

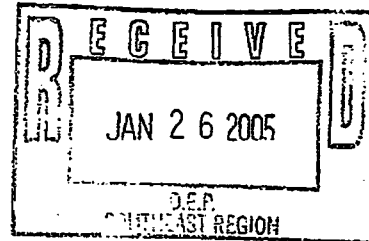
DECOULOS & COMPANY

ENVIRONMENTAL ENGINEERING & LAND PLANNING

VIA EMAIL AND USPS PRIORITY MAIL

Tuesday, January 18, 2005

Jonathan E. Hobill, Regional Engineer
DEP Bureau of Waste Site Cleanup
20 Riverside Drive
Lakeville, MA 02347



RE: *Immediate Response Action Plan Modification No. 4;*
131 Main Street, Carver (the Site); RTN 4-17582; NON-SE-03-3T-103

Dear Mr. Hobill:

On behalf of Eagle Gas, Inc., Decoulos & Company is pleased to submit this fourth proposed modification to the Immediate Response Action (IRA) Plan for the above referenced release.

An IRA Modification Plan was last submitted to the Department on January 7, 2005. It was our intention to conduct additional assessment actions during the 21-day review period for this submission. See 310 CMR 40.0421(1). The Department has subsequently requested that all proposed assessment actions be formally reviewed and approved.

HYDRAULIC CONDUCTIVITY ASSESSMENT

As described in the last IRA Mod Plan, a pump test of the interceptor trench was conducted on December 22, 2004. Due to safety constraints of measuring the groundwater response in the Main Street right-of-way, the direct observations did not provide enough data to establish an accurate permeability.

To better characterize the physical parameters in the sandy silt strata between 5 and 11 feet below grade, rising head slug tests are proposed at observation wells EOW-1 and EOW-2. Prior to conducting the tests, each well shall be vacuumed of debris with a 3500 gallon press vacuum tank truck operated by Alan Pierce of Lighthouse Environmental, Inc. of Reading, MA. A police detail will be provided to allow for the southbound lane of traffic to be closed and for the work to be safely performed.

Once each well is cleaned, Mini-Troll[®] pressure transducers shall be inserted in each well. The connecting cable for each transducer shall be secured to the inside casing of each well. The connections will allow water level data collections to be made with the well covers secured and the southbound lane of traffic to remain open.

The interceptor trench shall then be completely pumped of stored groundwater from the end of the existing two inch line located on the Eagle property (near utility pole #147). The 3500 gallon press vacuum tank truck shall pump the groundwater for one hour. The December 22nd test revealed that groundwater was completely evacuated from the trench using this procedure within 34 minutes.

Due to the uncontrolled conditions that exist at the Site, we propose to conduct the action on or about January 26, 2005. The wells shall be cleaned and the trench pumped during the middle of the day, and we shall return the following day (approximately 24 hours later) to collect the Mini-Troll[®] transducers and download the groundwater observation data.

The data shall then be used to establish the permeability of the strata impacted by the Light Non-Aqueous Phase Liquid (LNAPL) release. The analytical method for the determination shall follow the procedures described by Bouwer and Rice ^{1,2} as well as those described in American Society for Testing and Materials (ASTM) Methods D 4044³ and D 4104⁴.

The established permeability from this procedure and analysis shall then be used to adjust the design recharge rate for the proposed groundwater treatment operation. See Section 6.4, IRA Modification Plan, dated December 22, 2004.

Additionally, at the end of the one hour trench pump-out, a groundwater sample shall be collected at the end of the two inch recovery line for Total Petroleum Hydrocarbons (TPH) analysis. The sample shall be used to establish the adsorption capacity of the activated carbon drums and estimate a more accurate change out period for the drums.

The basic instrument for evaluating activated carbon use is the adsorption isotherm. The isotherm represents an empirical relationship between the amount of contaminant adsorbed per unit weight of carbon and its equilibrium water concentration.

This relationship can be expressed in the form:

$$X/M = KC^{1/n}$$

where:

X/M = Amount of contaminant adsorbed per unit weight of carbon

C = Concentration of contaminant in the water stream

K, n - Empirical constants particular to the contaminant

¹ Bouwer, H., and Rice, R.C., "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells", *Water Resources Research*, Vol. 12, No. 3, 1976, pp. 423 et seq.

² Bouwer, H., "The Bouwer-Rice Slug Test - An Update", *Ground Water*, Vol. 27, No. 3, 1989, pp. 304-309.

³ Standard Test Method for (Field Procedure) for Instantaneous Change in Head (Slug Tests) for Determining Hydraulic Properties of Aquifers, D 4044 - 91, American Society for Testing and Materials.

⁴ Standard Test Method (Analytical Procedure) for Determining Transmissivity of Nonleaky Confined Aquifers by Overdamped Well Response to Instantaneous Change in Head (Slug Test), D 4104 - 91, American Society for Testing and Materials.

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IRA Plan Modification No. 4
Eagle Gas, 131 Main Street, Carver; RTN 4-17582
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Once the adsorption capacity of the carbon units and volume of the treated groundwater is established, the breakthrough period for each 55 gallon drum shall be determined. A 50% safety factor shall be added to the breakthrough design and the change out period for drum replacement shall be established.

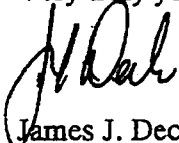
It is expected that the interceptor trench collection and treatment will draw greater petroleum concentrations during its operation. Consequently, the change out period shall be reestablished every month during operation through the collection of an updated TPH sample and a revised set of calculations.

LNAPL RELEASE CONTROL

Pursuant to 310 CMR 40.0421(2), Eagle proposes to collect LNAPL from wells ERW-1, ERW-2 and ERW-4 through the use of four-inch diameter Keck passive recovery canister (PRC) skimmers beginning on Thursday, January 20th. As described in the IRA Mod Plan No. 3, it is expected that LNAPL will need to be collected from each unit twice per week. The collection will occur through the use of a peristaltic pump located at the ground surface with 3/16 inch tubing from each cannister. Remediation waste shall be managed as previously described.

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: Francis J. Casey, Carver Board of Selectmen
Robert C. Tinkham, Jr., Carver Board of Health
Sarah G. Hewins, Carver Conservation Commission
William A. Halunen, Carver Department of Public Works
David Bennett, Bennett & O'Reilly, Inc.
Theodore L. Bosen, Esq.
Najib Badaoui, Eagle Gas, Inc.



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

4 - 17582

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: **RTE 58 - EAGLE GAS STATION**

2. Street Address: **131 MAIN ST**

3. City/Town: **CARVER**

4. ZIP Code: **02330-0000**

JAN 26 2005

☒ 5. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.

☒ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II

☐ 6. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):

☐ a. CERCLA ☐ b. HSWA Corrective Action ☐ c. Solid Waste Management

☐ d. RCRA State Program (21C Facilities)

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

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): **3/17/2003**

(mm/dd/yyyy)

☐ 2. Submit an Initial IRA Plan.

☒ 3. Submit a Modified IRA Plan of a previously submitted written IRA Plan.

☐ 4. Submit an Imminent Hazard Evaluation. (check one)

☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.

☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.

☐ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.

☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.

☐ 5. Submit a request to Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard.

☐ 6. Submit an IRA Status Report.

☐ 7. Submit an IRA Completion Statement.

☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN). When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN): ☐ - ☐

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

☐ 8. Submit a Revised IRA Completion Statement.

(All sections of this transmittal form must be filled out unless otherwise noted above).

CB



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Release Tracking Number

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C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

- ☐ a. Air ☐ b. Basement ☐ c. Critical Exposure Pathway ☒ d. Groundwater ☐ e. Residence
☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments
☒ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☒ p. Zone 2
☐ q. Others Specify: _____

2. Identify Oils and Hazardous Materials Released: (check all that apply)

- ☒ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals
☐ d. Others Specify: _____

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

- | | |
|--|---|
| <input type="checkbox"/> 1. Assessment and/or Monitoring Only | <input type="checkbox"/> 2. Temporary Covers or Caps |
| <input type="checkbox"/> 3. Deployment of Absorbent or Containment Materials | <input type="checkbox"/> 4. Temporary Water Supplies |
| <input type="checkbox"/> 5. Structure Venting System | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input checked="" type="checkbox"/> 7. Product or NAPL Recovery | <input type="checkbox"/> 8. Fencing and Sign Posting |
| <input checked="" type="checkbox"/> 9. Groundwater Treatment Systems | <input type="checkbox"/> 10. Soil Vapor Extraction |
| <input type="checkbox"/> 11. Bioremediation | <input type="checkbox"/> 12. Air Sparging |
| <input type="checkbox"/> 13. Excavation of Contaminated Soils | |

- ☐ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards _____
☐ ii. Off Site Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____ Town: _____ State: _____

ii.b. Receiving Facility: _____ Town: _____ State: _____

iii. Describe: _____

- ☐ b. Store ☐ i. On Site Estimated volume in cubic yards _____
☐ ii. Off Site Estimated volume in cubic yards _____

ii.a. Receiving Facility: _____ Town: _____ State: _____

ii.b. Receiving Facility: _____ Town: _____ State: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

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Release Tracking Number

4 - 17582

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ ii. Disposal Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☐ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☒ 16. Other Response Actions:

Describe: **HYDRAULIC CONDUCTIVITY ASSESSMENT**

☐ 17. Use of Innovative Technologies:

Describe: _____



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

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**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM**

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

4 - 17582

E. LSP SIGNATURE AND STAMP:

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 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that an Immediate Response Action Plan is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed 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(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an Imminent Hazard Evaluation is being submitted, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> if Section B of this form indicates that an Immediate Response Status Report is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being 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) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that an Immediate Response Action Completion Statement or a request to Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard is being submitted, 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) comply(ies) 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.

1. LSP #: 9360

2. First Name: JAMES J

3. Last Name: DECOULOS

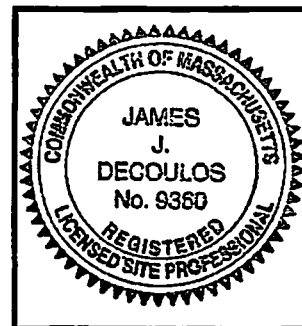
4. Telephone: (978) 532-8154

5. Ext.: 6. FAX:

7. Signature:

8. Date: 1/18/2005
(mm/dd/yyyy)

9. LSP Stamp:





Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

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F. PERSON UNDERTAKING IRA:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: **EAGLE GAS INC**
3. Contact First Name: **NAJIB** 4. Last Name: **BADAQVI**
5. Street: **131 MAIN ST** 6. Title: _____
7. City/Town: **CARVER** 8. State: **MA** 9. ZIP Code: **02330-0000**
10. Telephone: **(508) 866-9098** 11. Ext.: _____ 12. FAX: _____

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
- ☒ e. Other RP or PRP Specify: **PRP GENERIC OR NON-SPECIFIED**
- ☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- ☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- ☐ 4. Any Other Person Undertaking IRA Specify Relationship: _____

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.
- ☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)
- ☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (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.
- ☒ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.
- ☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105


**IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL
FORM** Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

4 - 17582

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, **NAJIB BADAQUI**, 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.

2. By: 
Signature

3. Title: **PRESIDENT**

4. For: **EAGLE GAS INC**
(Name of person or entity recorded in Section F)

5. Date: **1/18/2005**
(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY 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.

Date Stamp (DEP USE ONLY:)

