLabs, Inc. of Braintree, MA the following day to be analyzed for APHs according to MA DEP protocols.

Positive Lab Results for Groundwater Samples
633 North Main Street
Randolph, MA
Table 3

Sample ID:	DMW-1	DMW-1	AVG	DMW-2	DMW-2	AVG	DMW-3	DMW-3	DMW-3	AVG	DMW-4	DMW-4	AVG	MW-3R	MW-3R	AVG	MCP Method 1 Standards			Upper Conc.
Date:	5/10/2002	6/4/2002	DMW-1	5/10/2002	6/4/2002	DMW-2	5/10/2002	6/4/2002	6/4/2002	DMW-3	5/10/2002	6/4/2002	DMW-4	5/10/2002	6/4/2002	MW-3R	GW 1	GW 2	GW 3	Limit
Units:	µg/L	µg/L	—	µg/L	µg/L		µg/L	µg/L	µg/L		µg/L	µg/L	—	µg/L	µg/L		µg/L	µg/L	µg/L	µg/L
VPH Target Analytes																				
Benzene	2220	5970	4095	780	735	758	ND	ND	6	4	1500	968	1234	2350	4240	3295	5	2,000	7,000	70,000
Ethylbenzene	655	1510	1083	834	794	814	112	44	51	69	183	24	103	673	2590	1632	700	30,000	4,000	100,000
MTBE	2550	19300	10925	111	64	87	22	ND	ND	9	34200	89800	62000	698	778	738	70	50,000	50,000	100,000
Naphthalene	246	327	287	404	183	294	ND	22	35	22	34	ND	22	138	453	295	20	6,000	6,000	60,000
Toluene	2190	1940	2065	4090	7000	5545	38	42	32	37	221	ND	112	11800	19200	15500	1,000	6,000	50,000	100,000
m-,p-Xylenes	3750	5910	4830	4250	12900	8575	523	376	423	441	594	31	312	10700	15700	13200	10,000	6,000	6,000	100,000
o-Xylene	1250	1350	1300	1860	5910	3885	256	201	204	220	181	10	95	4290	6750	5520	10,000	6,000	50,000	100,000
VPHs																				
C5-C8 Aliphatics	ND	ND	1500	ND	4100	2250	921	928	1310	1053	ND	ND	2000	ND	ND	1500	400	1,000	4,000	100,000
C9-C12 Aliphatics	ND	ND	563	ND	ND	450	ND	ND	ND	63	ND	ND	379	ND	ND	563	4,000	1,000	20,000	100,000
C9-C10 Aromatics	ND	ND	2063	3070	6720	4895	827	ND	1770	957	544	59	301	6940	7640	7290	200	5,000	4,000	100,000

NOTES
Non detects set at one half of reportable limit
Method 1 S-1 GW-2 or GW-3 Exceedance

6.0 RISK CHARACTERIZATION

A Method 1 and Method 2 Risk Characterization was used to characterize the risk to human health, safety, welfare and the environment at the disposal site defined by RTNs 3-15188 and 3-15653 in accordance with the Massachusetts Contingency Plan, 310 CMR 40.0980. The Site includes the area defined by the property boundaries. The Method 2 Risk Characterization included modification of selected Method 1 Standards according to procedures outlined in MADEP, *Characterizing Risks posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach, Final Draft,* June, 2001.

The risk characterization determined that a condition of *No Significant Risk* exists for the entire Site when conditions are applied limiting the Site to its current or similar commercial uses. The *Application of Activity and Use Limitation* was conducted in accordance with the Massachusetts Contingency Plan, 310 CMR 40.1012. This Method 2 Risk Characterization therefore supports a Class A-3 Response Action Outcome. Steps in the characterization of risk follow.

6.1 Current and Foreseeable Site Uses

The Site is currently used for retail automotive repair service and the retail dispensing of gasoline. Groundwater contamination originating at the Site appears to be limited to the Site. For purposes of this risk characterization, we consider the Site as the disposal site. Because of the good commercial location and business zoning, foreseeable site uses include its existing use and continued commercial development. A change in the use of the Site would potentially result in increased risks of exposure to impacted soil and groundwater during construction activities and through modified use of the Site and buildings. The application of an Activity Use Limitation on the Site ensures review of the potential risks of exposure to the levels of impacted soil and groundwater then present at the Site. The review would be conducted by a Licensed Site Professional prior to development of the Site to evaluate the risks of exposure during construction and following modification of the Site to its proposed uses. The Activity and Use Limitation will, therefore, be applied and recorded in accordance with the Massachusetts Contingency Plan, 310 CMR 40.1012 and 40.1074, respectively.

6.2 Nature and Extent of Contamination

Contamination with petroleum hydrocarbons has been identified in the soil and groundwater at the Site. These residuals are thought to have originated from the storage of gasoline on Site.

Decoulos & Company conducted field inspections and investigations from April, 2002 to June, 2002 to characterize the current nature and extent of the contamination. As described previously in this report, the field investigation studies included the collection of groundwater samples from both a pre-existing monitoring well and new monitoring wells; the collection of soil samples; and, the collection of soil gas samples from the property adjacent to the Site building. Two soil gas samples were collected within thirty feet of the commercial Site building.

Soil sample analysis results recorded in previous reports for the Site and recent field activities are presented in Table 1. The February 13, 1998 (from SAGE) and May 8, 2002 results conclude that concentrations for most VPH target analytes were below applicable S1, GW-2 standards. The VPH range C_9-C_{10} Aromatics detected in the February 13, 1998 soil samples were slightly above the S1, GW2 soil standard of 100 milligrams per kilogram (mg/kg). The current soil sample analysis results conclude that the concentrations of C_5-C_8 Aliphatics, C_9-C_{12} Aliphatics, and C_9-C_{10} Aromatics were below the applicable S1, GW-2 standards of 100, 1,000 and 100 mg/kg, respectively, with the exception of the 342 mg/kg concentration detected in sample DB-3/S-3.

Groundwater sample analysis results from two rounds of field activities conducted on May 10, 2002 and June 4, 2002 along with the applicable Method 1 standards are presented in Table 3. These results conclude that the concentrations of the VPH target analyte benzene detected in the DMW-1 and MW-3R samples in both the May 10, 2002 and June 4, 2002 rounds exceeded the applicable Method 1, GW-2/GW-3 groundwater standards. The MTBE concentrations detected in the DMW-4 groundwater samples collected on May 10, 2002 and June 4, 2002 both exceeded the applicable Method 1, GW-2/GW-3 standard for this VPH target analyte. The concentrations of toluene and m,p-xylenes detected in the June 4, 2002 DMW-2 groundwater sample and both rounds of MW-3R samples also exceeded the Method 1, GW-2/GW-3 standards for these constituents. The average concentrations of VPH range C_5-C_8 Aliphatics detected in the DMW-1, DMW-4 and DMW-3R samples exceeded applicable Method 1, GW-2/GW-3 standards potentially due to elevated laboratory reporting limits (RLs). The Method 1, GW-2 standard for C_5-C_8 Aliphatics was exceeded by the concentrations detected in June 4, 2002 groundwater samples collected form DMW-2 and DMW-3. The concentration of C_9-C_{10} Aromatics detected in the June 4, 2002 sample collected from DMW-2 and both samples collected from MW-3R exceeded Method 1, GW-2/ GW-3 standards.

The soil gas analysis results of the samples collected on June 4, 2002 are presented in Table 4 along with the development of site specific Method 2, GW-2/GW-3 standards.

6.3 Background Conditions and Contaminants of Concern

The Site is a suburban property in a residential zone located along a business secondary state highway. According to Randolph Fire Department records, it has been used as an automotive fueling station since approximately 1935. The Site, therefore, has a long history of automotive use and surficial soils would be expected to be impacted with pyrogenic polynuclear aromatic hydrocarbons (PAHs) associated with automotive exhaust residuals. Subsurface soils would also be expected to be contaminated with pyrogenic PAHs in areas where asphalt, urban fill, or surface soils have become intermixed. Background conditions on the Site would therefore be expected to include pyrogenic PAHs and other petroleum residuals.

Site-specific background values were not determined during this study. As a default, background concentrations of PAHs cited by MADEP as "Urban Background" in draft guidance (MADEP: Draft *Proposed Changes: Guidance for Disposal Site Risk Characterization,* February 1997), will be used instead. In the absence of default background concentrations for petroleum fractions

in soil and groundwater, and as a conservative measure, background for the petroleum fractions is assumed to be non-detect.

Based upon the field activities of both SAGE and Decoulos, contaminants of concern identified at the Site include petroleum residuals associated with gasoline: benzene, toluene, MTBE, xylenes and the VPH fractions.

6.4 Applicability of Method 2

A Method 2 Risk Characterization is appropriate for characterization of the risk of harm to human health, safety, public welfare and the environment for exposure to petroleum constituents identified at this Site because:

- The contamination is limited to soil and groundwater,
- There are no contaminants that bioaccumulate within the top two feet of soil, and
- Method 1 Standards have been promulgated by MADEP for the contaminants of concern.

6.5 Applicable Soil and Groundwater Categories

6.5.1 Groundwater Categories

Under the MCP, groundwater is categorized as GW-1, GW-2 and GW-3. GW-1 addresses groundwater as a potential drinking water source. GW-2 addresses the potential for volatilization and entrainment of contaminants into occupied buildings and is applicable within 30 feet of occupied buildings where the average depth to groundwater is 15 feet or less. GW-3 addresses the potential for discharge of groundwater to surface water.

GW-1 is not applicable at this Site since the area is not categorized as a current or potential drinking water resource area and the Site is located within 500 feet of a known private drinking water supply well. GW-2 is applicable as the Site is occupied by a commercial building and within 30 feet of an adjacent commercial building. GW-3 is applicable throughout the Site since GW-3 is applicable at all locations due to the potential for groundwater to enter a surface water body.

see replacement page

In accordance with the Massachusetts Contingency Plan, 310 CMR 40.0980, a Method 2 Risk Characterization was used to characterize the risk to human health, safety, welfare and the environment at the disposal site defined by RTN 3-14992. The Site includes the area defined by the property boundaries. The Method 2 Risk Characterization included modification of selected Method 1 Standards according to procedures outlined in MADEP, *Characterizing Risks posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach, Final Draft,* June, 2001.

The risk characterization determined that a condition of *No Significant Risk* exists for the entire Site and that restrictions on future uses are not required. This Method 2 Risk Characterization therefore supports a Class A-2 Response Action Outcome. Steps in the characterization of risk follow.

Site A-3 w/ AUL see replacement page

6.5.2 Soil Categories

MCP soil standards consider the direct effects of contact exposure to contaminants in the soil as well as the leaching potential and impact upon groundwater quality. Method 1 soil standards have been promulgated for nine categories corresponding to three degrees of soil exposure and three types of groundwater exposure: S-1/GW-1, S-1/GW-2, S-1/GW-3; S-2/GW-1, S-1/GW-2, S-2/GW-3; S-2/GW-1, S-2/GW-2, S-2/GW-3. The soil categories (S-1, S-2, and S-3) are based on exposure as a function of the type of receptor, the frequency and intensity of exposure, and the accessibility of the contaminated soil.

The MCP requires that the soil category be evaluated for a Site based on the current and foreseeable uses of the property. The Site is currently a commercial vehicle service station and retail fuel dispensing facility. The Site is in an area accepted by the Randolph Zoning Board of Appeals for commercial use and located on a busy secondary state highway. There are residential properties located in the vicinity of the Site to the east and south. It is likely that the Site will be used as it is now or further developed for commercial use. The development of the Site may or may not entail construction or use of the property which may pose an increased risk of exposure to impacted soil and groundwater. For this reason, an Activity and Use Limitation has been applied and recorded for the Site. This allows the Site soils to be evaluated relative to the MCP Method 1 soil standards for S2 soils in GW-2/GW-3 groundwater areas for preparation of this RAO.

6.6 Exposure Points and Exposure Point Concentrations

6.6.1 Soil

Under the MCP, the exposure point for contact with contaminated soil is defined as the average concentration in the area of the contamination. If all detected concentrations are less than the applicable Method 1 or 2 Standards, however, calculation of an average is not required and the result at each individual sampling point can be compared directly with the applicable standard. Table 1 presented the soil sample results compiled from a recent investigation by Decoulos and previous data presented by SAGE in 1998. There were no VPH target analytes detected in samples analyzed in February 1998 or May 2002 in concentrations which exceeded MCP Method 1 standards for S-2 soils in GW2/GW-3 groundwater areas. The analysis results of all four soil samples collected on February 13, 1998 equaled or slightly exceeded Method 1, S-2 soil in GW-2/GW-3 groundwater standards for VPH range C_9-C_{10} Aromatics. The concentrations of this VPH range were lower in the May 8, 2002 soil sample round and the average was well below the applicable standard. The concentration of C_5-C_8 Aliphatics detected in May 8, 2002 sample DB-3/S-3 exceeded the Method 1, S-1 in GW-2/GW-3 standard, however, when this sample is averaged with the previous and recent sample analyses the result is well below the applicable standard.

6.6.2 Groundwater

Exposure point concentrations for groundwater under Method 1 or Method 2 Risk Characterizations are defined as the concentration of contaminants detected at each individual monitoring point. However, GW-2 Standards are only applicable where the average depth to groundwater is less than 15 feet and at points within 30 feet of an occupied building. GW-2 standards are applicable at DMW-1 and DMW-4.

Where GW-2 concentrations are exceeded, the MCP allows for Method 2 modifications using directly measured soil gas concentrations. Because the soil gas results were measured for the VPH ranges and target analytes range rather than modeled from groundwater, they more directly represent the exposure point concentrations for entrainment of soil vapors into an occupied building. Soil gas results adjacent to the commercial Site building are presented in Table 4.

6.7 Comparison with Method 1 Standards

6.7.1 Soil

Method 1 S2/GW2 and S2/GW3 Soil Standards are met for all the Contaminants of Concern when averaged over the Site and two rounds of soil sample collection as shown in Table 1. An Activity and Use Limitation has been applied and recorded for the Site. The Activity and Use Limitation allows for the evaluation of Contaminants of Concern using Method 1 S1/GW2 and S1/GW3 standards. Based on a comparison with the Method 1 S2/GW2 and S2/GW3 Soil Standards, a condition of *No Significant Risk* exists for soil exposure under current uses of the Site. The results from the soil investigation represent the exposure point concentrations for the soil points.

6.7.2 Groundwater

Applicable Method 1 GW2 and GW3 Standards are met for many Contaminants of Concern as shown on Table 3. However, the Method 1 Standard is exceeded for the following contaminants:

- Method 1 GW2 Exceedance:
  - C5-C8 Aliphatics in DMW-1, DMW-2, DWM-3, DMW-4, MW-3R
  - C9-C10 Aromatics in DMW-2, MW-3R
  - Benzene in DMW-1, MW-3R
  - MTBE in DMW-4
  - Toluene in DMW-2, MW-3R
  - m-,p-Xylenes in DMW-2, MW-3R
  - o-Xylene in MW-3R

Development of Method 2 Standards - GW2
Comparison of Soil Gas Results and No Impact Soil Gas Values
633 North Main Street
Randolph, MA
Table 4

							Calculated Method 2 Standard		
	Date Collected:	6/5/2002	6/5/2002	MADEP No Impact[1] Soil Gas	Maximum GW	Average GW	Calculated[2] Method 2	Calculated[3] Method 2	Ceiling Concentration
	Sample ID:	DG-1	DG-2	Estimate	Result	Result	GW2	GW2	GW2
Parameter	Units:	ug/m^3	ug/m^3	ug/m^3	ug/L	ug/L	ug/L	ug/L	ug/L
Benzene		ND	2,880		5,970	1,877			
Ethylbenzene		ND	ND <810		2,590	740			
MTBE		ND	29,200		69,800	12,752			100,000
Naphthalene		ND	ND <9540		453	184			
Toluene		ND	ND <822		19,200	4,652			
m-,p-Xylenes		3.25	390		15,700	5,472			
o-Xylene		ND	ND <180		6,750	2,204			
C5-C8 Aliphatic		1,630	239,000	170,000	4,100	1,661	2,331	62,963	50,000
C9-C12 Aliphatic		1,880	6,090	180,000	563	403	14,738	55,385	50,000
C9-C10 Aromatic		ND	181	160,000	7,640	3,101	3,802,307	9,696,970	50,000

NOTES

Method 1 GW2 Exceedance

[1] Based upon: MADEP *Background Documentation for the Development of the MCP Numerical Standards* 1994 and Implementation of MADEP VPH/EPH Approach Oct 1997

[2] Assume gas transport coefficient = average gw concentration divided by average soil gas concentration. Multiply this coefficient by MADEP "no impact" soil gas value to calculate Method 2 GW2 Standard. Then default to 50,000 ppb where calculated GW2 > 50,000 ppb.

[3] Using equation from 310 CMR 40.0983(2)(C)

6.8 Development of Method 2 Standards for Groundwater

To more accurately evaluate site-specific risks, we developed a Method 2 Standard for the VPH fractions and target analytes that exceeded the applicable Method 1 Standard. Development of the Method 2 Standard was conducted according to guidance provided in MADEP, *Characterizing Risks posed by Petroleum Contaminated Sites: Implementation of MADEP VPH/EPH Approach, Final Draft,* June, 2001.

6.8.1 Method 2 GW-2 Standards

Table 5 presents development of the Method 2 GW-2 Standard for the C5-C8 aliphatic range and the C9-C10 Aromatic range. Air data is not currently available for characterizing site specific risks of exposure to MTBE using the Method 2 procedure. The risks associated with MTBE will be evaluated assumed to be incorporated into the C9-C10 Aromatics analysis.

Soil gas samples were obtained and analyzed to rule out an impact to indoor air at the buildings on the Site. The samples were collected from a depth of approximately 36 inches below grade as described earlier in this report and analyzed for APHs. Detected concentrations were then compared with "No Impact" soil gas concentrations estimated by DEP based on background considerations. Averaged site concentrations are less than the estimated "No Impact" concentrations and a condition of *No Significant Risk* with respect to vapor entrainment is demonstrated.

Using the "No Impact" concentrations for soil gas, we also back-calculated to Method 2 GW2 Standards. For the contaminants of concern, the calculated Method 2 GW2 Standards were as follows:

Contaminant of Concern	Most Conservative Calculated Method 2 Standard
• C5-C8 Aliphatics	2,331 ug/l
• C9-C10 Aromatics	50,000 ug/l

Groundwater concentrations on the Site are less than the Method 1 GW2 Standards or the calculated Method 2 GW2 Standards confirming that a condition of *No Significant Risk* exists with respect to vapor entrainment.

6.8.2 Method 2 GW-3 Standards

Groundwater concentrations of VPH ranges and target analytes at the Site are all less than the Method 1 standards for GW3 with the exception of the m,p-xylenes and C9-C10 Aliphatics.

The GW3 discharge point is a stormwater outfall into Norroway Brook along Chestnut Street. The distance from the Site, assuming that the groundwater is being "short-circuited" along a 15 inch reinforced concrete drain pipe, is approximately 900 feet. Norroway Brook discharges into a public drinking water supply reservoir.

According to Randolph Engineer Stephen P. Levreault, the drainage line was installed in the 1930s. Backfill material would not be expected to be unusually pervious, as the reinforced concrete pipe was capable of withstanding large backfill forces during construction.

The Method 2 Standards for GW-3 developed for the m,p-xylenes and C9-C10 Aliphatics are presented in Table 5. Based on the analysis presented in the table, the results demonstrate that a condition of *No Significant Risk* exists with respect to surface water discharge.

6.9 Summary of Characterization of Risk to Public Health and the Environment

This risk characterization has demonstrated that site conditions poses *No Significant Risk* to human health or the environment for the foreseeable period of time. The following specific criteria are presented:

Characterization of Risk due to Soil Exposure

- The average soil concentrations on the Site are less than Method 1 S1/GW2 and S1/GW3 Soil Standards for all Contaminants of Concern. Therefore, a condition of *No Significant Risk* exists for soil exposure under all potential future uses of the Site and it is not necessary to implement any use restrictions.

Characterization of Risk to Human Health from Exposure to Groundwater

- GW1 Standards are not applicable to the Site.
- Method 1 GW2 Standards are met within 30 feet of the residential dwelling for all parameters except for the C5-C8 Aliphatic petroleum fraction.
- Calculated Method 2 GW2 Standards are met for DCW-4 for the C5-C8 Aliphatic petroleum fractions.
- Therefore, a condition of *No Significant Risk* exists with respect to human health for any foreseeable period of time.

Characterization of Risk to the Environment from Discharge of Groundwater

- Groundwater concentrations are less than Method 1 Standards for all parameters.
- Since all concentrations are less than Method 1 Standards, a condition of *No Significant Risk* exists with respect to surface water discharge from the Site.

6.10 Characterization of Risk to Public Welfare

As required by the MCP, we also evaluated the risk of harm to public welfare. Site conditions do not represent nuisance conditions, nor will they result in a loss of property value or a restriction of use of either building on the Site. In addition, concentrations of contaminants are less than Upper Concentration Limits for both soil and groundwater. Thus, a level of *No Significant Risk* to public welfare exists under current and foreseeable future conditions.

Development of Method 2 Standards - GW3
Method 2 Calculations for Groundwater Discharge Concentrations
at Surface Water Discharge Point 900 feet from Source Area
633 North Main Street
Randolph, MA
Table 5

Lab ID: / Date Collected: / Sample ID:		DMW-2 Average	Calc. Conc. ff. transport 900 feet	MW-3R Average	Calc. Conc. ff. transport 900 feet			Method 1		MADEP Discharge Concen. Guideline	Calculated Method 2 Standard for discharge 900 feet from source	UCL-Default Method 2 GW3 Standard
Parameter	Units:	ug/L	ug/L	ug/L	ug/L	UCLs	GW1	GW2	GW3	ug/L	ug/L	ug/L
m-,p-Xylenes		[redacted]	148	[redacted]	228	100,000	10,000	6,000	6,000	400	231,486	100,000
C9-C10 Aromatics		[redacted]	85	[redacted]	126	100,000	200	5,000	4,000	400	231,486	100,000

C5-C8 Aliphatics and C9-C10 Aromatics calculated dilution factors for transport 1000 feet = 0.0160 (Figure 4-1, *Implementation of MADEP VPH/EPH Approach,* October 1997).
Assume 100% discharge without further dilution by receiving water.

Exceedance of Method 1 GW3 Standard

6.11 Characterization of Risk to Public Safety

The risk of harm to public safety, as described in 310 CMR 40.0960, was evaluated for the disposal site. The Site does not contain the following items related to a release of oil or hazardous materials:

- There are no rusted or corroded drums or containers, open pits or lagoons on the Site.
- There is no threat of fire or explosion, or the presence of explosive vapors on the Site.
- There are no uncontainerized materials exhibiting the characteristics of corrosivity, reactivity or flammability on the Site.

Based on the foregoing, a condition of *No Significant Risk* with respect to Public Safety exists.

7.0 FEASIBILITY OF RESTORATION TO BACKGROUND

A review of the residual groundwater contamination indicates that background levels have not been achieved. However, the source of the elevated constituents, the former USTs and the petroleum contaminated soil have all been removed. Additional remedial activities to remove further soil and treat groundwater contamination would be the primary alternative. The benefit to be achieved would be a slow and gradual restoration of groundwater quality. However, no benefit would be achieved in terms of risk reduction. The additional cost of further soil removal and groundwater remedial actions does not justify the incremental benefit of risk reduction, environmental restoration and monetary and non-pecuniary values, pursuant to 310 CMR 40.860(6)(a).

Given that groundwater concentrations are expected to decrease over time through natural attenuation, the costs of additional remedial actions far outweigh the benefit of achieving background at the location. Therefore, the achievement of background is not considered feasible and the levels of residual contamination have been reduced to levels approaching background to the most practical extent feasible.

8.0 SUMMARY AND CONCLUSIONS

The property is described by the Town of Randolph Assessors as on Map 30, Block C, Lot 6.1A and is recorded at the Norfolk Registry of Deeds in Book 9310, Page 747. The Site fronts on both North Main Street and Orchard Street.

The land is improved by a one story wood framed commercial building on a concrete slab. The commercial building has a postal address of 633 North Main Street. On January 21, 1993, the Randolph Zoning Board of Appeals approved an upgraded commercial use for the Site and the plan accepted for this approval was recorded at the Norfolk Registry as Number 124-1993 in Plan Book 412.

Since approximately 1935, the Site has been used as a retail gasoline filling station. On June 11, 1997, a release of petroleum was reported to the Massachusetts Department of Environmental Protection (DEP) pursuant to G.L. c.21E and the Massachusetts Contingency Plan (MCP). The release was assigned tracking number 3-15188 by DEP and apparently associated with a 2,000 gallon underground storage tank (UST) removed by RC Construction in June of 1997.

On October 27, 1997, another release of petroleum was reported to DEP as a result of the removal of two 6,000 gallon USTs. DEP assigned tracking number 3-15653 to the release. A total of 275.05 tons of petroleum contaminated soil from the release was recycled at Bardon Trimount in Stoughton, MA.

The Site is currently used for retail vehicle fueling and light automotive repair. The vehicle fueling operation utilizes one 12,000 gallon double-walled fiberglass underground storage tank (UST) for fuel storage. The UST is split to provide storage for 9,000 gallons of regular fuel and 3,000 gallons of premium gasoline. Double-walled fiberglass piping distributes fuel product to the fuel dispenser pumps as shown on Figure 3. The fuel dispenser island is covered by an overhead canopy. The entire UST system is monitored and automatically gauged by a Veeder-Root TLS-350 Monitoring System.

Full documentation on the Site history and compliance with the MCP was documented in reports prepared by SAGE. Additionally, soil, groundwater and soil gas data was collected by Decoulos & Company personnel.

The site investigations and risk characterization have determined that there is *No Significant Risk* to public health, safety, welfare or the environment from the remaining petroleum constituents within groundwater on the Site and a potentially *Significant Risk* to public health, safety, welfare or the environment from the remaining petroleum constituents within the soil on the Site.

As a result of the risk characterization, an Activity and Use Limitation was recorded at the Norfolk Registry of Deeds on June 14, 2002 as Instrument Number 102515 to limit the use of the Site to commercial or industrial uses.

9.0 REFERENCES

Background Documentation for the Development of the MCP Numerical Standards, MADEP Bureau of Waste Site Cleanup and Office of Research and Standards, April, 1994.

Characterizing Risks posed by Petroleum Contaminated Site: Implementation of MADEP VPH/EPH Approach, Final Draft, June, 2001.

Guidance for Disposal Site Risk Characterization, MADEP Bureau of Waste Site Cleanup and Office of Research and Standards, July, 1995.

Immediate Response Action Plan, SAGE Environmental, Inc., December, 1997

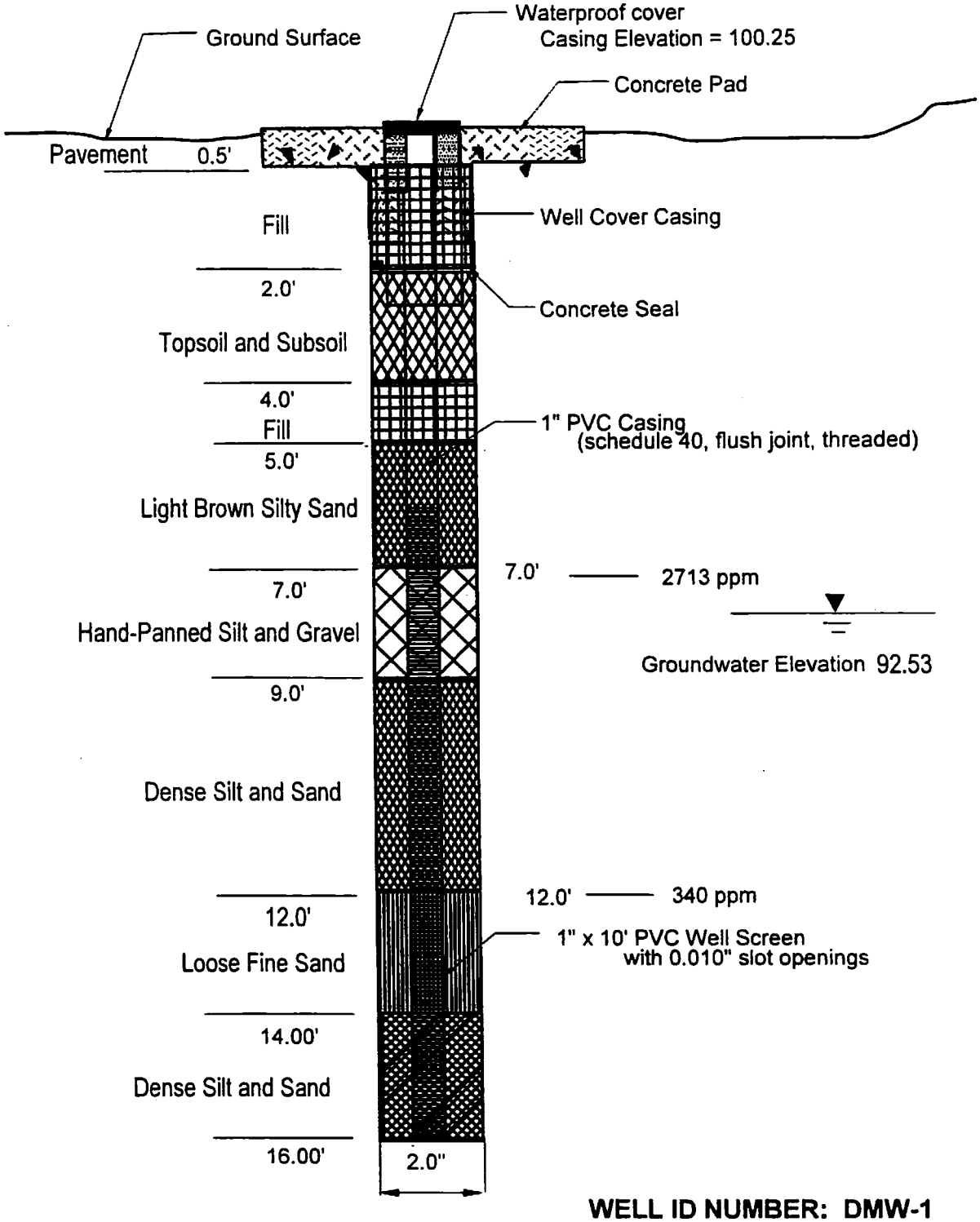
Immediate Response Action Outcome Statement, SAGE Environmental, Inc., May, 1998

Massachusetts Contingency Plan, 310 CMR 40.0000

Phase I Initial Site Investigation, SAGE Environmental, Inc., June, 1998

Standard References for Monitoring Wells, MADEP

APPENDIX A
MONITORING WELL BORING LOGS



WELL ID NUMBER: DMW-1

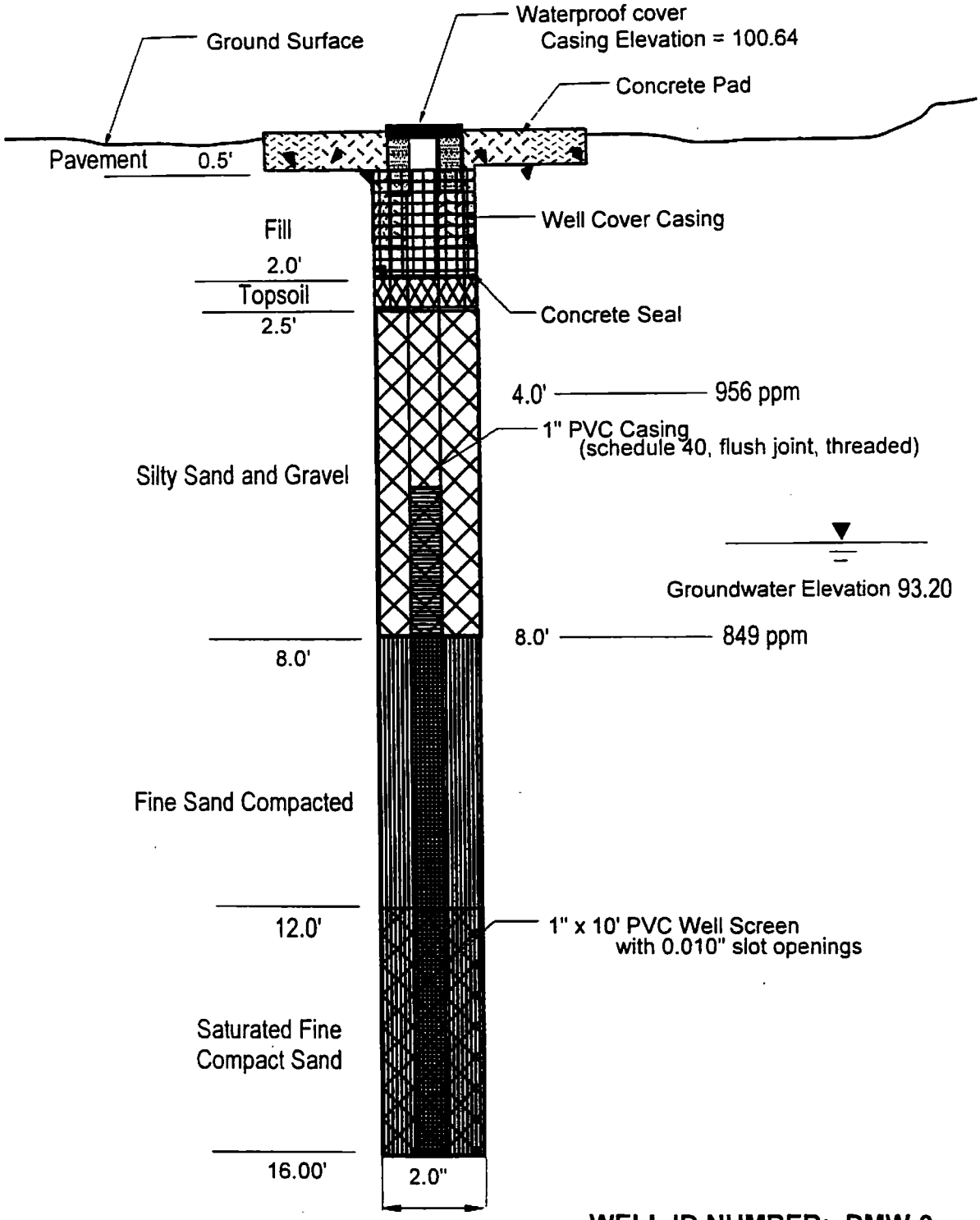
DRILLING METHOD:
DIRECT PUSH PROBE

DB-1/DMW-1 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA



WELL ID NUMBER: DMW-2

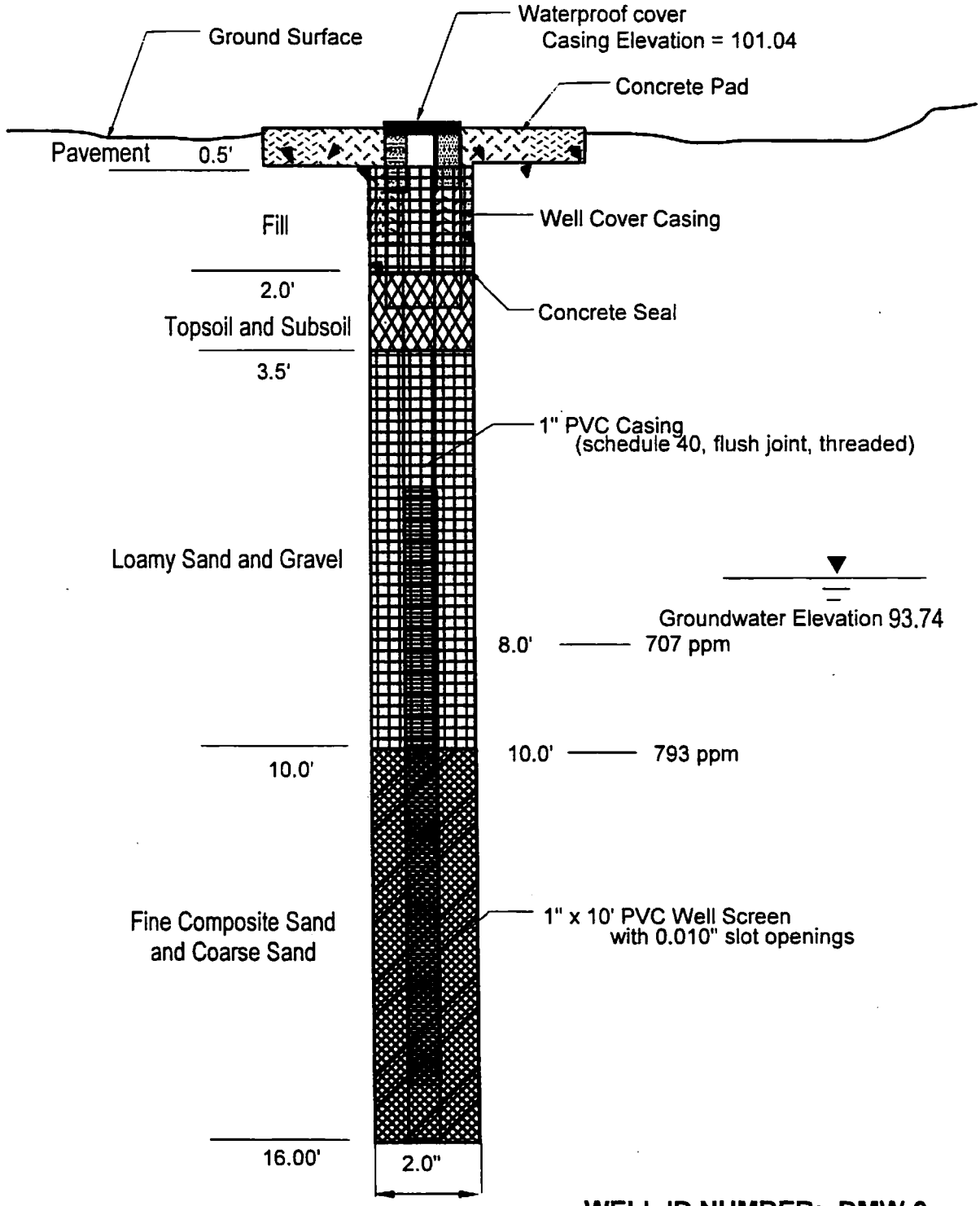
DRILLING METHOD:
DIRECT PUSH PROBE

DB-2/DMW-2 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA



WELL ID NUMBER: DMW-3

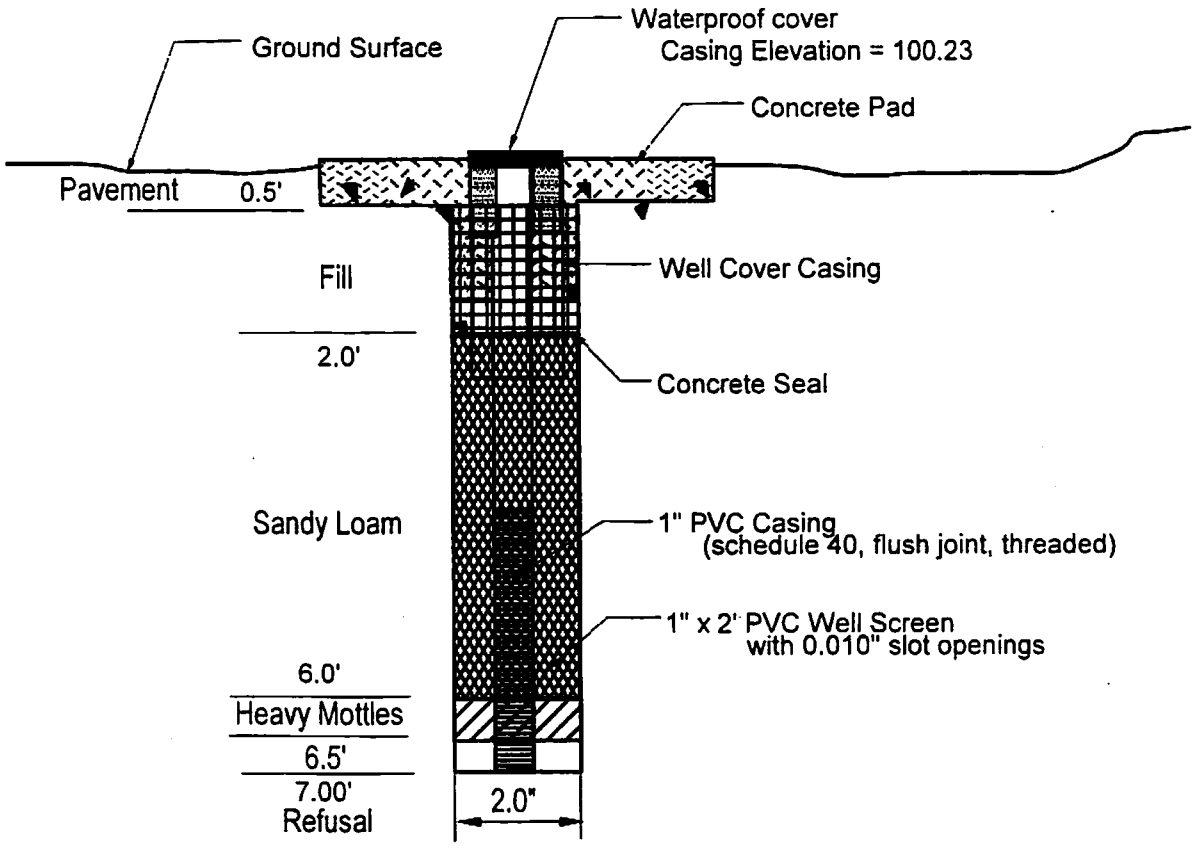
DRILLING METHOD:
DIRECT PUSH PROBE

DB-3/DMW-3 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA



WELL ID NUMBER: DG-1

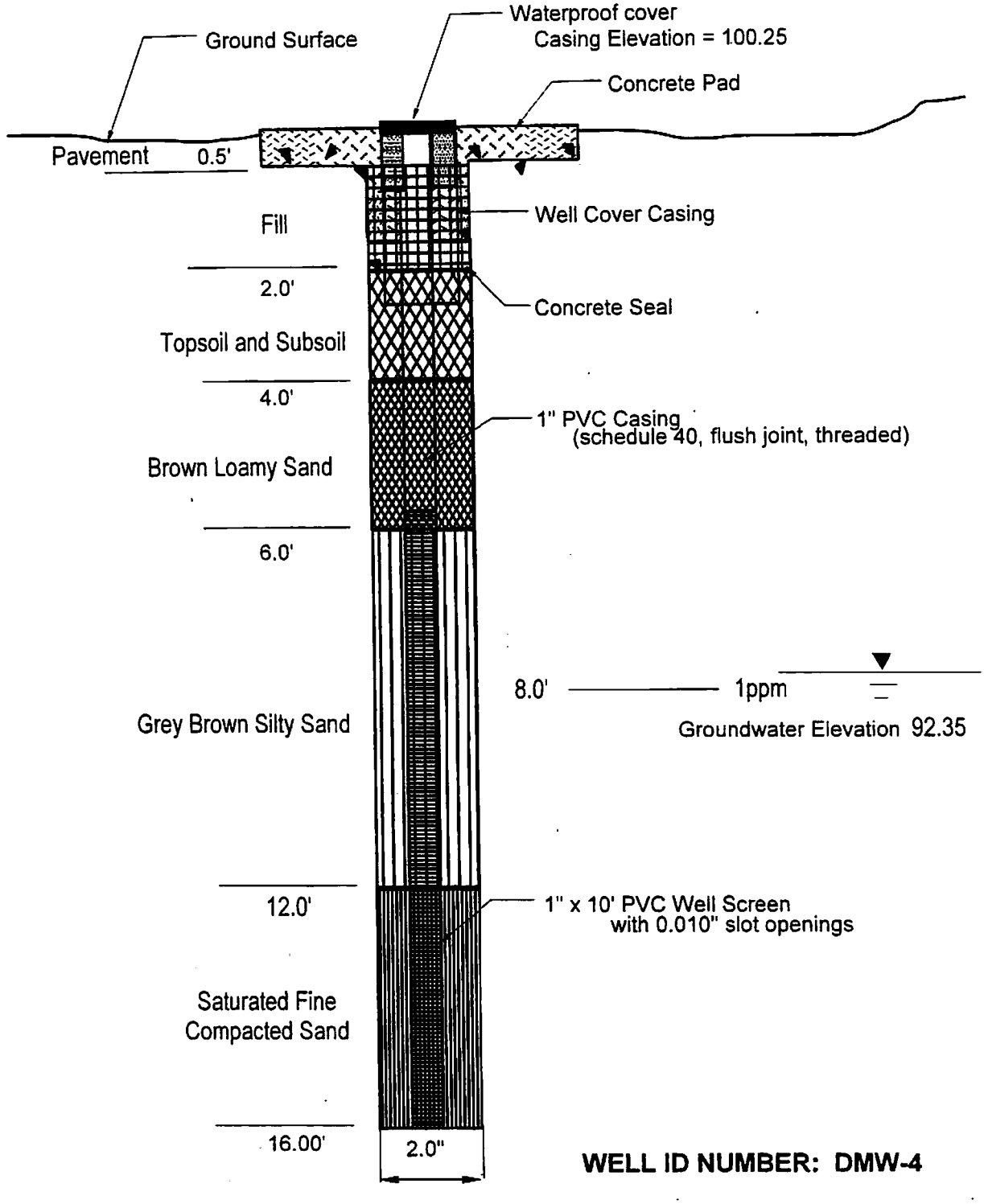
DRILLING METHOD:
DIRECT PUSH PROBE

DB-4/DG-1 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA



WELL ID NUMBER: DMW-4

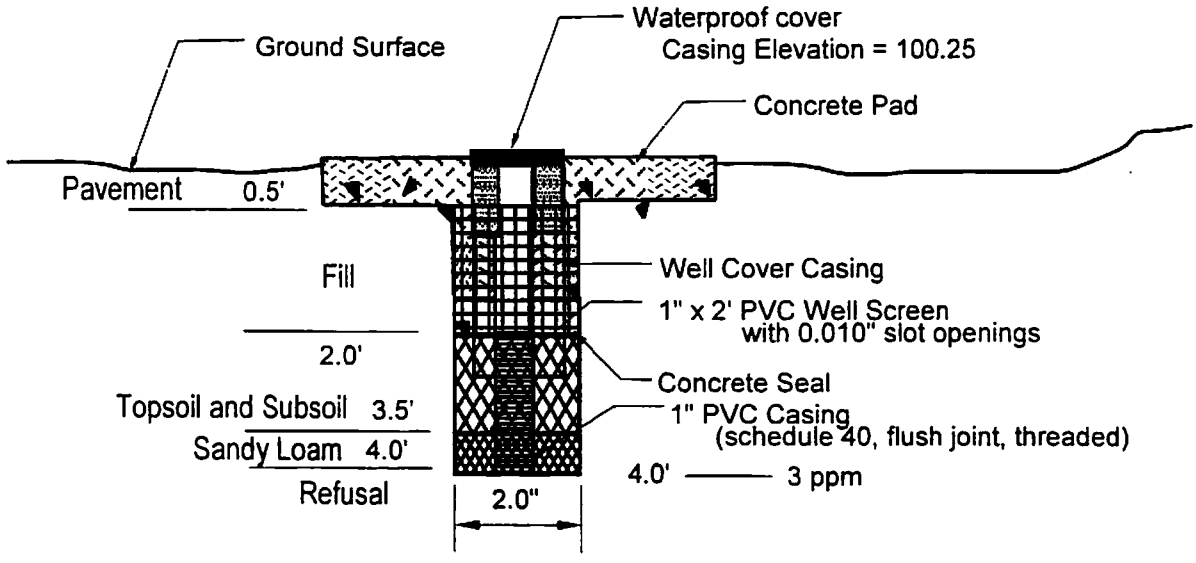
DRILLING METHOD:
DIRECT PUSH PROBE

DB-5/DMW-4 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA



WELL ID NUMBER: DG-2

DRILLING METHOD:
DIRECT PUSH PROBE

DB-6/DG-2 BORING LOG

(NOT TO SCALE)

DECOULOS & COMPANY

SITE LOCATION: 633 N. MAIN STREET, RANDOLPH, MA

APPENDIX B
LABORATORY CERTIFICATES OF ANALYSIS

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Decoulos & Company
248 Andover Street
Peabody, MA 01960

Attn: Jim Decoulos

PROJECT ID:	608 633 North Main Randolph
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	122620 - 122624
DATE PREPARED:	May 15, 2002
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director/Date

SAMPLE INFORMATION

Matrix	☐ Aqueous ☒ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☒ N/A ☐ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☒ Samples received in MeOH ☒ Covering soil ? ☐ Not	☒ 1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH GC/MS
Method for Target Analytes: MA VPH - GC/MS
VPH Surrogate Standards
2,5-Dibromotoluene
1,2-DCE
Toluene-d8
BFB

			Client ID:	DB-1/S-2	DB-2/S-1	DB-3/S-3
			Lab ID:	122620	122621	122622
			Date Collected:	05/08/02	05/08/02	05/08/02
			Date Received:	05/09/02	05/09/02	05/09/02
			Date Analyzed:	05/10/02	05/10/02	05/10/02
			Dilution Factor:	1.0	1.0	1.0
			Total solids (%):	91	91	90
Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C5-C8 Aliphatics1	N/A	1.50	mg/Kg	**66.8**	**65.5**	**357**
Unadjusted C9-C12 Aliphatics1	N/A	0.50	mg/Kg	**75.5**	**135**	**228**
Benzene	C5-C8 Aliph	0.50	mg/Kg	ND	ND	ND
Ethylbenzene	C5-C8 Aliph	0.50	mg/Kg	**1.43**	**1.03**	**2.32**
Methyl-tert-butyl ether	C5-C8 Aliph	0.25	mg/Kg	**0.868**	ND	ND
Naphthalene	N/A	1.00	mg/Kg	**1.93**	**4.02**	**3.56**
Toluene	C5-C8 Aliph	0.50	mg/Kg	ND	ND	ND
m-,p-Xylenes	C5-C8 Aliph	0.50	mg/Kg	**2.56**	**7.92**	**12.6**
o-Xylene	C9-C12 Aliph.	0.50	mg/Kg	ND	**3.96**	**4.14**
C5-C8 Aliphatic Hydrocarbons2	N/A	1.50	mg/Kg	**61.9**	**56.6**	**342**
C9-C12 Aliphatic Hydrocarbons3	N/A	0.50	mg/Kg	**51.6**	**72.9**	**138**
C9-C10 Aromatic Hydrocarbons	N/A	0.50	mg/Kg	**23.9**	**58.1**	**86.2**
1,2-DCE Surrogate Recovery				93%	104%	110%
Toluene-d8 Surrogate % Recovery				97%	100%	104%
BFB Surrogate % Recovery				100%	104%	102%
2,5-Dibromotoluene Surrogate % Recovery				84%	105%	93%
Surrogate Acceptance Range				70-130%	70-130%	70-130%

[1]Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

[2]C_5-C_8 Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

[3]C_9-C_{12} Aliphatic HCs exclude concentrations of Target Analytes AND C_9-C_{10} Aromatic Hydrocarbons eluting in that range

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method? ☐ No ☒ Yes - Details below

Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion Chromatogram and all targets are quantitated by GC/MS Selected Ion Measurements.

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/15/02

SAMPLE INFORMATION

Matrix	☐ Aqueous ☒ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☒ N/A ☐ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☒ Samples received in MeOH ☒ Covering soil ? ☐ Not	☒1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH GC/MS
Method for Target Analytes: MA VPH - GC/MS
VPH Surrogate Standards
2,5-Dibromotoluene
1,2-DCE
Toluene-d8
BFB

Client ID:	DB-6/S-1
Lab ID:	122623
Date Collected:	05/08/02
Date Received:	05/09/02
Date Analyzed:	05/10/02
Dilution Factor:	1.0
Total solids (%):	91

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C5-C8 Aliphatics1	N/A	1.50	mg/Kg	1.80
Unadjusted C9-C12 Aliphatics1	N/A	0.50	mg/Kg	ND
Benzene	C5-C8 Aliph	0.50	mg/Kg	ND
Ethylbenzene	C5-C8 Aliph	0.50	mg/Kg	ND
Methyl-tert-butyl ether	C5-C8 Aliph	0.25	mg/Kg	ND
Naphthalene	N/A	1.00	mg/Kg	ND
Toluene	C5-C8 Aliph	0.50	mg/Kg	ND
m-,p-Xylenes	C5-C8 Aliph	0.50	mg/Kg	ND
o-Xylene	C9-C12 Aliph.	0.50	mg/Kg	ND
C5-C8 Aliphatic Hydrocarbons2	N/A	1.50	mg/Kg	1.80
C9-C12 Aliphatic Hydrocarbons3	N/A	0.50	mg/Kg	ND
C9-C10 Aromatic Hydrocarbons	N/A	0.50	mg/Kg	ND
1,2-DCE Surrogate Recovery				106%
Toluene-d8 Surrogate % Recovery				96%
BFB Surrogate % Recovery				103%
2,5-Dibromotoluene Surrogate % Recovery				82%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon ranges exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

[2]C_5-C_8 Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that range

[3]C_9-C_{12} Aliphatic HCs exclude concentrations of Target Analytes AND C_9-C_{10} Aromatic Hydrocarbons eluting in that range

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method? ☐ No ☒ Yes - Details below

Aromatic and aliphatic ranges are quantitated by GC/MS Total Ion Chromatogram and all targets are quantitated by GC/MS Selected Ion Measurements.

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/15/02

CLIENT NAME:	**DECOULOS & COMPANY**	PROJECT ID:	633 NORTH MAIN
SAMPLE TYPE:	SOIL	REPORT DATE:	05/15/02
COLLECTION DATE:	05/08/02	ANALYZED BY:	AS 05/14/02
REC'D BY LAB:	05/09/02	EXTRACTION DATE:	N/A
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A

TOTAL SOLIDS

SAMPLE NUMBER	SAMPLE LOCATION	TOTAL SOLIDS (%)	DETECTION LIMIT (%)
122624	633 NORTH MAIN	**91.0**	1.0

Method Reference:

EPA Method 160.3 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
10 Plain Street
Braintree, MA 02184
Office: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐
STANDARD: 5 Days ✓ Rush
Approved By:

Page 1 of 1

SPECIAL INSTRUCTIONS
Rec'd on ice JM 5/9/02

Client: DECOULOS + CO
Address: 248 ANDOVER ST
PEABODY, MA 01960
Phone: 978-532-8154
Fax: 978-359-6034
Contact: JIM DECOULOS
E-mail: JAMESJ@DECOULOS.COM

Project Number: 608
Project Location: 633 NORTH MAIN
RANDOLPH
Purchase Order #:
Collected By: JJD

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	TIME	SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	VPH								TEMPERATURE	LAB PH
DB-1/S-2	5/8	1030	JJD		V	1	S	X			122620	X								14°	
DB-2/S-1	"	1100	"			"	"	"			122621	X								"	
DB-3/S-3	"	1200	"			"	"	"			122622	X								"	
DB-6/S-1	"	1300	"			"	"	"			122623	X								"	
% Solids											122624	— use as % solids									

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By: Date/Time 5/9/02 0830
Received By: Date/Time: 5/9/02 0830
Relinquished By: 5/9/02 3:50
Received By: 5/9/02 1550
Relinquished By:
Received By GeoLabs:

GEOLABS CHAIN OF CUSTODY

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Decoulos & Company
248 Andover Street
Peabody, MA 01960

Attn: Jim Decoulos

PROJECT ID:	608 633 North Main Street Randolph, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	122715-122719
DATE PREPARED:	May 17, 2002
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director/Date

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS
Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW4-101
Lab ID:	122715
Date Collected:	05/10/02
Date Received:	05/13/02
Date Analyzed:	05/17/02
Dilution Factor:	1.0 / 100*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C_5-C_8 Aliphatics[1]	N/A	4000*	ug/L	**21500**
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	1500*	ug/L	ND
Methyl tert-butyl ether	C_5-C_8 Aliph.	500*	ug/L	**34200**
Benzene	C_5-C_8 Aliph.	500*	ug/L	**1500**
Toluene	C_5-C_8 Aliph.	5	ug/L	**221**
Ethylbenzene	C_9-C_{12} Aliph.	5	ug/L	**183**
m&p-Xylenes	C_9-C_{12} Aliph.	5	ug/L	**594**
o-Xylene	C_9-C_{12} Aliph.	5	ug/L	**181**
Naphthalene	N/A	20	ug/L	**33.6**
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	4000*	ug/L	ND
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	1500*	ug/L	ND
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	55.0	ug/L	**544**
2,5-Dibromotoluene (PID) Surrogate Recovery				105%
2,5-Dibromotoluene (FID) Surrogate Recovery				105%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/17/02

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS
Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW3-102
Lab ID:	122716
Date Collected:	05/10/02
Date Received:	05/13/02
Date Analyzed:	05/17/02
Dilution Factor:	1.0 / 5.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C_5-C_8 Aliphatics[1]	N/A	40	ug/L	980
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	75*	ug/L	367
Methyl tert-butyl ether	C_5-C_8 Aliph.	5	ug/L	21.5
Benzene	C_5-C_8 Aliph.	5	ug/L	ND
Toluene	C_5-C_8 Aliph.	5	ug/L	37.5
Ethylbenzene	C_9-C_{12} Aliph.	5	ug/L	112
m&p-Xylenes	C_9-C_{12} Aliph.	5	ug/L	523
o-Xylene	C_9-C_{12} Aliph.	5	ug/L	256
Naphthalene	N/A	20	ug/L	ND
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	40	ug/L	921
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	75	ug/L	ND
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	55	ug/L	827
2,5-Dibromotoluene (PID) Surrogate Recovery				99%
2,5-Dibromotoluene (FID) Surrogate Recovery				96%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/17/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW1-104
Lab ID:	122718
Date Collected:	05/10/02
Date Received:	05/13/02
Date Analyzed:	05/17/02
Dilution Factor:	50 / 1.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C_5-C_8 Aliphatics[1]	N/A	2000	ug/L	4700		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	750	ug/L	4820		
Methyl tert-butyl ether	C_5-C_8 Aliph.	250	ug/L	2550		
Benzene	C_5-C_8 Aliph.	250	ug/L	2220		
Toluene	C_5-C_8 Aliph.	250	ug/L	2190		
Ethylbenzene	C_9-C_{12} Aliph.	250	ug/L	655		
m&p-Xylenes	C_9-C_{12} Aliph.	250	ug/L	3750		
o-Xylene	C_9-C_{12} Aliph.	250	ug/L	1250		
Naphthalene	N/A	20*	ug/L	246		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	2000	ug/L	ND		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	750	ug/L	ND		
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	2750	ug/L	ND		
2,5-Dibromotoluene (PID) Surrogate Recovery				106%		
2,5-Dibromotoluene (FID) Surrogate Recovery				104%		
Surrogate Acceptance Range				70-130%		

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/17/02

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS
Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	MW-34
Lab ID:	122719
Date Collected:	05/10/02
Date Received:	05/13/02
Date Analyzed:	05/17/02
Dilution Factor:	50 / 1.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C_5-C_8 Aliphatics[1]	N/A	2000	ug/L	**9530**		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	750	ug/L	**17200**		
Methyl tert-butyl ether	C_5-C_8 Aliph.	250	ug/L	**698**		
Benzene	C_5-C_8 Aliph.	250	ug/L	**2350**		
Toluene	C_5-C_8 Aliph.	250	ug/L	**11800**		
Ethylbenzene	C_9-C_{12} Aliph.	5.0*	ug/L	**673**		
m&p-Xylenes	C_9-C_{12} Aliph.	250	ug/L	**10700**		
o-Xylene	C_9-C_{12} Aliph.	250	ug/L	**4290**		
Naphthalene	N/A	20*	ug/L	**136**		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	2000	ug/L	ND		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	750	ug/L	ND		
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	2750	ug/L	**6940**		
2,5-Dibromotoluene (PID) Surrogate Recovery				110%		
2,5-Dibromotoluene (FID) Surrogate Recovery				107%		
Surrogate Acceptance Range				70-130%		

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 05/17/02

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Office: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐
STANDARD: 5 Days ✓
Rush Approved by:

Page 1 of 1

SPECIAL INSTRUCTIONS
Rec'd on ice JM 5/13/02

Client: DECARLOS + CO
Address: 248 ANDOVER ST
PEABODY, MA 01960
Phone: 978-532-8154
Fax:
Contact: JIM DECARLOS
E-mail: JAMESJ@DECARLOS.COM

Project Number: 608
Project Location: 633 NORTH MAIN ST. RANDOLPH
Purchase Order #:
Collected By: RICK MANSFIELD

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	VPH								TEMPERATURE	LAB PH
DMW4-101	5/10/02	0850		DMW4	V	2	GW		X	1/1	122715	X									4.0	
DMW3-102	"	0940		DMW3	"	"	"		"	"	122716	"									"	
DMW2-103	"	1010		DMW2	"	"	"		"	"	122717	"									"	
DMW1-104	"	1115		DMW1	"	"	"		"	"	122718	"									"	
MW-3R-105	"	1120		MW-3R	"	"	"		"	"	122719	"									"	
~~DMW5-106~~	~~"~~	~~1145~~		~~DMW5~~	~~"~~	~~"~~	~~"~~		~~"~~	~~"~~		~~"~~									~~"~~	

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By:	Date/Time	Received By:	Date/Time:
			5/11/02 0930
Relinquished By:	5/13/02 0800	Received By:	5-13-02
		E Connor	7:00
Relinquished By: 5-13-02		Received By: GeoLabs:	5/13/02
E Connor 1:40			1342

GEOLABS CHAIN OF CUSTODY

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Decoulos & Company
248 Andover Street
Peabody, MA 01960

Attn: Jim Decoulos

PROJECT ID:	608 Speedy Lube 633 N. Main Street Randolph, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	123449 - 123456
DATE PREPARED:	June 13, 2002
PREPARED BY:	Christine Johnson

APPROVED BY: _____

Jim Chen, Laboratory Director/Date

Location: 45 Johnson Lane
Braintree, MA 02184

Phone: (781) 848-7844
Fax: (781) 848-7811

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐ 1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS
Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW-4
Lab ID:	123449
Date Collected:	06/04/02
Date Received:	06/05/02
Date Analyzed:	06/11/02
Dilution Factor:	1.0 / 100*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C_5-C_8 Aliphatics[1]	N/A	4000*	ug/L	36100		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	15	ug/L	125		
Methyl tert-butyl ether	C_5-C_8 Aliph.	500*	ug/L	69800		
Benzene	C_5-C_8 Aliph.	5	ug/L	968		
Toluene	C_5-C_8 Aliph.	5	ug/L	ND		
Ethylbenzene	C_9-C_{12} Aliph.	5	ug/L	23.7		
m&p-Xylenes	C_9-C_{12} Aliph.	5	ug/L	30.5		
o-Xylene	C_9-C_{12} Aliph.	5	ug/L	9.80		
Naphthalene	N/A	20	ug/L	ND		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	4000*	ug/L	ND		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	15	ug/L	ND		
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	55	ug/L	58.9		
2,5-Dibromotoluene (PID) Surrogate Recovery				103%		
2,5-Dibromotoluene (FID) Surrogate Recovery				103%		
Surrogate Acceptance Range				70-130%		

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration o$_9$-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW-1			
Lab ID:	123450			
Date Collected:	06/04/02			
Date Received:	06/05/02			
Date Analyzed:	06/11/02			
Dilution Factor:	100 / 1.0*			
Total solids (%):	N/A			

Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C_5-C_8 Aliphatics[1]	N/A	4000	ug/L	**18100**		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	1500	ug/L	**8920**		
Methyl tert-butyl ether	C_5-C_8 Aliph.	500	ug/L	**19300**		
Benzene	C_5-C_8 Aliph.	500	ug/L	**5970**		
Toluene	C_5-C_8 Aliph.	500	ug/L	**1940**		
Ethylbenzene	C_9-C_{12} Aliph.	500	ug/L	**1510**		
m&p-Xylenes	C_9-C_{12} Aliph.	500	ug/L	**5910**		
o-Xylene	C_9-C_{12} Aliph.	500	ug/L	**1350**		
Naphthalene	N/A	20*	ug/L	**327**		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	4000	ug/L	ND		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	1500	ug/L	ND		
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	5500	ug/L	ND		
2,5-Dibromotoluene (PID) Surrogate Recovery				110%		
2,5-Dibromotoluene (FID) Surrogate Recovery				108%		
Surrogate Acceptance Range				70-130%		

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐ 1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	MW-3R
Lab ID:	123451
Date Collected:	06/04/02
Date Received:	06/05/02
Date Analyzed:	06/11/02
Dilution Factor:	100 / 1.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units			
Unadjusted C_5-C_8 Aliphatics[1]	N/A	4000	ug/L	20900		
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	1500	ug/L	23700		
Methyl tert-butyl ether	C_5-C_8 Aliph.	5.0*	ug/L	778		
Benzene	C_5-C_8 Aliph.	500	ug/L	4240		
Toluene	C_5-C_8 Aliph.	500	ug/L	19200		
Ethylbenzene	C_9-C_{12} Aliph.	500	ug/L	2590		
m&p-Xylenes	C_9-C_{12} Aliph.	500	ug/L	15700		
o-Xylene	C_9-C_{12} Aliph.	500	ug/L	6750		
Naphthalene	N/A	20*	ug/L	453		
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	4000	ug/L	ND		
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	1500	ug/L	ND		
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	5500	ug/L	7640		
2,5-Dibromotoluene (PID) Surrogate Recovery				103%		
2,5-Dibromotoluene (FID) Surrogate Recovery				102%		
Surrogate Acceptance Range				70-130%		

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration o$_9$-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW-2
Lab ID:	123452
Date Collected:	06/04/02
Date Received:	06/05/02
Date Analyzed:	06/11/02
Dilution Factor:	100 / 1.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C_5-C_8 Aliphatics[1]	N/A	4000	ug/L	11900
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	1500	ug/L	19800
Methyl tert-butyl ether	C_5-C_8 Aliph.	5.0*	ug/L	63.9
Benzene	C_5-C_8 Aliph.	5.0*	ug/L	735
Toluene	C_5-C_8 Aliph.	500	ug/L	7000
Ethylbenzene	C_9-C_{12} Aliph.	5.0*	ug/L	794
m&p-Xylenes	C_9-C_{12} Aliph.	500	ug/L	12900
o-Xylene	C_9-C_{12} Aliph.	500	ug/L	5910
Naphthalene	N/A	20*	ug/L	183
C_5-C_8 Aliphatic Hydrocarbons[1,2]	N/A	4000	ug/L	4100
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	1500	ug/L	ND
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	5500	ug/L	6720
2,5-Dibromotoluene (PID) Surrogate Recovery				110%
2,5-Dibromotoluene (FID) Surrogate Recovery				112%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C_9-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW-3
Lab ID:	123453
Date Collected:	06/04/02
Date Received:	06/05/02
Date Analyzed:	06/11/02
Dilution Factor:	1.0 / 10.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C_5-C_8 Aliphatics[1]	N/A	40	ug/L	970
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	150*	ug/L	619
Methyl tert-butyl ether	C_5-C_8 Aliph.	5	ug/L	ND
Benzene	C_5-C_8 Aliph.	5	ug/L	ND
Toluene	C_5-C_8 Aliph.	5	ug/L	42.0
Ethylbenzene	C_9-C_{12} Aliph.	5	ug/L	43.8
m&p-Xylenes	C_9-C_{12} Aliph.	5	ug/L	376
o-Xylene	C_9-C_{12} Aliph.	5	ug/L	201
Naphthalene	N/A	20	ug/L	21.9
C5-C8 Aliphatic Hydrocarbons[1,2]	N/A	40	ug/L	928
C_9-C_{12} Aliphatic Hydrocarbons[1,3]	N/A	150*	ug/L	ND
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	550*	ug/L	ND
2,5-Dibromotoluene (PID) Surrogate Recovery				103%
2,5-Dibromotoluene (FID) Surrogate Recovery				97%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration o$_9$-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

SAMPLE INFORMATION

Matrix	☒ Aqueous ☐ Soil ☐ Sediment ☐ Other		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☒ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☐ Received in air tight container	☐ Other
Temperature	☒ Received on ice ☐ Received at 4° C ☐ Other		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH
Method for Target Analytes: MADEP VPH
VPH Surrogate Standards
PID (2,5-Dibromotoluene)
FID (2,5-Dibromotoluene)

Client ID:	DMW-3A
Lab ID:	123454
Date Collected:	06/04/02
Date Received:	06/05/02
Date Analyzed:	06/11/02
Dilution Factor:	1.0 / 10.0*
Total solids (%):	N/A

Range/Target Analyte	Elut. Range	RL	Units	
Unadjusted C_5-C_8 Aliphatics[1]	N/A	400*	ug/L	1350
Unadjusted C_9-C_{12} Aliphatics[1]	N/A	150*	ug/L	2300
Methyl tert-butyl ether	C_5-C_8 Aliph.	5	ug/L	ND
Benzene	C_5-C_8 Aliph.	5	ug/L	5.60
Toluene	C_5-C_8 Aliph.	5	ug/L	32.2
Ethylbenzene	C_9-C_{12} Aliph.	5	ug/L	51.0
m&p-Xylenes	C_9-C_{12} Aliph.	5	ug/L	423
o-Xylene	C_9-C_{12} Aliph.	5	ug/L	204
Naphthalene	N/A	20	ug/L	35.0
C5-C8 Aliphatic Hydrocarbons[1,2]	N/A	400*	ug/L	1310
C9-C12 Aliphatic Hydrocarbons[1,3]	N/A	150*	ug/L	ND
C_9-C_{10} Aromatic Hydrocarbons[1]	C_9-C_{12} Aliph.	550*	ug/L	1770
2,5-Dibromotoluene (PID) Surrogate Recovery				104%
2,5-Dibromotoluene (FID) Surrogate Recovery				107%
Surrogate Acceptance Range				70-130%

[1]Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range
[2]C_5-C_8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range
[3]C_9-C_{12} Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration o$_9$-C_{10} Aromatic Hydrocarbons

CERTIFICATION

Were all QA/QC procedures REQUIRED by the VPH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☒ Yes ☐ No - Details attached
Were any significant modifications made to the VPH method, as specified in Sect 11.3.? ☒ No

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☐ Aqueous ☐ Soil o Sediment ☒ Other-Air		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☐ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☒ Received in air tight container-Summa Canister	☐ Other
Temperature	☐ Received on ice ☐ Received at 4° C ☐ Other		

APH ANALYTICAL RESULTS
Method for Ranges: MADEP APH 97-12 GC/MS
APH Surrogate Standards: 2,5-Dibromotoluene
1,2-DCE
Toluene-d8
BFB
Method for Target Analytes: EPA-TO14A

Client ID:	DG2-101
Lab ID:	123455
Date Collected:	06/04/02
Date Received:	06/05/02
Date Fractions Analyzed:	06/11/02
Date Targets Analyzed:	06/12/02
Ranges Dilution Factor:	1.0
Targets Dilution Factor:	90.0

Range/Target Analyte	Elut. Range	RL (ppbv)	RL (ug/m3)	Units		
Unadjusted C5-C8 Aliphatic Hydr	N/A		85.0	ug/m³	**271000**	
Unadjusted C9-C12 Aliphatic Hyd	N/A		90.0	ug/m³	**6270**	
Benzene	C5-C8 Aliph	81.00	258.30	ppbv/ug/m3	**900 / 2880**	
*1,3-Butadiene**	N/A	1800.0	4140.0	ppbv/ug/m3	ND	
Ethylbenzene	C5-C8 Aliph	48.60	210.6	ppbv/ug/m3	ND	
***Methyl-tert-butyl ether**	C5-C8 Aliph	900.0	3240.0	ppbv/ug/m3	**8100 / 29200**	
*2-Methylnaphthalene**	N/A	1800.0	10620	ppbv/ug/m3	ND	
*Naphthalene**	N/A	1800.0	9540	ppbv/ug/m3	ND	
Toluene	C5-C8 Aliph	85.50	322.2	ppbv/ug/m3	ND	
m-,p-Xylenes	C5-C8 Aliph	34.20	148.5	ppbv/ug/m3	**90.0 / 390**	
o-Xylene	C9-C12 Aliph.	41.40	180.00	ppbv/ug/m3	ND	
C5-C8 Aliphatic Hydrocarbons'	N/A		85.0	ug/m³	**239000**	
C9-C12 Aliphatic Hydrocarbons"	N/A		90.0	ug/m³	**6090**	
C9-C10 Aromatic Hydrocarbons	N/A		80.0	ug/m³	**181**	
2,5-Dibromotoluene Surrogate Recovery					99%	
1,2-DCE Surrogate Recovery					59%	
Toluene-d8 Surrogate % Recovery					102%	
BFB Surrogate % Recovery					98%	
Surrogate Acceptance Range					70-130%	

'C_5-C_8 Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that ran
"C_9-C_{12} Aliphatic HCs exclude concentrations of Target Analytes AND $_9$-C_{10} Aromatic Hydrocarbons eluting in that range
*Compounds quantitated by TICS

CERTIFICATION **"Matrix interference confirmed by re-run**

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☐ Yes ☒ No - Details attached *
Were any significant modifications made to the APH method?? ☐ No ☒ Yes - Details below

Aliphatic ranges quantitated by GC/MS Total Ion Chromatogram and all targets and Aromatic ranges were quantitated by GC/MS Selected Ion Measurements.

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

GeoLabs, Inc.
Environmental Laboratories

SAMPLE INFORMATION

Matrix	☐ Aqueous ☐ Soil o Sediment ☒ Other-Air		
Containers	☒ Satisfactory ☐ Broken ☐ Leaking		
Sample Preservative	Aqueous	☐ N/A ☐ pH ≤ 2 ☐ pH > 2 Comment:	
	Soil or Sediment	☐ N/A ☐ Samples NOT preserved in MeOH or air-tight containers	ml MeOH
		☐ Samples received in MeOH ☐ Covering soil ? ☐ Not	☐1:1±25%
		☒ Received in air tight container-Summa Canister	☐ Other
Temperature	☐ Received on ice ☐ Received at 4° C ☐ Other		

APH ANALYTICAL RESULTS
Method for Ranges: MADEP APH 97-12 GC/MS
APH Surrogate Standards: 2,5-Dibromotoluene
1,2-DCE
Toluene-d8
BFB
Method for Target Analytes: EPA-TO14A

Client ID:	DG1-102
Lab ID:	123456
Date Collected:	06/04/02
Date Received:	06/05/02
Date Fractions Analyzed:	06/11/02
Date Targets Analyzed:	06/12/02
Ranges Dilution Factor:	1.0
Targets Dilution Factor:	1.0

Range/Target Analyte	Elut. Range	RL (ppbv)	RL (ug/m3)	Units	
Unadjusted C_5-C_8 Aliphatic Hydr	N/A		85.0	ug/m³	**1630**
Unadjusted C_9-C_{12} Aliphatic Hyd	N/A		90.0	ug/m³	**1880**
Benzene	C5-C8 Aliph	0.90	2.87	ppbv/ug/m3	ND
*1,3-Butadiene**	N/A	20.0	46.0	ppbv/ug/m3	ND
Ethylbenzene	C5-C8 Aliph	0.54	2.34	ppbv/ug/m3	ND
*Methyl-tert-butyl ether**	C5-C8 Aliph	10.0	36.0	ppbv/ug/m3	ND
*2-Methylnaphthalene**	N/A	20.0	118	ppbv/ug/m3	ND
*Naphthalene**	N/A	20.0	106	ppbv/ug/m3	ND
Toluene	C5-C8 Aliph	0.95	3.58	ppbv/ug/m3	ND
m-,p-Xylenes	C5-C8 Aliph	0.38	1.65	ppbv/ug/m3	**0.75 / 3.25**
o-Xylene	C9-C12 Aliph.	0.46	2.00	ppbv/ug/m3	ND
C_5-C_8 Aliphatic Hydrocarbons'	N/A		85.0	ug/m³	**1630**
C_9-C_{12} Aliphatic Hydrocarbons"	N/A		90.0	ug/m³	**1880**
C_9-C_{10} Aromatic Hydrocarbons	N/A		80.0	ug/m³	ND
2,5-Dibromotoluene Surrogate Recovery					88%
1,2-DCE Surrogate Recovery					61%*
Toluene-d8 Surrogate % Recovery					98%
BFB Surrogate % Recovery					102%
Surrogate Acceptance Range					70-130%

'C_5-C_8 Aliphatic Hydrocarbons exclude concentrations of Target Analytes eluting in that ran
"C_9-C_{12} Aliphatic HCs exclude concentrations of Target Analytes AND $_9$-C_{10} Aromatic Hydrocarbons eluting in that range
*Compounds quantitated by TICS

CERTIFICATION ***Matrix interference confirmed by re-run**

Were all QA/QC procedures REQUIRED by the APH Method followed? ☒ Yes ☐ No - Details attached
Were all QA/QC performance /acceptance standards achieved? ☐ Yes ☒ No - Details attached *
Were any significant modifications made to the APH method?? ☐ No ☒ Yes - Details below

Aliphatic ranges quantitated by GC/MS Total Ion Chromatogram and all targets and Aromatic ranges were quantitated by GC/MS Selected Ion Measurements.

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

SIGNATURE: _____ POSITION: Lab Director

PRINTED NAME: Jim Chen DATE: 06/13/02

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

APPENDIX C
ACTIVITY AND USE LIMITATION

18/20

NOTICE OF ACTIVITY AND USE LIMITATION
M.G.L. c. 21E, §6 and 310 CMR 40.0000

Disposal Site Name: Speedy Lube, 633 North Main Street, Randolph

This Notice of Activity and Use Limitation ("Notice") is made as of this 14th day of June, 2002, by Speedy Lube, Inc., a Massachusetts corporation, together with their successors and assigns (collectively, "Owner").

WITNESSETH:

WHEREAS, Speedy Lube, Inc., a Massachusetts corporation, is the owner in fee simple of that certain parcel of land located in Randolph, Norfolk County, Massachusetts, with the buildings and improvements thereon ("Property");

WHEREAS, said parcel of land, which is more particularly bounded and described in Exhibit A, attached hereto and made a part hereof is subject to this Notice of Activity and Use Limitation. The deed for the Property is recorded with the Norfolk Registry of Deeds in Book 9310, Page 747. The Property is shown on a plan recorded at said Registry as No. 124-1993 in Plan Book 412 to which plan reference can be made for a more particular description.

WHEREAS, the entire Property is subject to this Notice of Activity and Use Limitation.

WHEREAS, the Property comprises a Disposal Site as the result of a release of petroleum. Exhibit B is a sketch plan showing the Property which is subject to this Notice of Activity and Use Limitation. Exhibit B is attached hereto and made a part hereof; and

WHEREAS, one or more response actions have been selected for the Disposal Site in accordance with G.L. c.21E ("Chapter 21E") and the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"). Said response actions are based upon (a) the restriction of human access to and contact with oil or hazardous material in soil and (b) the restriction of certain activities occurring in, on, through, over or under the Property. The basis for such restrictions is set forth in an Activity and Use Limitation Opinion ("AUL Opinion" dated June 14, 2002, (which is attached hereto as Exhibit C and made a part hereof);

NOW, THEREFORE, notice is hereby given that the activity and use limitations set forth in said AUL Opinion are as follows:

1. Permitted Activities and Uses Set Forth in the AUL Opinion. The AUL Opinion provides that a condition of No Significant Risk to health, safety, public welfare or the environment exists for any foreseeable period of time (pursuant to 310 CMR 40.0000) so long as any of the following activities and uses occur on the Property:

(i) Commercial or industrial uses and activities associated therewith, including, but not limited to, pedestrian or vehicular traffic, landscaping, and routine maintenance of landscaped areas, which do not cause or result in the disturbance or the relocation of contaminated soil located at 3 to 15 feet below surface grade;

(ii) Short-term (three months or less) underground utility or construction activities including, but not limited to, excavation (including emergency repair of underground utility lines), which are likely to disturb contaminated soil located at 3 to 15 feet below surface grade, provided that such activities are conducted in accordance with Obligations/Conditions (i) and (ii) in Section 3 of this Activity and Use Limitation Opinion ("Opinion"), the soil management procedures of the MCP cited at 310 CMR 40.0030, and all applicable worker health and safety practices pursuant to 310 CMR 40.0018;

(iii) Activities and uses which are not identified in this Opinion as being inconsistent with maintaining a condition of No Significant Risk; and

(iv) Such other activities and uses which, in the Opinion of an LSP, shall present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in this Paragraph.

2. Activities and Uses Inconsistent with the AUL Opinion. Activities and uses which are inconsistent with the objectives of this Notice, and which, if implemented at the Property, may result in a significant risk of harm to health, safety, public welfare or the environment or in a substantial hazard, are as follows:

(i) Use of the portion of the property as a residence, school (with the exception of adult education), daycare, nursery, recreational area (such as a park or athletic fields), or any other use at which a child's presence is likely;

(ii) Any activity including, but not limited to, excavation which is likely to disturb contaminated soil located at 3 to 15 feet below surface grade associated with underground utility or construction work, without prior development and implementation of a Soil Management Plan and a Health and Safety Plan in accordance with Obligations (I) and (ii) of Section 3 of the AUL;

(ii) Any activity which is likely to disturb contaminated soil located at 3 to 15 feet below surface grade for a period of time greater than three months, unless such activity is first evaluated by an LSP who renders an Opinion stating that such activity is consistent with maintaining a condition of No Significant Risk and that such activity is conducted in accordance with Obligations (i) and (ii) of Section 3 of this AUL; and

(iii) Relocation of contaminated soil located at 3 to 15 feet below surface grade, unless such relocation is first evaluated by an LSP who renders an Opinion stating that such relocation is consistent with maintaining a condition of No Significant Risk.

3. Obligations and Conditions Set Forth in the AUL Opinion. If applicable, obligations or conditions to be undertaken or maintained at the Property to maintain a condition of No Significant Risk as set forth in the AUL Opinion shall include the following:

(i) A Soil Management Plan must be prepared by a Licensed Site Professional (LSP) prior to the commencement of any activity which is likely to disturb contaminated soil located at 3 to 15 feet below surface grade. The Soil Management Plan should describe appropriate soil management characterization storage, transport and disposal procedures in accordance with the provisions of the MCP cited at 310 CMR 40.0030 et seq. Workers who may come in contact with the contaminated soil should be appropriately trained on the requirements of the Plan, and the Plan must remain available on-site throughout the course of the project;

(ii) A Health and Safety Plan must be prepared and implemented prior to the commencement of any activity which may result in the disturbance of contaminated soil located at 3 to 15 feet below surface grade. The Health and Safety Plan should be prepared by a Certified Industrial Hygienist or other qualified individual appropriately trained in worker health and safety procedures and requirements. The Plan should specify the type of personal protection, engineering controls, and environmental monitoring necessary to prevent worker and other potential receptor exposures to contaminated soil through ingestion, dermal contact, and inhalation. Workers who may come in contact with the contaminated soil should be appropriately trained on the requirements of the Plan, and the Plan must remain available on-site throughout the course of the project; and

(iii) The contaminated soil located at 3 to 15 feet below surface grade must remain at depth and may not be relocated, unless such activity is first evaluated by an LSP who renders an Opinion which states that such activity poses no greater risk of harm to health, safety, public welfare, or the environment and ensures that a condition of No Significant Risk is maintained.

4. Proposed Changes in Activities and Uses. Any proposed changes in activities and uses at the Property which may result in higher levels of exposure to oil or hazardous material than currently exist shall be evaluated by an LSP who shall render an Opinion, in accordance with 310 CMR 40.1080 et seq., as to whether the proposed changes will present a significant risk of harm to health, safety, public welfare or the environment. Any and all requirements set forth in the Opinion to meet the objective of this Notice shall be satisfied before any such activity or use is commenced.

5. Violation of a Response Action Outcome. The activities, uses or exposures upon which this Notice is based shall not change at any time to cause a significant risk of harm to health, safety, public welfare, or the environment or to create substantial hazards due to exposure to oil or hazardous material without the prior evaluation by an LSP in accordance with 310 CMR 40.1080 et seq., and without additional response actions, if necessary, to achieve or maintain a condition of No Significant Risk or to eliminate substantial hazards.

If the activities, uses, or exposures upon which this Notice is based change without the prior evaluation and additional response actions determined to be necessary by an LSP in accordance with 310 CMR 40.1080 et seq., the owner or operator of the Property subject to this Notice at the time that the activities, uses or exposures change, shall comply with the requirements set forth in 310 CMR 40.0020.

6. Incorporation Into Deeds, Mortgages, Leases, and Instruments of Transfer. This Notice shall be incorporated either in full or by reference into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer, whereby an interest in or a right to use the Property or a portion thereof is conveyed.

Owner hereby authorizes and consents to the filing and recordation or registration of this Notice, said Notice to become effective when executed under seal by the undersigned LSP, and recorded or registered with the appropriate Registry of Deeds and Land Registration Office.

WITNESS the execution hereof under seal this 14th day of June, 2002.

Eyad Badawi, Vice-President and Treasurer
Speedy Lube, Inc.

COMMONWEALTH OF MASSACHUSETTS

NORFOLK, SS June 14, 2002

Then personally appeared the above named Eyad Badawi and acknowledged the foregoing instrument to be their free act and deed before me,

Notary Public

My Commission Expires: My Commission Expires May 15, 2003

The undersigned LSP hereby certifies that he executed the aforesaid Activity and Use Limitation attached hereto as Exhibit C and made a part hereof and that in his Opinion this Notice of Activity and Use Limitation is consistent with the terms set forth in said Activity and Use Limitation Opinion.

James J. Decoulos, LSP

COMMONWEALTH OF MASSACHUSETTS

NORFOLK, SS June 14, 2002

Then personally appeared the above named James J. Decoulos and acknowledged the foregoing instrument to be his free act and deed before me,

Notary Public

My Commission Expires:

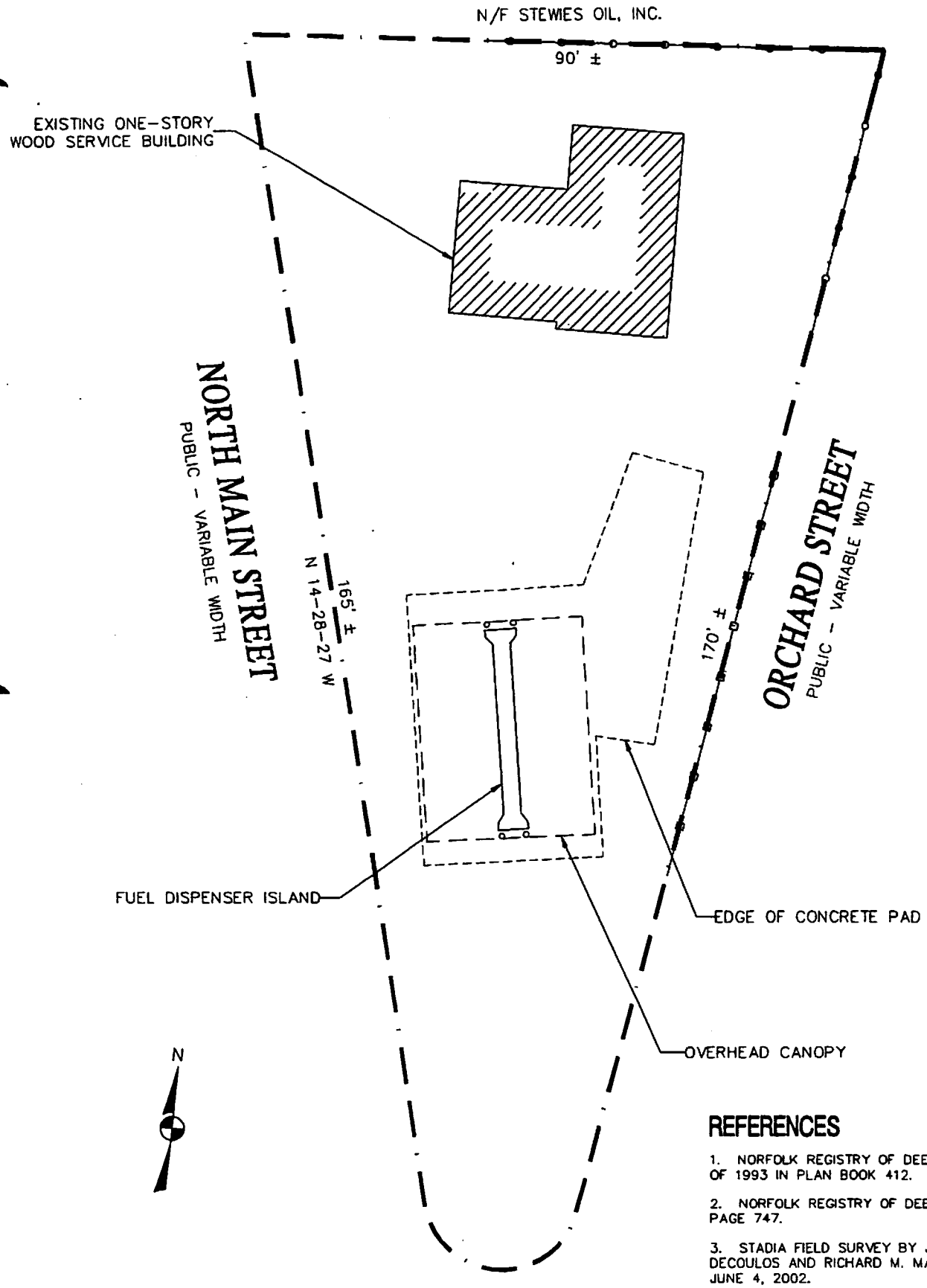
My Commission Expires
May 15, 2003

EXHIBIT A

(Description of Parcel of Land Containing Area Subject to AUL)

The land in Randolph, with the buildings thereon, bounded and described as set forth in a deed recorded at the Norfolk Registry of Deeds in Book 9310, Page 747.

Containing approximately 10,019 square feet of land as shown on plan entitled "Plan of Land showing existing conditions and proposed improvements, 633 North Main Street, Randolph, Massachusetts, Scale: 1"= 20', Date: 11-13-92, by Don Rosa, Professional Land Surveyor, 54 Liberty Street, Randolph, MA", recorded with Norfolk Registry of Deeds as No. 124-1993 in Plan Book 412.



REFERENCES

1. NORFOLK REGISTRY OF DEEDS PLAN NO. 124 OF 1993 IN PLAN BOOK 412.

2. NORFOLK REGISTRY OF DEEDS BOOK 9310, PAGE 747.

3. STADIA FIELD SURVEY BY JAMES J. DECOULOS AND RICHARD M. MANSFIELD, JUNE 4, 2002.

DECOULOS & COMPANY
248 ANDOVER ST, PEABODY, MA 01960
WWW.DECOULOS.COM
978 532 8154

EXHIBIT B
633 NORTH MAIN STREET
RANDOLPH, MASSACHUSETTS

DATE
JUNE 2002
SCALE
1" = 20'
FIGURE NO.
1

Massachusetts Department of Environmental Protection **BWSC-114**

Bureau of Waste Site Cleanup

ACTIVITY & USE LIMITATION (AUL) OPINION FORM

Pursuant to 310 CMR 40.1070 - 40.1084 (Subpart J)

Release Tracking Number: 3 - 15188

C. LSP OPINION: (continued)

LSP Name: James J. Decoulos LSP #: 9360 Stamp:

Telephone 978-532-8154 Ext.:

FAX: 978-359-6034

LSP Signature:

Date: 6/14/02

COMMONWEALTH OF MASSACHUSETTS
JAMES J. DECOULOS No. 9360
REGISTERED LICENSED SITE PROFESSIONAL

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY FIND THE DOCUMENT TO BE INCOMPLETE.