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*Electronic Submittal*

RELEASE ABATEMENT MEASURE (RAM) STATUS REPORT  
NO. 18 FORMER MANUFACTURED GAS PLANT (MGP) SITE

100 PARCEL B, 129 COMMERCIAL STREET

MALDEN, MASSACHUSETTS

RTN 3-0362 AND LINKED RTN 3-3757

TIER IB PERMIT 7378

*SL=U/A*

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by

Haley & Aldrich, Inc.  
East Hartford, Connecticut

DEP  
NORTHEAST REGIONAL OFFICE

for

National Grid  
Westborough, Massachusetts

File No. 06558-711  
April 2007

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7 April 2007  
File No. 06558-711

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APR 13 2007

DEP  
NORTHEAST REGIONAL OFFICE

Massachusetts Department of Environmental Protection  
Northeast Regional Office  
205B Lowell Street  
Wilmington, Massachusetts 01887

Attention: Site Management Branch

Subject: Release Abatement Measure (RAM) Status Report No. 18  
Former Manufactured Gas Plant (MGP) Site  
Parcel B, 129 Commercial Street  
Malden, Massachusetts  
RTN 3-0362 and Linked RTN 3-3757  
Tier IB Permit 7378

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Ladies and Gentlemen:

On behalf of Massachusetts Electric Company d/b/a National Grid (National Grid), Haley & Aldrich, Inc. is submitting this Release Abatement Measure (RAM) Status Report No. 18 for the above referenced site. The BWSC-106 Transmittal form and RAM Remedial Monitoring Report were submitted to the Massachusetts Department of Environmental Protection (DEP) electronically through the e-DEP filing system. Copies of the forms are included in Appendix A of this report. Work on the subject site is being conducted under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. This report was prepared in accordance with in 310 CMR 40.0445.

The RAM Status Report No. 18 presents findings during the reporting period 7 October 2006 through 7 April 2007 related to indoor air sampling and on-going operation and maintenance of the sub-slab venting system located at 129 Commercial Street, Malden, Massachusetts.

**BACKGROUND**

The subject site is located on Parcel B of the former Malden manufactured gas plant (MGP) site and is currently occupied by a bakery company located at 129 Commercial Street, Malden, Massachusetts. The site is bounded to the north by Charles Street, to the east by Commercial Street, to the south by Adams Street, and to the west by the MBTA Orange Line commuter railway as shown on Figure 1, "Project Locus."

Phase II field investigations associated with the former Malden MGP site identified elevated concentrations of volatile organic compounds (VOCs) and polynuclear aromatic hydrocarbons (PAHs) in soil, and elevated concentrations of VOCs, PAHs, and cyanide in groundwater beneath the 129 Commercial Street building. VOCs were also identified in indoor air at the facility. The presence of VOCs in indoor air did not constitute an imminent hazard for the workers in the building, and applicable occupational standards set by the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and

Health (NIOSH) were not exceeded. National Grid conducted response actions to reduce VOC concentrations to reduce potential long-term risks.

The original intent of the RAM was to mitigate the VOC migration into indoor air by applying epoxy sealants to selected floor areas inside the bakery building, as described in the 2 July 1998 RAM Plan. The RAM Plan also called for implementation of a second phase of work consisting of conducting a facility wide sealing program at identified migration pathway points if the first phase floor sealing activities were successful in reducing VOC concentrations in the packaging room. As described in RAM Status Report No. 1 dated 22 January 1999, since floor sealing efforts in the packaging room area of the facility to reduce VOC migration into the building were unsuccessful, the second phase was not implemented.

Haley & Aldrich evaluated alternative response actions to mitigate the VOC migration into indoor air, and submitted a RAM Plan modification to DEP dated 9 April 1999. During normal bakery operations, a negative air pressure is created inside the building, which may enhance soil vapor migration into the building. The RAM modification proposed installation of an active sub-slab venting system in the general area of the packaging room where the highest indoor VOC concentrations had been encountered in the past. The active sub-slab venting system was proposed to create a negative pressure gradient beneath the floor slab such that soil vapors would migrate to the sub-slab venting system rather than penetrating through the floor slab into indoor air. The active sub-slab venting was not proposed to remediate the source of contamination.

RAM Status Report No. 2, dated 21 July 1999, outlined the proposed active sub-slab venting system and summarized correspondence with DEP concerning the 9 April 1999 RAM Plan Modification. DEP issued a "Conditional Approval of Release Abatement Measure; Designation of Interim Deadline; M.G.L. 21E & 310 CMR 40.0000," letter dated 9 June 1999 which approved the RAM Plan modification with conditions.

As part of the DEP 9 June 1999 conditional approval, a new RAM Status submittal deadline was established to be within 120 days of the date of the letter, or by 7 October 1999. RAM Status Report No. 3, dated 7 October 1999, was submitted to DEP, and detailed the design and installation of the sub-slab venting system. The system was initially started on 21 October 1999. Details of the initial operation, system adjustments, and pilot test and long term operation plan were described in RAM Status Report No. 4, dated 7 April 2000. RAM Status Report No. 5, dated 6 October 2000 through RAM Status Report No. 17, dated 7 October 2006 detailed operation and maintenance of the sub-slab venting system and summarized indoor air sampling results and system monitoring data collected during the respective reporting periods. RAM Status Report No. 18 details indoor air sampling activities and on-going operation and maintenance of the sub-slab venting system, and summarizes monitoring data collected from 7 October 2006 through 7 April 2007.

Efforts on this project will continue to be coordinated and carried out by the following:

#### **Party of Interest**

National Grid  
25 Research Drive  
Westborough, Massachusetts 01582  
Contact: Michele V. Leone, Lead Senior Environmental Engineer  
Telephone Number (508) 389-4296

#### **Licensed Site Professional**

Richard P. Standish, LSP  
Licensed Site Professional No. 2242  
Haley & Aldrich, Inc.  
800 Connecticut Boulevard, Suite 100  
East Hartford, Connecticut 06108-7303  
Telephone Number (860) 290-3131

#### **STATUS OF RESPONSE ACTIONS**

##### **On-going System Operation**

Haley & Aldrich monitors the sub-slab venting system regularly as part of an ongoing operation and maintenance (O&M) schedule. Total VOC levels in influent and effluent vapor from the off-gas control device (sub-slab venting treatment unit) are measured during these visits with a photoionization detector (PID). In addition, influent and effluent vapor samples are collected and analyzed by Gas Chromatography (GC) on a monthly basis. The results are discussed below.

##### **Indoor Air Sampling**

Previously, indoor air sample pairs were collected during production and non-production hours (between September 2000 and July 2001) to evaluate the influence of the facility air handling system on indoor air VOC levels. The air handling system operated at a higher rate during production hours than non-production hours. Test results confirmed higher VOC levels during operating hours than non-operating hours. It is thought that the facility air handling system creates a negative pressure within the building when in operation. Therefore, sampling during production hours is thought to be more protective since the facility air handling system may create a negative pressure within the building, thereby facilitating soil vapor intrusion.

During this reporting period, indoor air samples were collected during production hours by Haley & Aldrich on 28 February 2007. Samples were collected at the same locations previously tested throughout the facility, as documented in RAM Status Report No. 17. Consistent with several previous sampling rounds, the detection of the non-target VOC ethanol was described in the analytical laboratory report narrative for several samples. As a result of the presence of ethanol, a natural by-product of the fermentation of yeast in bread dough, analytical method reporting limits were slightly elevated for Site #6, #7, #8, and #11.



Indoor air test results, both previous and new, are summarized on Table I in units of ug/m<sup>3</sup>. Laboratory data for this reporting period are located in Appendix B, along with indoor air test results summarized in units of parts per billion by volume (ppbV).

## **NEW SITE INFORMATION**

### **Treatment System Influent and Effluent Air Testing**

As indicated above, O&M visits have been conducted regularly throughout the reporting period. Influent and effluent readings are currently monitored with an HNU Systems PID equipped with an 11.7 eV lamp. System influent, mid-carbon (Effluent-1) and post-carbon (Effluent-2) VOC levels were below the detection level of the instrument (0.1 ppm). A graphical representation of influent PID measurements, both previous and new, is presented in Figure 3. A more detailed description of monitoring data is discussed later in this report.

As specified by DEP in their 9 June 1999 conditional approval letter, off-gas control device (sub-slab venting system treatment unit) influent and effluent vapor samples have been collected on a monthly basis and submitted for laboratory analysis. Samples are collected from the system influent port prior to treatment and at effluent ports on each drum of granular activated carbon. Samples are quantitatively tested for benzene, toluene, ethylbenzene, m&p xylene, and o-xylene, and styrene by GC-FID analysis at the Haley & Aldrich laboratory. Results of chemical analysis of sub-slab venting system vapor samples, both previous and new, are presented on Table II, and a graphical representation of the test results are shown on Figure 4.

VOCs were not detected in the influent, mid-carbon (Effluent-1), or post-carbon (Effluent-2) samples during this reporting period.

### **Indoor Air and Outdoor Air Results**

During the 28 February 2007 sampling event, low concentrations of benzene, toluene, ethylbenzene, m&p-xylenes, and o-xylene were detected in indoor air samples collected at sample locations Site #4 and Site #5. Similar concentrations of benzene, toluene, and m&p-xylenes were also detected in outdoor air sample location Site # 2. Styrene and naphthalene were not detected in the samples tested and the indoor air test results from 28 February 2007 did not exceed MADEP indoor air background levels for the compounds tested.

A summary of indoor air quality data, both previous and new, is provided on Table I. Laboratory data for this reporting period are located in Appendix B. Overall, the indoor air test results are consistent with past sampling events conducted during production hours at the facility.

## REMEDATION WASTE MANAGEMENT

No remediation waste was generated or disposed of during this reporting period. A total of 47 drums, or approximately 7,755 pounds of spent carbon, have been generated and removed from the site since start-up of the sub-slab ventilation system. Also during the reporting period, there was no accumulation of water within the sub-slab venting system.

## MONITORING DATA FROM OPERATION OF THE REMEDIAL SYSTEM

Vacuum and pressure, air velocity, PID readings, and vapor temperature are monitored on a regular basis. System data are presented in Table III.

### Vacuum and Discharge Pressure

Vacuum conditions are monitored with fixed vacuum gauges on the influent piping prior to the blower and on the knockout drum. A portable gauge is used to periodically measure vacuum at the individual extraction points (EP-1 through EP-5). Vacuum conditions at extraction points EP-1 through EP-5 ranged from 0.04 inch of water to 1.2 inches of water during this reporting period.

Vacuum at the blower was 10 inches of water and vacuum at the knockout drum ranged between 3 and 5 inches of water, and discharge pressure ranged between 44 and 50 inches of water during this period. These vacuum measurements are generally consistent with other recent vacuum data for this system.

### PID Screening and GC Analysis

VOC levels are screened with an HNu Systems 11.7 eV PID at 3 locations along the vapor stream: Influent (pre-carbon), Effluent-1 (mid-carbon) and Effluent-2 (post-carbon). PID readings of the influent were at background levels (0.0 ppm) as measured throughout the reporting period. A graphical representation of PID readings from system start-up to the present is shown on Figure 3. Effluent PID readings were also at background levels (0.0 ppm) throughout the reporting period.

Air samples were collected on a monthly basis in Tedlar bags and analyzed with a Gas Chromatograph (GC). Samples were collected from the influent, mid-carbon (Effluent-1), and post-carbon (Effluent-2) positions. VOCs were not detected in the influent, mid-carbon (Effluent-1), or post-carbon (Effluent-2) samples collected during this reporting period. A graphical representation of GC analytical results of the influent from system start-up to the present is shown on Figure 4.

### Influent/Effluent Air Velocity and VOC Removal

Air flow in and out of the system is measured with a Dwyer 401T Air Velocity Meter. During this reporting period, the influent flow rate ranged from 350 fpm (31 cfm) to 500 fpm (44 cfm) and the effluent flow rate ranged from 1350 fpm (120 cfm) to 1400 fpm (122 cfm). Based on flow rates and monthly GC analysis of air samples, it is estimated that nearly 900 lbs of VOCs have been removed from beneath the building since commencement of sub-slab ventilation in November 1999.

## REMEDIAL MONITORING REPORT

Consistent with DEP requirements, the BWSC-106 A/B Forms (Remedial Monitoring Report) were submitted electronically for this submittal. The form presents information on the sub-slab venting system performance during this reporting period.

The 9 June 1999 approval letter does not specify discharge limits in lieu of referring to the 100 pound/year discharge limits specified in DEP Policy #WSC-94-150. Using these criteria and maximum flow rates presented in Table III, a permissible concentration upper limit of 7.830 parts per million by volume (ppmV) as benzene has been calculated for this reporting period. Since target VOCs were not detected in influent, mid-train, and effluent samples tested during this reporting period, the discharge was determined to be within permissible limits.

Copies of the Remedial Monitoring Report BWSC-106 A/B Forms are attached in Appendix A.

## SIGNIFICANT NEW INFORMATION

A new AMETEK blower unit was initialized during the previous year. The AMETEK blower enhancement has been performing acceptably since its installation on 7 March 2006. National Grid is now in the process of making improvements to the system, which include integration of a hard-wired telemetry interface. Once installed, the telemetry system will notify Haley & Aldrich if there are non-conformances in blower system performance.

## FUTURE RESPONSE ACTIONS

Haley & Aldrich will continue to monitor the system monthly during the next reporting period, while the remote system is being initialized. Monitoring will also include monthly GC testing of system influent and effluent as previously conducted.

Indoor air quality data from recent sampling events have shown that the system is effective at consistently maintaining VOC concentrations below residential background values recommended by DEP. In accordance with the RAM Conditional Approval letter dated 27 July 1999, the new remote monitoring system will allow the LSP to continually evaluate the system's effectiveness and ensure that any adverse changes or shutdown be corrected in a timely manner.

Although biennial indoor air sampling was required in Section III of the RAM approval letter dated 9 June 1999, indoor air sampling is being conducted on an annual basis during the "worst case" winter months, such as January or February, when the building would be more likely to be closed to ambient air. As stated above, indoor air and system operating data demonstrate that the system is efficient and effective, thereby allowing sampling events on an annual basis. RAM Status Reports will continue to be provided on a six month basis.

System enhancements and alternative response actions were evaluated as part of the Phase III Remedial Action Plan to develop a long-term plan to address indoor air quality at the facility. The Phase III was submitted to DEP in June 2003 and a Remedial Action Alternative (RAA)

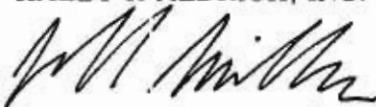
was recommended. The proposed RAA included an air sparging and/or SVE system installed via Horizontal Directional Drilling (HDD).

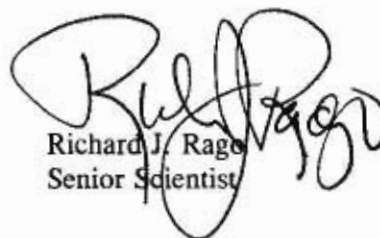
The recent rounds of indoor air sampling data indicate that VOCs are generally not detected or are detected below published residential background values recommended by DEP. These data also indicate that the current system appears to be functioning properly by depressurizing the sub-slab environment and creating the conditions necessary to prevent soil vapor intrusion. Therefore, implementation of an HDD-installed air sparging/SVE system Remedial Action Alternative does not appear to be a necessary mitigation measure at this time.

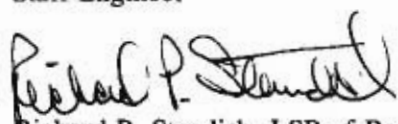
A partial Class C RAO was submitted for the former Malden MGP site in February 2004. National Grid will continue to evaluate the performance of the current sub-slab depressurization system. If it is determined that significant improvements or enhancements are necessary or conditions are appropriate, it is anticipated that the installation of a Remedial Action Alternative system will be conducted as part of the Post-RAO response actions conducted at 129 Commercial Street, and implemented via a modification to the RTN 3-0362/RTN 3-3757 RAM for 129 Commercial Street.

Please do not hesitate to call the undersigned or Michele Leone of National Grid at 508-389-4296 if you have any questions or comments.

Sincerely yours,  
HALEY & ALDRICH, INC.

  
for Todd R. Butler  
Staff Engineer

  
Richard J. Rago  
Senior Scientist

  
Richard P. Standish, LSP-of-Record  
Senior Vice President

Enclosures:

Table I	Summary of Indoor Air Quality Data
Table II	Chemical Analysis of Sub-Slab Venting System Vapor Samples
Table III	Sub-Slab Venting System Monitoring Data
Figure 1	Project Locus
Figure 2	Extraction Well Point and Indoor Air Sample Locations
Figure 3	PID Measurements of Sub-Slab Vapor Influent
Figure 4	GC Analysis of Sub-Slab Vapor Influent
Appendix A	Copy of Form BWSC-106 and RAM Remedial Monitoring Report
Appendix B	Indoor Air Quality Analytical Data

c: National Grid; Attn: Michele V. Leone  
KeySpan Energy Delivery of New England; Attn: Richard J. Schmitz

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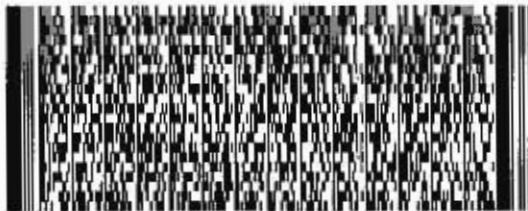


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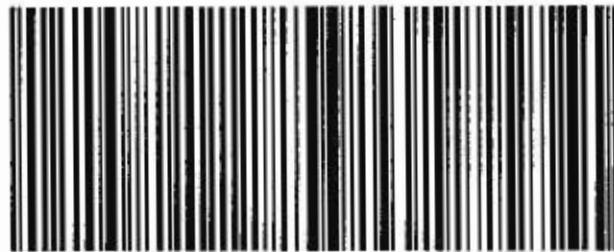
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TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
28-Feb-07	Benzene	21	--	--	2.7	--	1.9	2.6	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	Ethylbenzene	9.62	--	--	ND(1.7)	--	1.8	1.6	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	m,p-xylenes	40	--	--	3.5	--	6.7	4.6	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	Naphthalene	5	--	--	ND(1.7)	--	ND(1.4)	ND(1.2)	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	o-xylenes	10	--	--	ND(1.7)	--	1.5	1.5	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	Styrene	2.79	--	--	ND(1.7)	--	ND(1.4)	ND(1.2)	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
	Toluene	28.65	--	--	5.4	--	4.2	5.7	ND(9.1)	ND(28)	ND(53)	--	--	ND(53)
19-Apr-06	Benzene	21	--	--	ND(1.5)	--	ND(1)	ND(1.2)	ND(24)	ND(20)	ND(1.7)	--	--	--
	Ethylbenzene	9.62	--	--	ND(1.5)	--	1.3	1.5	ND(24)	ND(20)	ND(1.7)	--	--	--
	m,p-xylenes	40	--	--	ND(3)	--	3.8	4.1	ND(48)	ND(41)	ND(3.4)	--	--	--
	Naphthalene	5	--	--	ND(1.5)	--	ND(1)	ND(1.2)	ND(24)	ND(20)	ND(1.7)	--	--	--
	o-xylenes	10	--	--	ND(1.5)	--	ND(1)	ND(1.2)	ND(24)	ND(20)	ND(1.7)	--	--	--
	Styrene	2.79	--	--	ND(1.5)	--	ND(1)	ND(1.2)	ND(24)	ND(20)	ND(1.7)	--	--	--
	Toluene	28.65	--	--	3.6	--	5.2	4.2	ND(24)	ND(20)	2.5	--	--	--
19-Jan-06	Benzene	21	--	--	ND(1.6)	--	ND(2)	ND(1.4)	ND(1.5)	ND(2.5)	ND(1.8)	--	--	ND(1.7)
	Ethylbenzene	9.62	--	--	ND(1.6)	--	ND(2)	ND(1.4)	ND(1.5)	ND(2.5)	ND(1.8)	--	--	ND(1.7)
	m,p-xylenes	40	--	--	ND(1.6)	--	2.6	2.2	2.8	3.4	2.1	--	--	2.7
	Naphthalene	5	--	--	ND(1.6)	--	ND(2)	ND(1.4)	ND(1.5)	ND(2.5)	ND(1.8)	--	--	ND(1.7)
	o-xylenes	10	--	--	ND(1.6)	--	ND(2)	ND(1.4)	ND(1.5)	ND(2.5)	ND(1.8)	--	--	ND(1.7)
	Styrene	2.79	--	--	ND(1.6)	--	ND(2)	ND(1.4)	ND(1.5)	ND(2.5)	ND(1.8)	--	--	ND(1.7)
	Toluene	28.65	--	--	2.4	--	6.4	4.2	13	5	3.7	--	--	4

TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
20-Oct-05	Benzene	21	--	--	ND(1.6)	--	ND(1.5)	ND(1.6)	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	Ethylbenzene	9.62	--	--	ND(1.6)	--	ND(1.5)	ND(1.6)	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	m-&p-xylenes	40	--	--	1.6	--	1.8	1.9	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	Naphthalene	5	--	--	ND(1.6)	--	ND(1.5)	ND(1.6)	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	o-xylenes	10	--	--	ND(1.6)	--	ND(1.5)	ND(1.6)	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	Styrene	2.79	--	--	ND(1.6)	--	ND(1.5)	ND(1.6)	ND(5.4)	ND(5.9)	ND(5.9)	--	--	ND(6)
	Toluene	28.65	--	--	3.9	--	3.2	3.6	9	ND(5.9)	ND(5.9)	--	--	ND(6)
03-Aug-05	Benzene	21	--	--	ND(1.8)	--	ND(1.4)	ND(3.6)	ND(10)	ND(13)	--	--	--	ND(11)
	Ethylbenzene	9.62	--	--	ND(1.8)	--	1.7	ND(3.6)	ND(10)	ND(13)	--	--	--	ND(11)
	m-&p-xylenes	40	--	--	2.8	--	5	5.8	ND(10)	ND(13)	--	--	--	ND(11)
	Naphthalene	5	--	--	ND(1.8)	--	ND(1.4)	ND(3.6)	ND(10)	ND(13)	--	--	--	ND(11)
	o-xylenes	10	--	--	ND(1.8)	--	ND(1.4)	ND(3.6)	ND(10)	ND(13)	--	--	--	ND(11)
	Styrene	2.79	--	--	ND(1.8)	--	ND(1.4)	ND(3.6)	ND(10)	ND(13)	--	--	--	ND(11)
	Toluene	28.65	--	--	4.4	--	7.8	7.6	11	ND(13)	--	--	--	ND(11)
27-Apr-05	Benzene	21	--	--	ND(1.5)	--	ND(1.5)	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	Ethylbenzene	9.62	--	--	ND(1.5)	--	ND(1.5)	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	m-&p-xylenes	40	--	--	ND(1.5)	--	1.7	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	Naphthalene	5	--	--	ND(1.5)	--	ND(1.5)	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	o-xylenes	10	--	--	ND(1.5)	--	ND(1.5)	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	Styrene	2.79	--	--	ND(1.5)	--	ND(1.5)	ND(2)	ND(14)	ND(13)	ND(31)	--	--	ND(42)
	Toluene	28.65	--	--	2.9	--	4.7	7.6	ND(14)	ND(13)	ND(31)	--	--	ND(42)

TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
13-Jan-05	Benzene	21	--	--	3.8	--	2.6	2.8	2.8	2.8	3.5	--	--	3.4
	Ethylbenzene	9.62	--	--	2.8	--	2.7	3.5	1.5	2.3	2.4	--	--	2.6
	m-&p-xylenes	40	--	--	8.2	--	8	11	3.6	6	6.4	--	--	6.9
	Naphthalene	5	--	--	ND(1.4)	--	ND(1.3)	ND(1.5)	ND(1.2)	ND(1.2)	ND(1.4)	--	--	ND(1.8)
	o-xylenes	10	--	--	2.8	--	2.2	2.6	1.3	1.7	2.1	--	--	2.1
	Styrene	2.79	--	--	ND(1.4)	--	ND(1.3)	ND(1.5)	ND(1.2)	ND(1.2)	1.5	--	--	ND(1.8)
	Toluene	28.65	--	--	18	--	16	16	15	10	12	--	--	13
26-Oct-04	Benzene	21	--	--	2.2	--	ND(1.7)	ND(1.5)	ND(1.8)	1.7	ND(1.5)	--	--	1.9
	Ethylbenzene	9.62	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	ND(1.6)
	m-&p-xylenes	40	--	--	3.6	--	3.2	4.4	3.1	4	2.9	--	--	3.5
	Naphthalene	5	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	ND(1.6)
	o-xylenes	10	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	ND(1.6)
	Styrene	2.79	--	--	ND(1.4)	--	ND(1.7)	ND(1.5)	ND(1.8)	ND(1.6)	ND(1.5)	--	--	ND(1.6)
	Toluene	28.65	--	--	6.8	--	6.7	9	13	6.9	5.1	--	--	6.6
06-Aug-04	Benzene	21	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	Ethylbenzene	9.62	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	m-&p-xylenes	40	--	--	2.9	--	3.5	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	Naphthalene	5	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	o-xylenes	10	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	Styrene	2.79	--	--	ND(1.8)	--	ND(3.5)	ND(3.4)	ND(3.3)	ND(3.4)	ND(3.5)	--	ND(3.5)	--
	Toluene	28.65	--	--	5.1	--	9	7.5	ND(3.3)	ND(3.4)	3.6	--	ND(3.5)	--



TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Sample Results (Results listed in ug/m <sup>3</sup> )									
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11		
06-May-04	Benzene	21	--	--	ND(1.5)	--	ND(1.9)	1.7	ND(1.9)	ND(1.8)	ND(2.1)	--	ND(1.9)	--		
	Ethylbenzene	9.62	--	--	ND(1.5)	--	ND(1.9)	1.7	ND(1.9)	2	ND(2.1)	--	ND(1.9)	--		
	m-&p-xylenes	40	--	--	2.5	--	3.5	4.2	4	7.6	5.4	--	6.4	--		
	Naphthalene	5	--	--	ND(1.5)	--	ND(1.9)	ND(1.6)	ND(1.9)	ND(1.8)	ND(2.1)	--	ND(1.9)	--		
	o-xylenes	10	--	--	ND(1.5)	--	ND(1.9)	1.6	ND(1.9)	3	2.2	--	2.6	--		
	Styrene	2.79	--	--	ND(1.5)	--	ND(1.9)	ND(1.6)	ND(1.9)	ND(1.8)	ND(2.1)	--	2.8	--		
12-Feb-04	Toluene	28.65	--	--	85	--	33	72	18	13	8.7	--	11	--		
	Benzene	21	--	--	20.8	--	ND(1.7)	ND(1.7)	ND(8.6)	ND(12.8)	ND(18.5)	--	ND(20.1)	--		
	Ethylbenzene	9.62	--	--	16.9	--	ND(1.6)	ND(1.7)	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
	m-&p-xylenes	40	--	--	52.1	--	2	3	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
	Naphthalene	5	--	--	2	--	ND(1.7)	ND(1.7)	ND(8.9)	ND(13.1)	ND(18.3)	--	ND(19.9)	--		
	o-xylenes	10	--	--	18.7	--	ND(1.6)	ND(1.7)	ND(8.7)	ND(13)	ND(18.7)	--	ND(20)	--		
30-Oct-03	Styrene	2.79	--	--	2.1	--	ND(1.7)	ND(1.7)	ND(8.5)	ND(12.8)	ND(18.7)	--	ND(20)	--		
	Toluene	28.65	--	--	71.6	--	4.5	5.3	56.5	ND(12.8)	ND(18.5)	--	ND(20)	--		
	Benzene	21	--	--	1.9	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	ND(3.8)	--		
	Ethylbenzene	9.62	--	--	ND(1.6)	--	ND(1.7)	2.4	--	ND(1.9)	ND(3.5)	--	ND(3.7)	--		
	m-&p-xylenes	40	--	--	3	--	5.2	7.8	--	5.2	ND(3.5)	--	ND(3.7)	--		
	Naphthalene	5	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	ND(3.7)	--		
	o-xylenes	10	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.8)	ND(3.5)	--	7.4	--		
	Styrene	2.79	--	--	ND(1.6)	--	ND(1.7)	ND(1.5)	--	ND(1.9)	ND(3.4)	--	ND(3.7)	--		
	Toluene	28.65	--	--	6	--	27.1	23	--	23	13.2	--	10.2	--		

TABLE I

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE,  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
23-Jul-03	Benzene	21	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.5)	ND(3.8)	ND(2.5)	--	ND(3.8)	--
	Ethylbenzene	9.62	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(3.9)	ND(2.5)	--	ND(3.8)	--
	m-&p-xylenes	40	ND(1.9)	--	--	--	2.3	2.6	ND(3.6)	ND(3.9)	2.5	--	5.6	--
	Naphthalene	5	ND(1.8)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(4)	ND(2.5)	--	ND(3.8)	--
	o-xylenes	10	ND(1.9)	--	--	--	ND(1.8)	ND(1.6)	ND(3.6)	ND(3.9)	ND(2.5)	--	ND(3.8)	--
	Styrene	2.79	ND(1.9)	--	--	--	ND(1.8)	ND(1.7)	ND(3.6)	ND(4)	ND(2.5)	--	28.5	--
	Toluene	28.65	23.7	--	--	--	52.7	64	56.5	27.9	35.8	--	35.4	--
25-Apr-03	Benzene	21	--	--	ND(1.9)	--	ND(1.8)	ND(4.2)	ND(95.8)	ND(38.3)	ND(38.3)	--	ND(108.6)	--
	Ethylbenzene	9.62	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	m-&p-xylenes	40	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	Naphthalene	5	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(94.3)	ND(39.3)	ND(39.8)	--	ND(104.8)	--
	o-xylenes	10	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(95.5)	ND(39.1)	ND(39.5)	--	ND(108.5)	--
	Styrene	2.79	--	--	ND(1.9)	--	ND(1.8)	ND(4)	ND(93.7)	ND(39.2)	ND(39.6)	--	ND(106.4)	--
	Toluene	28.65	--	--	4.1	--	23.7	41.4	ND(94.2)	ND(37.7)	ND(41.4)	--	ND(105.5)	--
24-Jan-03	Benzene	21	--	--	1.9	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.8)	--
	Ethylbenzene	9.62	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.7)	--
	m-&p-xylenes	40	--	--	2.5	--	ND(1.5)	1.6	2.3	ND(2.2)	ND(1.8)	--	2.5	--
	Naphthalene	5	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(1.7)	--
	o-xylenes	10	--	--	1.5	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	ND(3.9)	--
	Styrene	2.79	--	--	ND(1.5)	--	ND(1.5)	ND(1.3)	ND(1.6)	ND(2.2)	ND(1.8)	--	4.3	--
	Toluene	28.65	--	--	4.1	--	2.4	2.9	2.4	2.3	ND(1.8)	--	2	--

TABLE 1

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
08-Oct-02	Benzene	21	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	1.9	--
	Ethylbenzene	9.62	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	3.6	--
	m-&p-xylenes	40	--	--	1.6	--	2.5	--	2.1	ND(2)	ND(2)	--	6.1	--
	Naphthalene	5	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	ND(1.7)	--
	o-xylenes	10	--	--	ND(2.3)	--	ND(1.2)	--	ND(2.1)	ND(2)	ND(2)	--	2.5	--
	Styrene	2.79	--	--	ND(2.3)	--	ND(1.1)	--	ND(2.1)	ND(2)	ND(2)	--	23.4	--
	Toluene	28.65	--	--	4.5	--	24.5	--	45.2	8.7	6.8	--	9.4	--
25-Jun-02	Benzene	21	--	--	--	--	1.4	ND(1)	6.1	5.7	3.1	--	5.4	--
	Ethylbenzene	9.62	--	--	--	--	3.1	2.5	ND(1)	ND(1)	ND(2)	--	3.1	--
	m-&p-xylenes	40	--	--	--	--	8.7	6.5	2.6	3	3	--	5.6	--
	Naphthalene	5	--	--	--	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	--	ND(1)	--
	o-xylenes	10	--	--	--	--	2.2	ND(1)	ND(1)	ND(1)	ND(2)	--	2.2	--
	Styrene	2.79	--	--	--	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	--	20	--
	Toluene	28.65	--	--	--	--	34.7	49	41.4	18.8	8.7	--	8.3	--
10-Apr-02	Benzene	21	--	--	ND(1)	--	ND(1)	ND(1)	ND(20.1)	4.5	ND(20.1)	--	ND(20.1)	--
	Ethylbenzene	9.62	--	--	ND(1)	--	ND(1)	1.3	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	m-&p-xylenes	40	--	--	2.3	--	2.4	4.3	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	ND(19.9)	ND(2)	ND(19.9)	--	ND(19.9)	--
	o-xylenes	10	--	--	ND(1)	--	ND(1)	ND(1)	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	ND(20)	ND(2)	ND(20)	--	ND(20)	--
	Toluene	28.65	--	--	4.1	--	19.2	14.3	ND(20)	11.3	ND(20)	--	ND(20)	--

TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
10-Jan-02	Benzene	21	--	--	--	--	ND(1)	ND(2)	38.3	44.7	47.9	--	31.9	--
	Ethylbenzene	9.62	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	m- & p-xylenes	40	--	--	--	--	4.3	4.6	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	Naphthalene	5	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.9)	--	ND(7.9)	--
	o-xylenes	10	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(7.8)	--	ND(7.8)	--
	Styrene	2.79	--	--	--	--	ND(1)	ND(2)	ND(4)	ND(4)	ND(8.1)	--	8.9	--
	Toluene	28.65	--	--	--	--	19.6	19.2	37.7	13.2	10.5	--	10.9	--
11-Oct-01	Benzene	21	ND(1)	--	--	--	ND(1)	ND(2)	10.9	11.5	12.5	--	7.7	--
	Ethylbenzene	9.62	ND(1)	--	--	--	1.9	ND(2)	ND(1)	ND(1)	ND(2)	--	3.2	--
	m- & p-xylenes	40	ND(1)	--	--	--	5.6	3.5	2.8	2.5	3	--	5.2	--
	Naphthalene	5	ND(1)	--	--	--	ND(1)	ND(2)	ND(1)	ND(1)	ND(2)	--	ND(1)	--
	o-xylenes	10	ND(1)	--	--	--	2	ND(2)	ND(1)	ND(1)	ND(2)	--	2.2	--
	Styrene	2.79	ND(1)	--	--	--	ND(1)	ND(2)	ND(1)	ND(1)	ND(2)	--	15.8	--
	Toluene	28.65	4.1	--	--	--	20.7	17.3	31.3	10.9	7.9	--	8.3	--
01-Jul-01	Benzene	21	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	Ethylbenzene	9.62	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	m- & p-xylenes	40	--	--	ND(2)	--	ND(2)	ND(2)	2	2.2	ND(2)	--	--	--
	Naphthalene	5	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	1.7	ND(2)	--	--	--
	o-xylenes	10	--	--	ND(2)	--	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	--	--	--
	Styrene	2.79	--	--	ND(2)	--	ND(2)	ND(2)	6.4	2.8	3.5	--	--	--
	Toluene	28.65	--	--	4.5	--	6.4	109.2	8.3	9.4	9.4	--	--	--



TABLE 1

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Sample Results (Results listed in ug/m <sup>3</sup> )							Site 8	Site 9	Site 10	Site 11
29-Jun-01	Benzene	21	--	--	ND(1)	--	2.2	6.7	31.6	35.1	35.1	--	30.7	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	6.5	3.7	ND(1)	ND(1)	ND(1)	--	10.9	--	--	--	--
	m-&p-xylenes	40	--	--	3.4	--	23	12.2	3.3	4.3	3.3	--	13.5	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	5.8	ND(1)	ND(1)	2.5	3.4	--	41.9	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	6.9	3.7	ND(1)	ND(1)	ND(1)	--	6.1	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	2.7	ND(1)	1.7	--	25.5	--	--	--	--
	Toluene	28.65	--	--	7.2	--	16.6	67.8	52.7	20.7	9.4	--	16.6	--	--	--	--
18-Mar-01	Benzene	21	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	16.3	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	ND(1)	ND(1)	ND(1)	ND(2)	ND(1)	--	5.2	--	--	--	--
	m-&p-xylenes	40	--	--	ND(1)	--	ND(1)	ND(1)	3.1	3.2	4.1	--	13	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	ND(2.5)	ND(2)	ND(1)	--	ND(1)	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	4.8	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	ND(2)	ND(2)	ND(1)	--	14.5	--	--	--	--
	Toluene	28.65	--	--	ND(1)	--	4.1	4.5	15.4	25.6	64	--	35.8	--	--	--	--
16-Mar-01	Benzene	21	--	--	4.2	--	63.9	ND(1)	24.3	29.7	41.5	--	26.2	--	--	--	--
	Ethylbenzene	9.62	--	--	9.1	--	269.1	2.8	ND(1)	1.7	1.8	--	4.2	--	--	--	--
	m-&p-xylenes	40	--	--	15.6	--	208.3	10	5.2	5.2	5.6	--	10.9	--	--	--	--
	Naphthalene	5	--	--	23.1	--	256.8	ND(1)	ND(1)	3.1	2.7	--	ND(1)	--	--	--	--
	o-xylenes	10	--	--	7.8	--	86.8	2.4	2.3	ND(1)	2.7	--	6.9	--	--	--	--
	Styrene	2.79	--	--	1.7	--	37	ND(1)	ND(1)	ND(1)	1.3	--	12.8	--	--	--	--
	Toluene	28.65	--	--	24.5	--	226	21.5	64	23.4	97.9	--	34.3	--	--	--	--

TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
03-Dec-00	Benzene	21	--	--	2.4	--	1.3	TR(1.3)	2.5	2.2	TR(1.9)	--	11	--
	Ethylbenzene	9.62	--	--	1.1	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	3.9	--
	m-&p-xylenes	40	--	--	3.2	--	1.5	TR(1.6)	2.3	2	2.1	--	6.6	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(2)	1.2	ND(2)	ND(2)	--	TR(1.6)	--
	o-xylenes	10	--	--	1.3	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	2.7	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(2)	ND(1)	ND(2)	ND(2)	--	30	--
	Toluene	28.65	--	--	6.3	--	5	5.6	5.2	5.7	5.3	--	6.4	--
01-Dec-00	Benzene	21	--	--	3.2	--	1.6	1.9	13	16	14	--	23	--
	Ethylbenzene	9.62	--	--	1.7	--	ND(1)	TR(0.99)	TR(1.5)	TR(1.4)	ND(1)	--	3.8	--
	m-&p-xylenes	40	--	--	5.2	--	2.3	2.9	3.9	3.9	2.3	--	7.3	--
	Naphthalene	5	--	--	ND(1)	--	ND(1)	ND(1)	TR(1.3)	2.5	ND(1)	--	2.1	--
	o-xylenes	10	--	--	1.9	--	ND(1)	1	TR(1.2)	TR(1.2)	ND(1)	--	2.8	--
	Styrene	2.79	--	--	ND(1)	--	ND(1)	ND(1)	TR(1.5)	TR(1.2)	ND(1)	--	25	--
	Toluene	28.65	--	--	13	--	22	14	16	12	21	--	9.6	--
22-Oct-00	Benzene	21	--	--	1.4	--	--	--	1.7	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	1.4	--	--	--	--	--
	m-&p-xylenes	40	--	--	2.5	--	--	--	5.2	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	2	--	--	--	--	--
	o-xylenes	10	--	--	TR(0.9)	--	--	--	1.9	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	3.3	--	--	--	--	--
	Toluene	28.65	--	--	3.7	--	--	--	7.4	--	--	--	--	--

**TABLE 1**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
20-Oct-00	Benzene	21	--	--	2.8	--	--	--	4.5	--	--	--	--	--
	Ethylbenzene	9.62	--	--	1.3	--	--	--	2	--	--	--	--	--
	m- <i>p</i> -xylenes	40	--	--	4.3	--	--	--	6.1	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	11.1	--	--	--	--	--
	o-xylenes	10	--	--	1.6	--	--	--	2.2	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	2.3	--	--	--	--	--
	Toluene	28.65	--	--	7	--	--	--	22.6	--	--	--	--	--
01-Oct-00	Benzene	21	--	--	1.2	--	--	--	1.6	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	1.1	--	--	--	--	--
	m- <i>p</i> -xylenes	40	--	--	1.9	--	--	--	3.2	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	ND(1)	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	--	--	1.1	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	1.8	--	--	--	--	--
	Toluene	28.65	--	--	6.7	--	--	--	11.9	--	--	--	--	--
29-Sep-00	Benzene	21	--	--	1.7	--	--	--	24.8	--	--	--	--	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	--	2.3	--	--	--	--	--
	m- <i>p</i> -xylenes	40	--	--	2.4	--	--	--	6.5	--	--	--	--	--
	Naphthalene	5	--	--	ND(1)	--	--	--	1.6	--	--	--	--	--
	o-xylenes	10	--	--	ND(1)	--	--	--	1.9	--	--	--	--	--
	Styrene	2.79	--	--	ND(1)	--	--	--	1.7	--	--	--	--	--
	Toluene	28.65	--	--	8.1	--	--	--	17.4	--	--	--	--	--

TABLE 1

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Sample Results (Results listed in ug/m <sup>3</sup> )						Site 8	Site 9	Site 10	Site 11
19-Jul-00	Benzene	21	--	--	3.2	--	--	2.4	6.1	87.1	93.5	31.6	--	--	64.5	--
	Ethylbenzene	9.62	--	--	2	--	--	TR(1.5)	TR(1.3)	TR(1.8)	TR(1.4)	TR(1.2)	--	--	9.1	--
	m-&p-xylenes	40	--	--	6.5	--	--	3.7	2.6	4.3	3.3	3.2	--	--	16.5	--
	Naphthalene	5	--	--	ND(1)	--	--	ND(1)	ND(1)	3.1	4	TR(1.7)	--	--	TR(1.4)	--
	o-xylenes	10	--	--	2.5	--	--	TR(1.4)	TR(1.2)	TR(1.7)	TR(1.3)	TR(1.3)	--	--	6.5	--
	Styrene	2.79	--	--	ND(1)	--	--	TR(1.1)	TR(1.4)	6.1	4.1	4.3	--	--	78.3	--
	Toluene	28.65	--	--	17.8	--	--	36.3	35.9	35.9	23.3	22.2	--	--	33.7	--
06-Apr-00	Benzene	21	--	--	2.3	--	--	TR(1.8)	ND(1)	45.2	32.3	83.9	--	--	45.2	--
	Ethylbenzene	9.62	--	--	ND(1)	--	--	16.5	208.7	ND(1)	73.9	17	--	--	ND(1)	--
	m-&p-xylenes	40	--	--	2.9	--	--	56.5	739.1	11.7	265.2	60.9	--	--	10	--
	Naphthalene	5	--	--	ND(1)	--	--	ND(1)	ND(1)	ND(1)	ND(1)	TR(2.5)	--	--	ND(1)	--
	o-xylenes	10	--	--	TR(1)	--	--	9.6	134.8	ND(1)	47.8	10.4	--	--	TR(4.2)	--
	Styrene	2.79	--	--	ND(1)	--	--	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	--	--	9.6	--
	Toluene	28.65	--	--	8.5	--	--	159.3	2000	125.9	629.6	240.7	--	--	21.9	--
22-Feb-00	Benzene	21	--	--	2.5	--	--	2.1	--	58.1	32.3	83.9	--	--	71	--
	Ethylbenzene	9.62	--	--	1.2	--	--	1.1	--	2.8	1.7	2.7	--	--	10	--
	m-&p-xylenes	40	--	--	4	--	--	3.1	--	8.7	5.2	9.6	--	--	18.3	--
	Naphthalene	5	--	--	ND(1)	--	--	ND(1)	--	ND(1)	ND(1)	2.1	--	--	ND(1)	--
	o-xylenes	10	--	--	1.3	--	--	1	--	2.9	1.7	2.9	--	--	6.5	--
	Styrene	2.79	--	--	ND(1)	--	--	ND(1)	--	1.8	ND(1)	1.8	--	--	39.1	--
	Toluene	28.65	--	--	8.5	--	--	9.3	--	32.2	13	16.7	--	--	23	--



TABLE 1

SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
29-Nov-99	Benzene	21	--	--	3.5	--	1.2	1.8	11.6	11.6	18.1	--	9.7	--
	Ethylbenzene	9.62	--	--	1	--	1.1	1.5	1.2	0.8	TR(0.7)	--	3.8	--
	m-&p-xylenes	40	--	--	3.1	--	3.9	5.2	3	2.3	2.3	--	7	--
	Naphthalene	5	--	--	ND(2.1)	--	ND(2.1)	ND(2.1)	ND(2.1)	ND(2.1)	ND(2.1)	--	ND(2.1)	--
	o-xylenes	10	--	--	TR(1)	--	1.1	1.5	1	0.7	TR(0.7)	--	2.8	--
	Styrene	2.79	--	--	ND(2.2)	--	ND(2.2)	ND(2.2)	1.4	ND(2.2)	1	--	29.6	--
	Toluene	28.65	--	--	7.4	--	9.3	16.7	20.4	8.5	7.8	--	9.3	--
30-Sep-99	Benzene	21	0.9	--	2.1	1.4	TR(1.5)	2.3	61.3	32.3	21.6	--	--	--
	Ethylbenzene	9.62	ND(2.2)	--	1.2	TR(0.9)	TR(1.1)	1.6	17	7.4	4.8	--	--	--
	m-&p-xylenes	40	2	--	3.7	2.8	3.2	3.1	43.5	20.9	13.9	--	--	--
	Naphthalene	5	TR(0.9)	--	1	TR(0.8)	TR(1.6)	1.1	2.2	2.6	2.1	--	--	--
	o-xylenes	10	TR(1)	--	1.7	1.2	TR(1.5)	1.3	12.2	6.5	4.2	--	--	--
	Styrene	2.79	ND(2.2)	--	ND(2.2)	ND(2.2)	ND(2.2)	ND(2.2)	3.3	1.7	165.2	--	--	--
	Toluene	28.65	5.2	--	7	7.8	10.7	9.3	63	18.1	15.9	--	--	--
18-Dec-98	Benzene	21	--	--	--	--	--	--	74.2	22.6	--	--	--	--
	Ethylbenzene	9.62	--	--	--	--	--	--	12.2	7.4	--	--	--	--
	m-&p-xylenes	40	--	--	--	--	--	--	28.7	28.7	--	--	--	--
	Naphthalene	5	--	--	--	--	--	--	ND(1)	2.4	--	--	--	--
	o-xylenes	10	--	--	--	--	--	--	9.6	13	--	--	--	--
	Styrene	2.79	--	--	--	--	--	--	1.3	ND(2)	--	--	--	--
	Toluene	28.65	--	--	--	--	--	--	16.7	13	--	--	--	--

TABLE I

**SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
22-Dec-97	Benzene	21	--	--	6.8	--	--	--	58.1	19.7	--	--	--	--
	Ethylbenzene	9.62	--	--	3	--	--	--	5.2	8.7	--	--	--	--
	m-&p-xylenes	40	--	--	10.4	--	--	--	5.7	26.1	--	--	--	--
	Naphthalene	5	--	--	ND(2.1)	--	--	--	ND(2.1)	TR(1.1)	--	--	--	--
	o-xylenes	10	--	--	3.9	--	--	--	1.7	8.7	--	--	--	--
	Styrene	2.79	--	--	ND(2.2)	--	--	--	1.3	3.5	--	--	--	--
	Toluene	28.65	--	--	18.1	--	--	--	9.6	81.5	--	--	--	--
19-Nov-97	Benzene	21	2.9	--	6.1	3.5	2.6	6.1	196.8	41.9	24.2	--	--	--
	Ethylbenzene	9.62	ND(0.9)	--	3.9	1.3	1.7	4.8	11.7	4.3	3	--	--	--
	m-&p-xylenes	40	2.6	--	13.5	4.8	4.3	6.5	12.2	8.7	6.5	--	--	--
	Naphthalene	5	ND(1.1)	--	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	ND(1.1)	--	--	--
	o-xylenes	10	0.9	--	5.2	1.7	1.7	2.6	3.5	2.6	2.2	--	--	--
	Styrene	2.79	ND(0.9)	--	ND(0.9)	ND(0.9)	ND(0.9)	ND(0.9)	1.7	ND(0.9)	2.2	--	--	--
	Toluene	28.65	9.3	--	24.1	12.6	11.1	15.2	19.3	24.4	13.3	--	--	--
18-Jun-94	Benzene	21	--	3.2	--	--	--	5.8	--	3.5	3.5	2.3	--	--
	Ethylbenzene	9.62	--	1.7	--	--	--	4.8	--	61.7	90	69.1	--	--
	m-&p-xylenes	40	--	4.3	--	--	--	10.9	--	149.1	210	162.2	--	--
	Naphthalene	5	--	1.1	--	--	--	2.1	--	1.1	1.1	1.1	--	--
	o-xylenes	10	--	1.3	--	--	--	3.5	--	32.2	45.7	34.3	--	--
	Styrene	2.79	--	TR(0.11)	--	--	--	1.3	--	3.5	3.5	3	--	--
	Toluene	28.65	--	13.3	--	--	--	44.1	--	29.6	20	20	--	--

**TABLE 1**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in ug/m <sup>3</sup> )										
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10

**NOTES AND ABBREVIATIONS:**

1. VOCs (volatile organic compound) were analyzed by EPA Method T014. Results are provided in ug/m<sup>3</sup>, unless otherwise noted.
2. OSHA PEL: Permissible Exposure Limits for air contaminants in Title 29 CFR Part 1910.1000, Department of Labor, Occupational Safety Health Administration, 1989 and 1993 final ruling. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
3. ACGIH TLV: Threshold Limit Values recommended by the ACGIH. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
4. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
5. MADEP Indoor Air Background Values from: MADEP, "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of MADEP VPH (EPH Approach)," Final Policy, 31 October 2002 (Policy #WSC-02-411); and MCP Toxicity.xls (MCPStnds.zip), 20 December 2001, available at [http://www.state.ma.us/dep/bwsc/files-standard\\_gw2\\_gw2.htm](http://www.state.ma.us/dep/bwsc/files-standard_gw2_gw2.htm).
6. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
7. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
8. Test Results associated with 6 April 2000 sampling event are not representative of typical indoor air conditions due to interference from products containing VOC's being used inside the facility at the time of sampling.
9. Results collected from the Rooftop sample location on 22 December 1997 are not shown in this table but have been reported in RAM Status reports dated 7 October 2004 and earlier.
10. Due to facility modifications, Sample location 10 is no longer accessible as of October 2004. This location has been replaced by Sample Location 11; refer to Figure 2 for this sample location.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Shut valve on 19 January 2000

INFLUENT	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	175	63	60	10.5	2	0.2	195	82	61	38	1.6	19
Compound (ug/L)												
Benzene	348	88	127	19	19	ND	402	192	148	72	47	26
Toluene	45	23	36	7	11	ND	200	173	126	69	103	53
Ethylbenzene	32	15	22	4	5	ND	77	56	133	29	79	23
M&P Xylene	18	11	17	3	5	ND	76	70	282	48	126	42
O Xylene	2	ND	3	ND	ND	ND	14	17	36	14	67	18
Naphthalene	2.5	2.5	2.5	1.5	1.5	ND	1.5	1.5	ND	ND	ND	ND
Styrene	ND	ND	5	ND	ND	2	13	12	29	10	48	6
Total VOCs	445	137	210	183	40	2	782	520	974	262	420	168

Shut valve on 19 January 2000

EFFLUENT - 1	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	11	4.1	0	0.2	0	0.8	4	0	0.4	0
Compound (ug/L)												
Benzene	ND	ND	33	14	ND	ND	ND	ND	56	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	11	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	4	ND	ND	41	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	26	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	4	ND	ND	ND	ND	16	ND	15	ND
Total VOCs	0	0	33	18	0	0	0	9	72	ND	93	0

Shut valve on 19 January 2000

EFFLUENT - 2	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	14	ND
O Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	9	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	2	NA	2	ND	ND	ND	11	ND	36	ND	6	ND
Total VOCs	2	NA	2	0	0	0	11	0	36	ND	29	0

## NOTES AND ABBREVIATIONS

- VOCs - volatile organic compounds
- ND - compound not detected above method detection limit (see final report sheet) - 1 ug/L
- NA - not analyzed
- INFLUENT - 1: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment from road surface
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment from pipe surface
- Samples analyzed by gas chromatography at Henry & Adams Laboratory

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Shut valve on 19 January 2000												
INFLUENT Sampling Increment Sample Date	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	175	63	60	10.5	2	0.2	195	82	61	38	1.6	19
Compound (ug/L)												
Benzene	348	88	127	19	19	ND	402	192	148	72	47	26
Toluene	45	23	36	7	11	ND	200	173	326	89	103	53
Ethylbenzene	32	15	22	4	5	ND	77	56	153	29	29	23
M&P Xylene	18	11	17	3	5	ND	76	70	282	48	126	42
O Xylene	2	ND	3	ND	ND	ND	14	17	36	14	67	18
Capitoline	NA	NA	NA	130	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	5	ND	ND	2	13	12	29	10	48	6
Total VOCs	445	137	210	183	40	2	782	520	974	262	420	168

Shut valve on 19 January 2000												
EFFLUENT - 1 Sampling Increment Sample Date	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	11	4.1	0	0.2	0	0.6	4	0	0.4	0
Compound (ug/L)												
Benzene	ND	ND	33	14	ND	ND	ND	ND	56	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	5	ND	ND	11	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	4	ND	ND	41	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	4	ND	ND	ND	ND	16	ND	15	ND
Total VOCs	0	0	33	18	0	0	0	9	72	ND	93	0

Shut valve on 19 January 2000												
EFFLUENT - 2 Sampling Increment Sample Date												
	Day 1 16-Nov-99	Day 3 19-Nov-99	Day 7 23-Nov-99	Day 14 30-Nov-99	Day 28 14-Dec-99	2 Months 10-Jan-00	Day 70 25-Jan-00	3 Months 15-Feb-00	4 Months 14-Mar-00	4.5 Months 29-Mar-00	5 Months 26-Apr-00	5.5 Months 1-May-00
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	14	ND
O Xylene	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	9	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	2	NA	2	ND	ND	ND	11	ND	36	ND	6	ND
Total VOCs	2	NA	2	0	0	0	11	0	36	ND	29	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (see also Appendix C) 1 ug/L.
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to valve isolation
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment drums (cold capture)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment drums (cold capture)
- Samples analyzed by gas chromatography at Mary & John's laboratory

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Opened valve on 2 October 2000											
INFLUENT Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 Months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	16 Months 30-Apr-01
PID Reading (ppm)	9.4	4.2	1.9	0.6	0.4	0	0	0	0	0	0
Compound (ug/L)											
Benzene	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	50	20	7	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	15	6	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	27	18	5	18	ND	ND	ND	ND	ND	ND	ND
O Xylene	8	7	ND	2	ND	ND	5	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	3	ND	ND	2	4	3	ND	ND	5
Total VOCs	113	51	15	20	0	2	9	3	0	0	5

Opened valve on 2 October 2000											
EFFLUENT - 1 Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 Months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	16 Months 30-Apr-01
PID Reading (ppm)	4.5	3.3	1.2	0.8	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	28	8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	11	13	10	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	11	4	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	5	11	4	ND	ND	ND
Total VOCs	28	19	13	21	3	5	11	4	0	0	0

Opened valve on 2 October 2000											
EFFLUENT - 2 Sampling Increment Sample Date	6 Months 24-May-00	7 Months 23-Jun-00	8 Months 31-Jul-00	9 Months 29-Aug-00	10 Months 27-Sep-00	11 months 31-Oct-00	12 months 28-Nov-00	13 months 31-Dec-00	14 months 22-Jan-01	15 months 27-Feb-01	16 Months 30-Apr-01
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (see data approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to valve opening
- EFFLUENT - 1: Vapor samples collected after blowing through primary valve (mainstem shut-off valve)
- EFFLUENT - 2: Vapor samples collected after blowing through secondary valve (mainstem shut-off valve)
- Samples analyzed by gas chromatograph/mass spectrometry (GC/MS)



TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT	17 Months 31-May-01	18 Months 27-Jun-01	19 Months 27-Jul-01	20 Months 31-Aug-01	21 months 30-Sep-01	22 Months 29-Oct-01	23 months 30-Nov-01	24 months 19-Dec-01	25 months 31-Jan-02	26 months 27-Feb-02	27 months 28-Mar-02
Sampling Increment											
Sample Date											
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	6	3	ND	1	3	ND	4	ND	ND	ND	ND
Total VOCs	6	3	0	1	3	0	4	0	0	0	0

EFFLUENT - 1	17 Months 31-May-01	18 Months 27-Jun-01	19 Months 27-Jul-01	20 months 31-Aug-01	21 months 30-Sep-01	22 Months 29-Oct-01	23 months 30-Nov-01	24 months 19-Dec-01	25 months 31-Jan-02	26 months 27-Feb-02	27 months 28-Mar-02
Sampling Increment											
Sample Date											
PID Reading (ppm)	0	1.2	0.8	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	2	NA	ND	1	NA	ND	ND
Total VOCs	0	0	0	0	2	0	0	1	0	0	0

EFFLUENT - 2	17 Months 31-May-01	18 Months 27-Jun-01	19 Months 27-Jul-01	20 months 31-Aug-01	21 months 30-Sep-01	22 Months 29-Oct-01	23 months 30-Nov-01	24 months 19-Dec-01	25 months 31-Jan-02	26 months 27-Feb-02	27 months 28-Mar-02
Sampling Increment											
Sample Date											
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS

- VOCs - volatile organic compounds
- ND - compound not detected above method detection limit (value that approximately 1 ug/L)
- NA - not analyzed
- INFLUENT - Vapor samples collected prior to carbon treatment
- EFFLUENT - 1 - Vapor samples collected after flowing through primary carbon treatment down-side-draw
- EFFLUENT - 2 - Vapor samples collected after flowing through secondary carbon treatment down-side-draw
- Samples analyzed by gas chromatography at BGS & Admet Laboratory

TABLE II  
CHEMICAL ANALYSIS OF SUBSLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jun-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 1		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jun-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	5	0	0	0

EFFLUENT - 2		28 Months 2-May-02	29 Months 5-Jun-02	30 Months 27-Jun-02	31 months 30-Jul-02	32 months 27-Aug-02	33 Months 25-Sep-02	34 Months 28-Oct-02	35 Months 24-Nov-02	36 Months 31-Dec-02	37 Months 29-Jan-03	38 Months 21-Feb-03	39 Months 31-Mar-03
Sample Date													
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)													
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	3	0	0	5	0	0	0	5	1	0	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (see data approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment drum (cold carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment drum (near-point carbon)
- Samples analyzed by gas chromatography at H&A & Adcock Laboratory.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		4	ND	5	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		11	0	5	0	0	0	0	0	0	0	0

EFFLUENT - 1		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 2		40 Months 28-Apr-03	41 Months 29-May-03	42 Months 30-Jun-03	43 months 31-Jul-03	44 months 22-Aug-03	45 Months 30-Sep-03	46 Months 28-Oct-04	47 Months 30-Nov-04	48 Months 18-Dec-04	49 Months 22-Jan-04	50 Months 14-Feb-04
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOCs: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to soil vapor treatment
- EFFLUENT - 1: Vapor samples collected after flowing through primary carbon treatment (first bed carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment (second bed carbon)
- Samples analyzed by gas chromatography-mass spectrometry (GC/MS)

TABLE II  
CHEMICAL ANALYSIS OF SUBSLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT Sampling Increment Sample Date	51 Months 31-Mar-04	52 Months 28-Apr-04	53 Months 26-May-04	54 months 29-Jun-04	55 months 30-Jul-04	56 Months 31-Aug-04	57 Months 14-Sep-04	58 Months 27-Oct-04	59 Months 30-Nov-04	60 Months 20-Dec-04	61 Months 25-Jan-05
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's	0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 1 Sampling Increment Sample Date	51 Months 31-Mar-04	52 Months 28-Apr-04	53 Months 26-May-04	54 months 29-Jun-04	55 months 30-Jul-04	56 Months 31-Aug-04	57 Months 14-Sep-04	58 Months 27-Oct-04	59 Months 30-Nov-04	60 Months 20-Dec-04	61 Months 25-Jan-05
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	14	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's	0	14	0	0	0	0	0	0	0	0	0

EFFLUENT - 2 Sampling Increment Sample Date	51 Months 31-Mar-04	52 Months 28-Apr-04	53 Months 26-May-04	54 months 29-Jun-04	55 months 30-Jul-04	56 Months 31-Aug-04	57 Months 14-Sep-04	58 Months 27-Oct-04	59 Months 30-Nov-04	60 Months 20-Dec-04	61 Months 25-Jan-05
PID Reading (ppm)	0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's	0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOC's - volatile organic compounds
- ND - compound not detected above method detection limit (less than approximately 1 ug/L).
- NA - not analyzed
- INFLUENT - Vapor samples collected prior to carbon treatment
- EFFLUENT - 1 - Vapor samples collected after flowing through primary carbon treatment drum and carbon.
- EFFLUENT - 2 - Vapor samples collected after flowing through secondary carbon treatment drum (post carbon).
- Samples analyzed by gas chromatography at Henry B. Adams Laboratory.

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		62 Months 28-Feb-05	63 Months 21-Mar-05	64 Months 26-Apr-05	65 Months 31-May-05	66 Months 26-Jun-05	67 Months 21-Jul-05	68 Months 31-Aug-05	69 Months 26-Sep-05	70 Months 31-Oct-05	71 Months 30-Nov-05	72 Months 29-Dec-05
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 1		62 Months 28-Feb-05	63 Months 21-Mar-05	64 Months 26-Apr-05	65 Months 31-May-05	66 Months 26-Jun-05	67 Months 21-Jul-05	68 Months 31-Aug-05	69 Months 26-Sep-05	70 Months 31-Oct-05	71 Months 30-Nov-05	72 Months 29-Dec-05
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 2		62 Months 28-Feb-05	63 Months 21-Mar-05	64 Months 26-Apr-05	65 Months 31-May-05	66 Months 26-Jun-05	67 Months 21-Jul-05	68 Months 31-Aug-05	69 Months 26-Sep-05	70 Months 31-Oct-05	71 Months 30-Nov-05	72 Months 29-Dec-05
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs		0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

1. VOCs - volatile organic compounds
2. ND - compound not detected above method detection limit (less than approximately 1 ug/L)
3. NA - not analyzed
4. EPA/LEAD - Vapor samples collected prior to carbon treatment
5. EFFLUENT - 1 - Vapor samples collected after flowing through primary carbon treatment drum (road carbon)
6. EFFLUENT - 2 - Vapor samples collected after flowing through secondary carbon treatment drum (granular carbon)
7. Samples analyzed by gas chromatograph at H&E & Ashraf Laboratory

TABLE II  
CHEMICAL ANALYSIS OF SUB-SLAB VENTING SYSTEM VAPOUR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		73 Months 24-Jan-06	74 Months 27-Feb-06	75 Months 31-Mar-06	76 Months 25-Apr-06	77 Months 31-May-06	78 Months 28-Jun-06	79 Months 28-Jul-06	80 Months 31-Aug-06	81 Months 26-Sep-06	82 Months 30-Oct-06	83 Months 29-Nov-06
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 1		73 Months 24-Jan-06	74 Months 27-Feb-06	75 Months 31-Mar-06	76 Months 25-Apr-06	77 Months 31-May-06	78 Months 28-Jun-06	79 Months 28-Jul-06	80 Months 31-Aug-06	81 Months 26-Sep-06	82 Months 30-Oct-06	83 Months 29-Nov-06
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's		0	0	0	0	0	0	0	0	0	0	0

EFFLUENT - 2		73 Months 24-Jan-06	74 Months 27-Feb-06	75 Months 31-Mar-06	76 Months 25-Apr-06	77 Months 31-May-06	78 Months 28-Jun-06	79 Months 28-Jul-06	80 Months 31-Aug-06	81 Months 26-Sep-06	82 Months 30-Oct-06	83 Months 29-Nov-06
Sampling Increment												
Sample Date												
PID Reading (ppm)		0	0	0	0	0	0	0	0	0	0	0
Compound (ug/L)												
Benzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
O Xylene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOC's		0	0	0	0	0	0	0	0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOC's, volatile organic compounds
- ND - compound not detected above method detection limit (not that approximately 1 ug/L)
- NA, not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flow through primary carbon treatment from cold carbon
- EFFLUENT - 2: Vapor samples collected after flow through secondary carbon treatment from cold carbon
- Samples analyzed by gas chromatograph at Halsey & Maltby Laboratory



TABLE II  
CHEMICAL ANALYSIS OF SUBSLAB VENTING SYSTEM VAPOR SAMPLES  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

INFLUENT		84 Months	85 Months	86 Months	87 Months
Sampling Increment	Sample Date	19-Dec-06	25-Jan-07	26-Feb-07	14-Mar-07
PID Reading (ppm)		0	0	0	0
Compound (ug/L)					
Benzene		ND	ND	ND	ND
Toluene		ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND
O Xylene		ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA
Styrene		ND	ND	ND	ND
Total VOC's		0	0	0	0

EFFLUENT - 1		84 Months	85 Months	86 Months	87 Months
Sampling Increment	Sample Date	19-Dec-06	25-Jan-07	26-Feb-07	14-Mar-07
PID Reading (ppm)		0	0	0	0
Compound (ug/L)					
Benzene		ND	ND	ND	ND
Toluene		ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND
O Xylene		ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA
Styrene		ND	ND	ND	ND
Total VOC's		0	0	0	0

EFFLUENT - 2		84 Months	85 Months	86 Months	87 Months
Sampling Increment	Sample Date	19-Dec-06	25-Jan-07	26-Feb-07	14-Mar-07
PID Reading (ppm)		0	0	0	0
Compound (ug/L)					
Benzene		ND	ND	ND	ND
Toluene		ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND
M&P Xylene		ND	ND	ND	ND
O Xylene		ND	ND	ND	ND
Naphthalene		NA	NA	NA	NA
Styrene		ND	ND	ND	ND
Total VOC's		0	0	0	0

## NOTES AND ABBREVIATIONS:

- VOC's: volatile organic compounds
- ND: compound not detected above method detection limit (less than approximately 1 ug/L)
- NA: not analyzed
- INFLUENT: Vapor samples collected prior to carbon treatment
- EFFLUENT - 1: Vapor samples collected after flowing through pilot carbon treatment drum (old carbon)
- EFFLUENT - 2: Vapor samples collected after flowing through secondary carbon treatment drum (new carbon)
- Samples analyzed by gas chromatograph/mass spectrometry (GC/MS)

[illegible]

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
128 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Influent Concentrations H2A GC (log/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent Concentrations Effluent - 2 (ppm)	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure ("water) Blower Knockout Drum	Vacuum at Extraction Points ("water) EP-1 EP-2 EP-3 EP-4 EP-5	
February 8, 2000	17:20	117		0	0	89	1500	1490	17	11.5	36
February 9, 2000	7:45	120		0	0	10	1500	1490	18	11	36
February 10, 2000	8:30	128		0	0	10	1500	1490	17.5	11	36
February 10, 2000	18:30	134		40	0	102	1500	1490	17.5	11.5	36
February 11, 2000	7:00	137		105	0	35	1500	1490	17	13.5	35
February 12, 2000	7:20	129		0	0	100	1500	1490	17.5	11	36
February 13, 2000	15:00	120		0	0	100	1500	1490	17.5	11	36.5
February 14, 2000	17:10	70		0	0	103	1500	1490	17.5	11	35
February 15, 2000	8:00	82	520	0.3	0	30	1500	1490	17.5	11	36
February 16, 2000	7:30	85		48	0	101	1500	1490	17.5	11	36
February 18, 2000	9:45	78		0	0	20	1500	1490	17	10.5	37
February 21, 2000	9:00	112		32	0	100	1500	1490	17.5	10.5	36
February 22, 2000	8:30	70		0	0	100	1500	1490	17	10.5	35.8
February 22, 2000	18:30	102		0	0	35	1500	1490	17.5	11	35
February 23, 2000	14:00	96		0	0	37	1500	1490	17.5	11	36
February 24, 2000	8:15	62		0.5	0	50	1500	1490	17.5	11.5	36.5
February 24, 2000	16:00	94		77	0	50	1500	1490	17.5	11	35
February 25, 2000	8:00	88		0	0	101	1500	1490	17.5	11	35
February 26, 2000	19:50	80		0	0	108	1500	1490	17.5	11.5	36
February 27, 2000	12:45	90		1	0	60	1500	1490	17.5	12	36
February 28, 2000	7:00	90		0	0	32	1500	1490	17.5	12	36
February 28, 2000	8:00	86		0	0	50	1500	1490	17.5	11.5	35
February 28, 2000	8:00	71		0	0	103	1500	1490	17.5	11	35
March 1, 2000	10:30	66		31	0	106	1500	1490	17	11	35
March 2, 2000	10:00	32		22	0	40	1500	1490	17	11.5	35.5
March 3, 2000	7:45	80		48	0	55	1500	1490	17.5	11.5	35.5
March 4, 2000	8:00	74		0	0	50	1500	1490	17	11.5	36
March 5, 2000	14:00	69		7	0	48	1500	1490	17	11	36
March 6, 2000	8:00	39		21	0	50	1500	1490	17	10.5	36
March 7, 2000	19:00	47		7	0	60	1500	1490	17	11	36
March 8, 2000	8:20	35		0	0	111	1500	1490	17	11	36
March 9, 2000	8:30	61		19	0	122	1500	1490	17	11	36
March 10, 2000	17:30	82		0	0	114	1500	1490	17	11	35
March 11, 2000	0:15	65		0	0	103	1500	1490	17	11	35
March 12, 2000	13:30	49		0	0	106	1500	1490	17.5	11	36
March 13, 2000	9:00	45		0	0	105	1500	1490	17.5	11.5	36
March 14, 2000	8:50	61	974	0	0	107	1500	1490	17.5	11.5	36
March 15, 2000	8:45	8		4	0	35	1500	1490	17.5	11	36
March 15, 2000	20:30	86		52	0	101	1500	1490	17	11	36
March 16, 2000	8:15	99		58	0	111	1500	1490	17.5	11	36
March 16, 2000	12:45	85		95	0	120	1500	1490	17.5	11	36
March 16, 2000	19:15	48		38	0	117	1500	1490	17.5	11	34
March 17, 2000	8:45	50		0	0	104	1500	1490	17	11	35
March 17, 2000	18:30	15		0	0	102	1500	1490	17	11	35
March 18, 2000	7:30	38		0	0	104	1500	1490	17.5	11	36
March 19, 2000 system down											
March 20, 2000 system down											
March 21, 2000 system down											
March 22, 2000 system re-started											
March 22, 2000	18:30	26		0	0	105	1500	1490	17.5	10	34.5
March 23, 2000	8:00	28		0	0	107	1500	1490	17.5	10.5	34.5
March 23, 2000	21:00	32		0	0	110	1500	1490	17.5	10.5	34.5
March 24, 2000	9:45	32		0	0	113	1500	1490	17.5	10.5	34.5
March 24, 2000	13:00	34		0	0	65	1500	1490	17.5	10.5	34.5
March 25, 2000	17:45	38		0	0	112	1500	1490	17	11	34
March 27, 2000	11:30	32		28	0	119	1500	1490	17	11	33
March 28, 2000	13:15	47		29	0	114	1500	1490	18	12.5	32
March 28, 2000	20:00	37		0	0	50	1500	1490	19	12	33
March 29, 2000	9:00	38	262	0	0	50	1500	1490	19	12	33
March 29, 2000	18:00	20		0	0	112	1500	1490	17.5	12	33

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
128 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations		Effluent Concentrations		Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min)		System Vacuum and Pressure ("water") Blower Knockout Discharge	Vacuum at Extraction Points ("water")						
		PID (ppm)	H2A GC (uSCL)	Effluent - 1 (ppm)	Effluent - 2 (ppm)			Influent	Effluent		EP-1	EP-2	EP-3	EP-4	EP-5		
March 30, 2000	9:30	11		0	0	50	112	1600	1400	17.5	11	33					
March 30, 2000	18:15	33		0	0	45	113	1500	1400	17.5	11	33					
March 31, 2000	7:30	30		0	0	50	109	1500	1400	17.5	11	33.5					
April 1, 2000	12:30	26		0	0	65	114	1500	1400	17.5	12	33					
April 2, 2000	18:30	40		15	0	65	119	1300	1400	17.5	11.5	33					
April 3, 2000	14:45	28		16	0	62	117	1500	1400	18	11	33					
April 4, 2000	20:30	36		0	0	55	117	1500	1400	17.5	11	33					
April 5, 2000	13:45	21		0	0	60	121	1500	1400	18	11	33					
April 6, 2000	10:30	21		0	0	45	116	1500	1400	18	11	33					
April 7, 2000	8:00	27.0		0	0	40	111	1500	1400	18	11.5	33					
April 8, 2000	7:15	22.0		24.0	0.0	50	117	1500	1400	18	11	33					
April 9, 2000	15:45	21.0		0.0	0.0	40	113	1500	1450	18	11	33					
April 10, 2000	13:00	32.0		6.0	0.0	50	112	1500	1400	17.5	11	33					
April 11, 2000	9:45	47.0		34.0	0.0	45	111	1500	1400	17.5	11	34					
April 12, 2000	14:15	25.0		13.0	0.0	45	119	1500	1400	17.5	11	34					
April 13, 2000	10:00	38.0		10.0	0.0	50	112	1500	1400	17.5	11	34					
April 14, 2000	7:00	50.0		6.0	0.0	50	111	1500	1400	17.5	11	34					
April 15, 2000	9:45	48.0		0.0	0.0	45	117	1500	1400	18.5	11	33.5					
April 16, 2000	17:45	37.0		0.0	0.0	50	116	1500	1500	18	11	34					
April 17, 2000	7:45	15.0		0.0	0.0	45	111	1500	1460	18	11	34					
April 18, 2000	19:30	15.0		0.0	0.0	45	110	1500	1500	18	11	34					
April 19, 2000	7:00	22.0		4.0	0.0	50	112	1500	1500	18	11	34					
April 20, 2000	18:00	16.0		5.0	0.0	45	112	1500	1500	18	11	34					
April 21, 2000	9:15	10.0		8.0	0.0	50	117	1500	1500	18	11	34					
April 22, 2000	17:30	10.0		0.0	0.0	50	115	1500	1500	18	11	34					
April 23, 2000	9:30	6.0		0.0	0.0	50	117	1500	1500	18	11	33					
April 24, 2000	15:15	5.0		0.0	0.0	50	112	1500	1500	19	12	33					
April 25, 2000	10:30	1.6	420	0.0	0.0	40	108	1500	1500	17.5	11	33					
April 26, 2000	7:30	3.4		0.0	0.0	50	110	1500	1500	18	12	33					
April 27, 2000	10:30	3.3		0.0	0.0	50	116	1500	1500	18	12	33					
April 28, 2000	7:00	4.6	108	0.0	0.0	50	118	1500	1500	18	12	34					
April 29, 2000	9:30	30.0		0.0	0.0	50	115	1500	1500	18	11	33					
May 1, 2000	10:00	17.0		0.0	0.0	60	117	1500	1500	18	12	33					
May 2, 2000	9:30	6.0		0.0	0.0	60	123	1500	1500	18	11.5	33					
May 3, 2000	12:00	18.0		0.1	0.0	65	120	1500	1500	18	11	33					
May 4, 2000	9:15	18.0		0.0	0.0	70	129	1500	1500	18	11.5	33					
May 5, 2000	7:00	15.0		0.0	0.0	75	128	1500	1500	18	11	33					
May 6, 2000	8:30	11.8		1.0	0.0	65	128	1500	1500	17.5	11	33					
May 7, 2000	17:00	12.0		1.8	0.0	50	117	1500	1500	17.5	11	33					
May 8, 2000	9:15	13.0		0.0	0.0	60	122	1500	1500	18	11.5	33					
May 9, 2000	15:30	11.3		0.0	0.0	65	121	1500	1500	18	11	33					
May 10, 2000	7:00	17.0		0.0	0.0	60	121	1500	1500	17.5	11	33					
May 11, 2000	16:00	7.0		0.1	0.0	65	122	1500	1500	18	11	33					
May 12, 2000	9:00	13.0		0.1	0.0	70	121	1500	1500	18	11.5	33					
May 13, 2000	18:30	11.0		1.1	0.0	55	119	1500	1500	19	12	33					
May 14, 2000	10:00	15.2		2.5	0.0	50	120	1500	1500	17	11	33					
May 15, 2000	16:45	15.3		4.6	0.0	60	121	1500	1500	17.5	12	32.5					
May 16, 2000	13:15	12.3	113	4.6	0.0	60	119	1500	1500	17.5	12.5	32					
May 17, 2000	9:00	9.4		4.5	0.0	65	120	1500	1500	18	12	32					
May 18, 2000	12:00	10.1		6.5	0.0	65	121	1500	1500	18	12	32					
May 19, 2000	6:00	10.0		7.0	0.0	60	121	1500	1500	18	12	32					
May 20, 2000	12:00	11.0		9.0	0.0	70	123	1500	1500	18	12	32.5					
May 21, 2000	7:30	10.6		9.0	0.0	70	126	1500	1500	18	11.5	32					
May 22, 2000	15:00	10.1		10.0	0.0	85	140	1500	1500	18	11	32					
May 23, 2000	8:00	10.0		9.5	0.0	80	132	1300	1500	18	11	33					
May 24, 2000	7:00	8.0		0.0	0.0	80	122	1500	1500	18	12	33					
May 25, 2000	16:00	6.0		0.0	0.0	75	123	1500	1500	18	12	33					
May 26, 2000	17:00	6.0		0.0	0.0	65	121	1500	1500	17.5	12	33					
May 27, 2000	9:00	6.5		0.1	0.0	60	120	1500	1500	18	12.5	33					

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PHD (ppm)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp (°F)	Outlet Vapor Temp (°F)	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure Blower Knockout Drum	Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
June 13, 2000	8:00	4.8	0.2	0.0	65	133	1500	1500	18	33	
June 14, 2000	9:00	3.3	0.1	0.0	60	122	1500	1500	48	33	
June 15, 2000	8:45	1.7	0.2	0.0	60	123	1500	1500	15	33	
June 16, 2000	8:15	5.0	2.5	0.0	75	133	1500	1500	15	32	
June 18, 2000	15:30	8.2	2.5	0.0	75	133	1500	1500	18	33	
June 20, 2000	8:00	5.7	2.2	0.0	75	134	1500	1500	18	33	
June 21, 2000	7:30	4.0	2.7	0.0	75	133	1500	1500	18	33	
June 22, 2000	9:15	3.9	2.6	0.0	80	134	1500	1500	17.5	32.5	
June 23, 2000	9:00	4.2	3.4	0.0	75	134	1500	1500	17.5	32.5	
June 27, 2000	9:30	3.7	3.4	0.0	75	135	1500	1500	17	32	
June 29, 2000	7:15	3.8	2.2	0.0	75	135	1500	1500	16	31.5	
July 5, 2000	8:00	-	2.2	0.0	75	135	1500	1500	16	31	
July 7, 2000	6:45	2.3	1.0	0.0	70	135	1500	1500	15.5	33	
July 9, 2000	10:00	2.9	0.0	0.0	60	129	1500	1500	10.5	33	
July 12, 2000	9:00	2.3	0.1	0.0	60	127	1500	1500	16	33	
July 13, 2000	8:00	2.3	0.1	0.0	65	137	1500	1500	16	32.5	
July 14, 2000	9:00	2.3	0.2	0.0	60	137	1500	1500	16	32.5	
July 20, 2000	17:00	2.2	0.7	0.0	60	137	1500	1500	16	33	
July 26, 2000	7:00	2	0.7	0.0	60	137	1500	1500	16	33	
July 31, 2000	15:30	1.9	1.2	0.0	70	137	1500	1500	17	33	
August 2, 2000	16:30	1.6	0.9	0.0	70	137	1500	1500	16	33	
August 7, 2000	7:30	1.5	0.5	0.0	75	137	1500	1500	16	33	
August 10, 2000	8:15	1.3	0.2	0.0	75	138	1500	1500	16	34	
August 15, 2000	8:15	1.2	0.3	0.0	75	138	1500	1500	15	33	
August 21, 2000	12:15	1	1.2	0.0	65	140	1500	1500	17.5	33.5	
August 26, 2000	15:30	0.8	0.8	0.0	60	138	1500	1500	17.5	33	
August 29, 2000	11:30	0.6	0.8	0.0	60	140	1500	1500	17.5	33	
September 1, 2000	16:30	0.7	0.9	0.0	60	140	1500	1500	17.5	34	
September 5, 2000	7:30	0.6	0.5	0.0	70	140	1500	1500	17.5	34	
September 10, 2000	18:15	0.3	0.4	0.0	60	135	1500	1500	17.5	34	
September 12, 2000	7:00	0.4	0	0.0	60	135	1500	1500	17.5	34	
September 20, 2000	14:15	0.7	0	0.0	75	137	1500	1500	16	33	
September 27, 2000	9:15	0.4	0	0.0	60	130	1500	1500	18	34	
October 2, 2000	7:30	0.2	0	0.0	65	125	1500	1500	11	33.5	
October 2, 2000	8:00	0	0	0.0	65	125	1500	1500	8	30	
October 11, 2000	13:15	0	0	0	65	135	1500	1500	8.5	38	
October 23, 2000	18:30	0	0	0	60	135	1500	1500	8	38	
October 25, 2000	17:00	0	0	0	60	132	1500	1500	8.5	38	
October 31, 2000	18:30	0	0	0	65	125	1500	1500	8.5	38	
November 3, 2000	17:50	0	0	0	60	130	1500	1500	8.5	38	
November 8, 2000	17:10	0	0	0	50	121	1500	1500	6	38	
November 13, 2000	17:30	0	0	0	45	115	1500	1500	10	38	
November 17, 2000	17:00	0	0	0	35	108	1500	1500	10.5	38	
November 22, 2000	15:45	0	0	0	32	108	1500	1500	11	38	
November 28, 2000	17:00	0	0	0	45	107	1500	1500	13.5	38	
December 4, 2000	6:00	0	0	0	30	105	1500	1500	13	38	
December 11, 2000	11:00	0	0	0	40	106	1500	1500	13.5	38	
December 21, 2000	8:45	0	0	0	20	97	1500	1500	14	38	
December 27, 2000	6:00	0	0	0	20	92	1500	1500	14	38	
December 28, 2000	10:00	0	0	0	25	91	1500	1500	14	38	
December 31, 2000	11:00	0	0	0	20	92	1500	1500	14	38	
January 3, 2001	16:45	0	0	0	20	96	1500	1500	14	37	
January 4, 2001	8:00	0	0	0	25	101	1500	1500	10	38	
January 6, 2001	17:30	0	0	0	20	96	1500	1500	17	38	
January 16, 2001	7:30	0	0	0	20	97	1500	1500	17.5	38	
January 19, 2001	15:00	0	0	0	15	96	1500	1500	17.5	38	
January 22, 2001	9:00	0	0	0	25	105	1500	1500	18.5	38	
January 24, 2001	8:30	0	0	0	25	117	1500	1500	18.5	38	
January 26, 2001	7:30	0	0	0	45	117	1500	1500	19	38	
January 31, 2001	9:00	0	0	0	30	107	1500	1500	19.5	38	
February 2, 2001	9:00	0	0	0	30	115	1500	1500	19.5	38	
February 5, 2001	7:30	0	0	0	30	115	1500	1500	19.5	38	

System Down, re-started

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
128 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 3 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure (in. water) Blower	System Vacuum and Pressure (in. water) Manifold	Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
February 7, 2001	10:00	0		0	0	40	117	390	1500	20	2.5	33	
February 9, 2001	9:30	0		0	0	40	114	390	1500	20	2	34	
February 12, 2001	9:30	0		0	0	15	97	390	1500	19.5	2	34	
February 14, 2001	7:30	0		0	0	25	106	390	1500	20	2.5	33	
February 15, 2001	10:45	0		0	0	40	96	390	1500	20	2.5	33	
February 16, 2001	7:30	0		0	0	25	105	390	1500	20.5	2.5	33	
February 20, 2001	9:15	0		0	0	40	114	390	1500	20.5	2.5	33	
February 22, 2001	7:30	0		0	0	30	108	390	1500	20.5	2.5	33	
February 27, 2001	9:00	0		0	0	30	110	390	1500	21	2.5	32.5	
March 1, 2001	7:00	0		0	0	25	100	390	1500	21	2	32.5	
March 2, 2001	9:00	0		0	0	20	100	390	1500	21	2	32.5	
March 2, 2001	12:00	0		0	0	30	95	390	1500	20.5	2	32	
March 7, 2001	13:00	0		0	0	30	114	390	1500	21	2	32	
March 8, 2001	7:00	0		0	0	30	114	390	1500	21	2	32	
March 9, 2001	8:00	0		0	0	30	115	390	1500	21	2	32	
March 12, 2001	7:30	0		0	0	40	118	390	1500	21	2	32	
March 14, 2001	10:00	0		0	0	30	115	390	1500	21	2	32	
March 16, 2001	8:00	0		0	0	30	110	390	1500	21.5	2	32	
March 18, 2001	8:00	0		0	0	30	110	390	1500	21.5	2	32	
March 20, 2001	9:00	0		0	0	30	110	390	1500	21.5	2	32	
March 22, 2001	8:00	0		0	0	35	117	390	1500	21.5	2	32	
March 23, 2001	8:00	0		0	0	40		390	1500	21.5	2	32	
March 23, 2001	8:00	0		0	0	35	112	390	1500	21	2	32	
March 28, 2001	9:30	0		0	0	30	105	390	1500	21.5	2	32	
March 28, 2001	15:00	0		0	0	30	119	390	1500	21.5	2	32	
March 30, 2001	8:00	0		0	0	40	117	390	1500	21.5	3	32	
April 2, 2001	9:45	0		0	0	45	124	390	1500	21.5	3	32	
April 4, 2001	13:00	0		0	0	65	125	390	1500	6.5	3.5	37	
April 9, 2001	10:00	0		0	0	55	117	390	1500	10	4	38	
April 10, 2001	10:00	0		0	0	60	117	390	1500	10	4	37.5	
April 12, 2001	10:00	0		0	0	45	117	390	1500	10	4	38	
April 16, 2001	9:30	0		0	0	60	129	390	1500	10	4	38	
April 19, 2001	15:00	0		0	0	60	137	390	1500	10	4.5	36	
April 20, 2001	16:00	0		0	0	85	151	390	1500	10	4.5	36	
April 24, 2001	15:45	0		0	0	60	120	390	1500	10	4	38	
April 25, 2001	16:00	0		0	0	65	120	390	1500	10	4	38	
April 27, 2001	11:45	0		0	0	52	125	390	1500	10	4	38	
April 30, 2001	19:00	0		0	0	65	129	390	1500	10	4	38	
May 1, 2001	6:30	0		0	0	60	120	390	1500	10	5	36	
May 4, 2001	15:30	0		0	0	70	135	390	1500	10	4.5	37.5	
May 7, 2001	9:00	0		0	0	65	122	390	1500	10	4.5	37.5	
May 9, 2001	8:00	0		0	0	65	122	390	1500	10	5	37.5	
May 11, 2001	7:30	0		0	0	70	142	390	1500	10	38	4	
May 14, 2001	10:00	0		0	0	65	124	390	1500	10	4	37.5	
May 15, 2001	16:00	0		0	0	70	118	390	1500	10	4	37.5	
May 18, 2001	7:30	0		0	0	70	122	390	1500	10	4	38	
May 22, 2001	14:00	0		0	0	75	128	390	1500	10	4	38	
May 24, 2001	7:00	0		0	0	70	122	390	1500	10	4	38	
May 25, 2001	10:00	0		0	0	60	117	390	1500	10	4	38	
May 31, 2001	8:00	0		0	0	70	124	390	1500	10.5	4.5	38	
June 1, 2001	8:00	0		0	0	70	124	390	1500	10.5	4.5	37	
June 4, 2001	13:00	0		0	0	70	137	390	1500	10.5	5	36	
June 6, 2001	9:30	0		0	0	80	158	390	1500	10.5	5	36	
June 8, 2001	13:30	0		0	0	75	140	390	1500	10.5	5	36	
June 11, 2001	9:30	0		0	0	80	140	390	1500	11	5	36	
June 13, 2001	7:00	0		0	0	80	140	390	1500	11	5	36	
June 15, 2001	15:00	0		0	0	75	140	390	1500	11	5	36.5	
June 18, 2001	9:00	0		0	0	70	140	390	1500	11	5	37	
June 21, 2001	9:30	0		0	0	80	140	390	1500	11	5	38	
June 23, 2001	8:00	0		0	0	85	151	390	1500	11	5	38	
June 25, 2001	12:00	0		0	0	85	154	390	1500	11	5	38	
June 27, 2001	10:00	0		0	0	85	154	390	1500	11	5	38	

System down, re-started

Replaced Air Filter



TABLE III  
SUB-SLAB VERTING SYSTEM MONITORING DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations Pb (ppm)	Influent Concentrations H2A GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent Effluent	System Vacuum and Pressure (in water) Blower Knockout Discharge Drum	Viewing at Extraction Points (in water) EP-1 EP-2 EP-3 EP-4 EP-5
July 3, 2001	8:00	0	0	0	0	80	140	390 1500	11 5 37	
July 5, 2001	7:30	0	0	0	0	85	150	390 1500	11 5 37	
July 6, 2001	8:00	0	0	0	0	90	155	390 1500	11 5 37	
July 8, 2001	7:00	0	0	0	0	85	145	390 1500	11 5 36	
July 10, 2001	10:00	0	0	0	0	80	132	390 1500	11 5 37	
July 11, 2001	7:30	0	0	0	0	85	150	390 1500	11 5 37	
July 13, 2001	7:30	0	0	0	0	85	150	390 1500	11 5 37	
July 17, 2001	7:15	0	0	0	0	85	137	390 1500	11 5 36	
July 20, 2001	11:30	0	0	0	0	85	157	390 1500	11 5 37	
July 24, 2001	8:30	0	0	0	0	80	144	390 1500	11 5 37	
July 27, 2001	8:00	0	0	0	0	70	132	390 1500	11 5 37	
July 27, 2001	11:00	0	0	0	0	70	143	390 1500	12 5 39	System Down, re-started
August 5, 2001	15:00	0	0	0	0	80	120	390 1500	12 5 36	
August 7, 2001	16:00	0	0	0	0	85	157	390 1500	12 5 35	
August 8, 2001	9:00	0	0	0	0	80	145	390 1500	12 5 35	
August 10, 2001	19:00	0	0	0	0	80	145	390 1500	12 5 35	
August 13, 2001	7:30	0	0	0	0	75	145	390 1500	12 5 35	
August 16, 2001	10:00	0	0	0	0	80	144	390 1500	13 5 35	
August 20, 2001	9:15	0	0	0	0	75	144	390 1500	13 5 35	
August 24, 2001	9:30	0	0	0	0	75	144	390 1500	13 5 35	
August 26, 2001	7:30	0	0	0	0	80	145	390 1500	13 5 35	
August 27, 2001	7:30	0	0	0	0	75	144	390 1500	13 5 35	
August 28, 2001	7:30	0	0	0	0	75	144	390 1500	13 5 35	
August 31, 2001	8:00	0	0	0	0	75	144	390 1500	13 5 35	
September 14, 2001	11:15	0	0	0	0	65	125	390 1500	13 5 35	
September 21, 2001	13:30	0	0	0	0	65	125	390 1500	13 5 35	
September 30, 2001	18:00	0	0	0	0	65	125	390 1500	13 5 35	
October 4, 2001	8:10	0	0	0	0	65	140	390 1500	13 5 35	
October 8, 2001	12:34	0	0	0	0	75	142	390 1500	17 4 34	
October 15, 2001	11:50	0	0	0	0	65	136	390 1500	20 4 35	
October 18, 2001	10:40	0	0	0	0	65	132	390 1500	20 4 35	
October 24, 2001	12:15	0	0	0	0	65	135	390 1500	20 4 35	
October 25, 2001	12:00	0	0	0	0	75	150	390 1500	22 4 35	
October 31, 2001	14:30	0	0	0	0	55	130	390 1500	22 3 32	
November 10, 2001	11:15	0	0	0	0	55	130	390 1500	22 3 32	
November 12, 2001	10:30	0	0	0	0	55	130	390 1500	22 3 32	
November 16, 2001	14:30	0	0	0	0	55	122	390 1500	22 3 32	
November 21, 2001	17:20	0	0	0.1	0	70	146	390 1500	24 3 30	
November 28, 2001	8:00	0	0	0	0	55	130	390 1500	22 3 30	System Down, electrical repairs made, system re-started
November 30, 2001	9:45	0	0	0	0	45	114	390 1500	22 3 31	
December 6, 2001	12:45	0	0	0	0	75	146	390 1500	24 4 29	
December 7, 2001	12:45	0	0	0	0	65	140	390 1500	24 4 29	
December 12, 2001	12:00	0	0	0	0	55	118	390 1500	11 4 34	
December 19, 2001	14:15	0	0	0	0	45	112	390 1500	11 4 35	
December 21, 2001	13:10	0	0	0	0	40	88	390 1500	12 4 35	
December 26, 2001	13:15	0	0	0	0	35	92	390 1500	12 3 35	
January 3, 2002	7:45	0	0	0	0	35	104	390 1500	11 3 37	
January 4, 2002	11:15	0	0	0	0	55	108	390 1500	12 3 38	
January 7, 2002	13:30	0	0	0	0	45	110	390 1500	11 3 38	
January 11, 2002	13:30	0	0	0	0	55	111	390 1500	11 3 38	
January 16, 2002	15:30	0	0	0	0	60	120	390 1500	10 3 38	
January 22, 2002	12:00	0	0	0	0	60	120	390 1500	10 3 38	
January 26, 2002	15:40	0	0	0	0	35	102	390 1500	10 3 38	
January 31, 2002	7:00	0	0	0	0	35	102	390 1500	10 3 38	
February 8, 2002	9:45	0	0	0	0	15	90	390 1500	10 3 38	
February 12, 2002	7:00	0	0	0	0	34	104	390 1500	10 3 38	
February 27, 2002	13:15	0	0	0	0	32	100	390 1500	10 3 38	
March 8, 2002	16:40	0	0	0	0	32	130	390 1500	10 3 38	
March 18, 2002	9:30	0	0	0	0	55	130	390 1500	10 3 38	
March 28, 2002	13:30	0	0	0	0	55	130	390 1500	10 3 38	

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
125 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	HAA GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min) Influent	Flow Velocity (ft/min) Effluent	System Vacuum and Pressure (in. water) Blower Knockout Discharge Drum	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5	
April 5, 2002	14:00	0	0	0	0	55	136	550	1250	11	4	37
April 9, 2002	17:30	0	0	0	0	65	124			10	4	38
April 16, 2002	8:45	0	0	0	0	55						
April 26, 2002	15:00	0	0	0	0	55						
May 2, 2002	15:30	0	0	0	0	60	130	450	1450	11	4	38
May 8, 2002	15:30	0	0	0	0	60	130	550	1350	12	4	38
May 16, 2002	18:00	0	0	0	0	65	148	500	1250	12	5	37
May 20, 2002	12:30	0	0	0	0	60	130	500	1400	12	4	38
May 22, 2002	16:10	0	0	0	0	70	138	450	1250	12	5	38
May 31, 2002	16:30	0	0	0	0	70	144	425	1250	12	5	37
June 5, 2002	13:00	0	0	0	0	60	136	500	1300	12	4	36
June 12, 2002	12:30	0	0	0	0	70	131	500	1300	13	4	38
June 19, 2002	14:00	0	0	0	0	75	144	425	1250	13	4.5	35
June 27, 2002	11:30	0	0	0	0	85	158			14	5	34
July 3, 2002	15:30	0	0	0	0	90	172			15	5	34
July 6, 2002	12:00	0	0	0	0	80	158	800	1250	16	4.5	34
July 19, 2002	15:30	0	0	0	0	75	155	500	1100	17	4.5	32
July 24, 2002	14:00	0	0	0	0	70	150	1000	1500	20	4.5	32
July 30, 2002	12:30	0	0	0	0	85	174	500	1000	22	5	34
August 9, 2002	14:15	0	0	0	0	90	170	500	1100	25	5	30
August 16, 2002	12:30	0	0	0	0	90	162			26	4.5	28
August 23, 2002	18:00	0	0	0	0	85	172	420	1100	27	5	26
August 27, 2002	12:20	0	0	0	0	90						
September 11, 2002	14:00	0	0	0	0	70	170			30	4.5	28
September 12, 2002	14:00	0	0	0	0	55	141	140	1200	31	4.5	23
October 4, 2002	14:45	0	0	0	0	60	150			30	4	27
October 6, 2002	8:30	0	0	0	0	60						
October 14, 2002	12:00	0	0	0	0	46	140			32	4	28
October 25, 2002	15:30	0	0	0	0	60	138			30	4	26
October 28, 2002	16:30	0	0	0	0	30	124			30	4	27
November 2, 2002	11:30	0	0	0	0	40	138			32	4	27
December 2, 2002	13:30	0	0	0	0	35	122	450	1150	34	4	28
December 13, 2002	15:00	0	0	0	0	40	128			32	3	26
December 17, 2002	15:45	0	0	0	0	40	139			32	2	24
December 27, 2002	15:30	0	0	0	0	35	116			32	1	25
December 31, 2002	15:30	0	0	0	0	30	120			34	2	25
January 10, 2003	14:00	0	0	0	0	35	128					
January 14, 2003	14:00	0	0	0	0	40						
January 20, 2003	10:30	0	0	0	0	10	116			32	2	26
January 26, 2003	10:30	0	0	0	0	35	116			32	1	25
January 29, 2003	12:45	0	0	0	0	30	120			34	2	26
February 7, 2003	16:00	0	0	0	0	30				34	2	26
February 10, 2003	11:30	0	0	0	0	35	128					
February 21, 2003	12:00	0	0	0	0	40				34	3	24
February 26, 2003	12:00	0	0	0	0							
March 17, 2003	13:00	0	0	0	0	50	120	500	1250	8	3	40
March 18, 2003	13:30	0	0	0	0	56	120	500	1250	8	3	40
March 24, 2003	11:00	0	0	0	0	55	120	500	1250	8	3	40
March 25, 2003	13:30	0	0	0	0	60	135	500	1250	8	3	40
March 26, 2003	15:00	0	0	0	0	38	120	500	1250	8	2	40
March 31, 2003	12:30	0	0	0	0	45	122	500	1250	8	3	40
April 4, 2003	17:30	0	0	0	0	45		300	>6000	5	0	64
April 7, 2003	12:20	0	0	0	0					4	0	65
April 8, 2003	12:00	0	0	0	0					3	0	65
April 9, 2003	14:00	0	0	0	0	60	135	490	1400	8.5	5	40
April 11, 2003	17:00	0	0	0	0	50				8.5	5	40
April 14, 2003	17:30	0	0	0	0	50	135			8.5	5	40
April 17, 2003	16:00	0	0	0	0	60	140			8.5	5	40
April 25, 2003	13:55	0	0	0	0	50	125			8.5	5	40
April 26, 2003	7:30	0	0	0	0							

System Down, would not re-start  
Motor replaced, system re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

System Down, re-started

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
178 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Influent Concentration H <sub>2</sub> (ppm)	Influent Concentration H <sub>2</sub> GC (ppm)	Effluent Concentration Effluent - 1 (ppm)	Effluent Concentration Effluent - 2 (ppm)	Outdoor Temp	Outdoor Vapor Temp	Pipe Velocity (ft/min) Influent	Pipe Velocity (ft/min) Effluent	System Vacuum and Pressure (in. water) Blower	Knockout Drum	Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5	Notes
May 15, 2004	0.15		0	0	80	140			11	2	40		Electrician on site. System problems due to over heating. Installed inlet air vent adjacent to blower.
May 20, 2004	11.30		0	0	80	146	300	1200	11	2	40		
May 25, 2004	11.30	0	0	0	50	123	250	1100	11	4	40		
June 4, 2004	12.15	0	0	0	80	137			11.5	6	39		System down, restarted.
June 8, 2004	17.20	0	0	0	80	130			11.5	8	40		
June 10, 2004	18.45	0	0	0	80	142	375	1200	11	5	39		
June 17, 2004	14.00	0	0	0	80	150	400	1200	11	5	40		
June 21, 2004	5.00	0	0	0	80	132	400	1200	11	5	40		
June 28, 2004	12.30	0	0	0	80	144	400	1200	11	5	40		
July 8, 2004	6.45	0	0	0	70	140	425	1200	11	5	40		
July 14, 2004	5.15	0	0	0	70	140	425	1200	11	5	40		
July 23, 2004	5.90	0	0	0	70	118	475	1250	11.5	5	40		System down, restarted. Vent fan installed in trailer.
July 30, 2004	10.00	0	0	0	80	132	500	1250	11.5	5	40		
August 5, 2004	5.00	0	0	0	70	140	500	1250	11.5	5	40		
August 10, 2004	18.15	0	0	0	80	120	500	1250	11.5	5	39		
August 19, 2004	6.00	0	0	0	80	124	350	1250	12	5	30		
August 26, 2004	5.45	0	0	0	70	114	300	1250	11	5	40		
August 31, 2004	11.20	0	0	0	80	132	350	1250	11.5	5.5	40		
September 10, 2004	6.15	0	0	0	80	122	325	1300	12	5	40		
September 14, 2004	13.10	0	0	0	80	122	375	1250	11.5	5	40		
September 23, 2004	3.50	0	0	0	80	143	350	1250	11	5	40		
September 28, 2004	18.30	0	0	0	80	100	300	1250	11	5	41		
October 7, 2004	9.45	0	0	0	40	100	500	1250	11	5	40		
October 14, 2004	8.20	0	0	0	50	110	500	1250	11	5	40		
October 21, 2004	6.00	0	0	0	40	86	300	1250	11	5	42		
October 27, 2004	18.00	0	0	0	70	112	300	1250	11	5	40		
November 4, 2004	8.15	0	0	0	80	98	475	1250	11	5	42		
November 11, 2004	8.00	0	0	0	40	88	475	1250	11	5	41		
November 15, 2004	10.00	0	0	0	40	100	475	1250	11	5	41		
November 26, 2004	9.00	0	0	0	50	100	450	1250	11	5	41		
November 30, 2004	15.30	0	0	0	40	98	400	1250	11	4.5	41		
December 6, 2004	11.40	0	0	0	20	85	400	1250	11	4.5	42		
December 16, 2004	8.00	0	0	0	20	78	400	1250	11	4	41		
December 20, 2004	14.45	0	0	0	10	76	400	1250	11	4	41		
December 28, 2004	17.45	0	0	0	30	84	400	1250	11	4	41		
January 7, 2005	5.30	0	0	0	23	88	300	1250	11	4	41		
January 13, 2005	5.15	0	0	0	30	88	400	1250	11	4	42		
January 20, 2005	6.20	0	0	0	10	78	400	1250	11	4	41		
January 25, 2005	12.15	0	0	0	20	90			9	3	37		System off, restarted. No access to inlet velocity ports due to large snow bank.
February 2, 2005	14.30	0	0	0	30	98	400		5	5	41		System off, restarted. No access to inlet velocity ports due to large snow bank.
February 7, 2005	11.20	0	0	0	40	96	400		5	5	40		System off, restarted. No access to inlet velocity ports due to large snow bank.
February 17, 2005	5.15	0	0	0	20	98	400		5	5	40		System off, restarted. No access to inlet velocity ports due to large snow bank.
February 24, 2005	11.45	0	0	0	30	95	400	1250	8	5	42		
February 28, 2005	5.15	0	0	0	20	78	350	1200	9	4.5	42		
March 9, 2005	7.45	0	0	0	10	70			0.5	4	41		
March 15, 2005	14.30	0	0	0	40	100	350	1200	10	5	42		
March 21, 2005	5.10	0	0	0	30	92	350	1200	11	5	42		
March 30, 2005	10.30	0	0	0	50	108	200	1200	11	5	42		
April 6, 2005	5.20	0	0	0	40	100	350	1200	12	5	41		
April 12, 2005	19.30	0	0	0	40	92	400	1225	11.5	5	42		
April 20, 2005	5.45	0	0	0	40	111	300	1200	11.5	4.5	41		
April 21, 2005	6.00	0	0	0	40								System off, restarted.
April 23, 2005	11.00	0	0	0	40	105	300	1200		5	41		
April 25, 2005	5.45	0	0	0	40	98	350	1200	11.5	4.5	42		
May 4, 2005	5.30	0	0	0	40	96	350	1200	11.5	4.5	41		
May 13, 2005	5.45	0	0	0	40	104	350	1200	11.5	4.5	41		
May 18, 2005	5.30	0	0	0	40	98	350	1200	11.5	4.5	41		
May 25, 2005	14.30	0	0	0	40	98	400	1200	11.5	4.5	41		

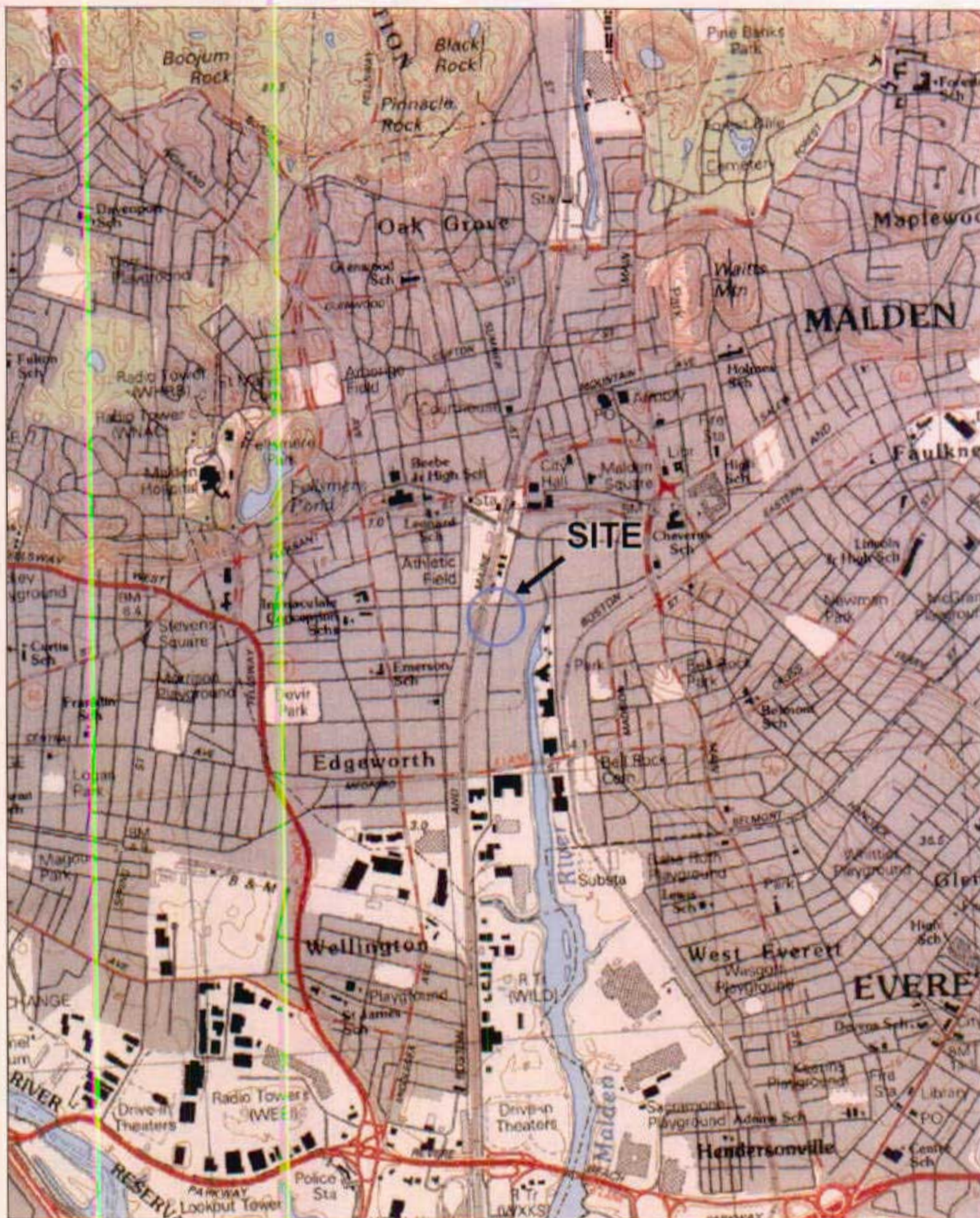
TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
120 COMMERCIAL STREET, PARCEL B OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	Influent Concentrations PID (ppm)	HMA GC (ug/L)	Effluent Concentrations Effluent - 1 (ppm)	Effluent - 2 (ppm)	Outdoor Temp	Outlet Vapor Temp	Flow Velocity (ft/min)	Influent	Effluent	System Vacuum and Pressure (in. water)	Blower Knockout	Discharge	Vacuum at Extraction Points (in. water) EP-1 EP-2 EP-3 EP-4 EP-5
May 31, 2005	5:00	0		0	0	40	104	400	1200	11.5	4.5	41		
June 7, 2005	5:30	0		0	0	60	120	350	1200	12	5	40		System off, changed fuse and restarted.
June 14, 2005	5:00	0		0	0	80	108	350	1200	12	5	40		System off, restarted.
June 23, 2005	8:30	0		0	0	80	119	300	1100	12	5	40		System off at 5:30 am, restarted.
June 27, 2005	5:15	0		0	0	80	94	300	1100	12	5	40		System off, restarted.
June 28, 2005	5:28	0		0	0	90	132	400	1150	12	5	40		System off, restarted.
July 5, 2005	5:30	0	8	0	0	70	100	300	1200	12	5	40		System off, changed fuse and restarted.
July 12, 2005	5:30	0		0	0	80	116	300	1200	12	5	40		System off at 5:30 am and 1730 pm, system restarted.
July 18, 2005	5:30	0		0	0	80	136	300	1200	12	5	40		System off, restarted.
July 20, 2005	5:05	17.3K		0	0	90	145	300	1200	12	5	40		System off, restarted.
July 21, 2005	5:00	0		0	0	70	108	300	1100	12	5	40		System off, would not restart.
July 25, 2005	7:00	0		0	0	80	120	250	1250	12	5	38		Electrician on site, replaced two components of control panel, restarted system.
July 27, 2005	7:15	0		0	0	80	120	250	1250	12	5	38		
August 2, 2005	5:30	0		0	0	80	120	350	1200	12	5	40		
August 4, 2005	11:00	0		0	0	80	132	350	1200	12	5	40		
August 8, 2005	19:15	0		0	0	80	140	350	1200	12	5	40		
August 16, 2005	6:00	0		0	0	70	134	350	1200	12	5	40		
August 24, 2005	5:30	0		0	0	80	122	350	1200	12	5	40		
August 31, 2005	10:45	0		0	0	80	134	350	1200	12	5	40		
September 7, 2005	5:30	0		0	0	80	125	350	1200	12	5	40		
September 15, 2005	5:30	0		0	0	70	124	350	1200	12	5	40		
September 23, 2005	5:30	0		0	0	70	124	350	1200	12	5	40		
September 25, 2005	7:15	0		0	0	70	123	450	1300	12	5	40		
October 7, 2005	6:00	0		0	0	70	124	500	1400	12	5	40		
October 12, 2005	6:00	0		0	0	40	122	500	1300	12	5	40		
October 18, 2005	7:00	0		0	0	50	123	400	1250	12	5	40		
October 28, 2005	3:30	0		0	0	30	120	400	1250	12	5	40		
October 31, 2005	6:15	0		0	0	40	120	400	1250	12	5	40		
November 6, 2005	6:00	0		0	0	40	120	400	1250	12	5	40		
November 16, 2005	12:30	0		0	0	50	122	475	1250	12	5	40		
November 21, 2005	5:30	0		0	0	50	121	450	1250	12	5	40		
November 30, 2005	5:00	0		0	0	50	120	450	1250	12	5	40		
December 7, 2005	9:00	0		0	0	50	108	450	1400	12	5	40		
December 15, 2005	5:30	0		0	0	20	115	400	1300	12	5	40		
December 19, 2005	12:40	0		0	0	30	116	400	1300	12	5	40		
December 28, 2005	9:30	0		0	0	40	120	450	1400	12	5	40		
January 2, 2006	10:30	0		0	0	30	114	450	1300	12	5	40		
January 11, 2006	5:30	0		0	0	50	120	450	1400	12	5	40		
January 20, 2006	5:30	0		0	0	30	118	450	1400	12	5	40		
January 25, 2006	10:15	0		0	0	40	118	500	1400	12	5	40		
February 7, 2006	9:45	0		0	0	40	120	475	1400	12	5	40		
February 14, 2006	12:00	0		0	0	50	118	475	1400	12	5	40		
February 24, 2006	5:30	0		0	0	20	105	450	1400	12	5	40		
February 27, 2006	9:50	0		0	0	10	98	450	1400	12	5	40		
March 7, 2006	8:45	0		0	0	30	113	450	1450	11.5	4.5	41		0.04 0.9 0.5 0.7 1.8 New Blower unit installed on 3-7-06
March 8, 2006	9:45	0		0	0	30	110	400	1400	10	4	40		0.04 0.85 0.4 0.6 1.9
March 16, 2006	5:45	0		0	0	50	123	400	1400	10	5	40		
March 24, 2006	15:00	0		0	0	50	134	400	1500	10	4	40		
March 27, 2006	8:45	0		0	0	50	118	400	1500	10	4.5	40		
April 6, 2006	6:30	0		0	0	50	115	400	1500	10	5	40		
April 10, 2006	15:15	0		0	0	50	90	400	1500	10	5	40		
April 25, 2006	15:00	0		0	0	50	140	375	1400	10	5	40		
May 31, 2006	13:15	0		0	0	80	139	350	1400	10	4.5	40		
June 28, 2006	10:30	0		0	0	70	135	400	1250	10	5	40		
July 27, 2006	6:00	0		0	0	80	135	300	1250	11	5	41.5		
August 31, 2006	5:30	0		0	0	80	120	300	1250	10	5	47		

TABLE III  
SUB-SLAB VENTING SYSTEM MONITORING DATA  
128 COMMERCIAL STREET, PARCEL 8 OF FORMER MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

Monitoring Date	Time	HMA Concentration (HMA GC Effluent - Reagent -)			Outdoor Temp	Cullet Vapor Temp	Flow Velocity (ft/min)		Pen Vacuum and Pressure (in. Hg)	Vacuum at Extraction Points (in. Hg)				
		PID (ppm)	HMA GC Effluent (ppm)	Reagent - (ppm)			Effluent	Effluent		EP-1	EP-2	EP-3	EP-4	EP-5
September 11, 2006	16:05	-	-	-	60	100	-	-	11	5	44	-	-	-
September 20, 2006	9:30	-	-	-	70	123	300	1250	10	5	43	System off, changed fuse and restarted.	0.39	1.9
September 26, 2006	5:30	0	0	0	50	132	400	1300	10	5	45	-	-	-
October 30, 2006	12:15	0	0	0	40	126	500	1400	10	5	44	System off, changed fuse and restarted	-	-
November 1, 2006	11:30	-	-	-	-	126	-	-	10	5	44	System off, restarted.	-	-
November 29, 2006	5:30	0	0	0	50	130	350	1400	10	5	48	-	-	-
December 16, 2006	5:30	0	0	0	30	88	350	1350	10	4	40	-	-	-
January 25, 2007	9:00	0	0	0	30	90	400	1400	10	3	50	-	-	-
February 22, 2007	13:15	-	-	-	40	-	-	-	-	-	-	System off, would not restart	-	-
February 28, 2007	14:15	0	0	0	40	134	350	1400	10	5	46	Electrician Repaired Overhead Relay within Cullet Panel on 2-27-2007. System Resumed in p.m. of 2-27-2007.	0.04	0.05
March 14, 2007	5:45	0	0	0	40	130	350	1400	10	5	46	-	0.05	1.2





SITE COORDINATES: 42°25'23"N 71°4'30"W

**HALEY & ALDRICH**

FORMER MALDEN MGP SITE, PARCEL B  
129 COMMERCIAL STREET  
MALDEN, MASSACHUSETTS

# PROJECT LOCUS

SCALE: 1:24,000  
APRIL 2007

FIGURE 1



U.S.G.S. QUADRANGLE: BOSTON NORTH, MA



Haley & Aldrich, Inc.  
800 Connecticut Blvd.  
Suite 100  
East Hartford, CT 06108-7303

Tel: 860.282.9400  
Fax: 860.282.9500  
HaleyAldrich.com

**HALEY &  
ALDRICH**

**Letter of Transmittal**

Date 12 April 2007  
File Number 06558-711  
From Richard J. Rago

---

To Massachusetts DEP - Northeast Regional Office  
205B Lowell Street  
Wilmington, MA 01887

Attention Data entry

Copy to file

Subject 129 Commercial Street  
Malden, MA  
RTN 3-0362 and linked RTN 3-3757

---

Copies	Date	Description
1	4/7/07	RAM Status Report No. 18
1	4/12/07	eDEP Form; BWSC-106, 106A, and 106B

Last entry

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Transmitted via ☐ First class mail ☒ Overnight express ☐ Hand delivery ☐ Other

---

**Remarks**

If you have any questions, please call me at 860-290-3115

**RECEIVED**

APR 13 2007

DEP  
NORTHEAST REGIONAL OFFICE



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 4C.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: BOSTON GAS COMPANY MALDEN PLANT

2. Street Address: 100 COMMERCIAL ST

3. City/Town: MALDEN

4. ZIP Code: 02148-0000

5. UTM Coordinates: a. UTM N: 469889 b. UTM E: 670637

☒ 6. 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

7. If a Tier I Permit has been issued, provide Permit Number: 7378

NORTHEAST REGIONAL OFFICE

DEP

APR 13 2007

RECEIVED

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

1. List Submittal Date of Initial RAM Plan (if previously submitted): 07/02/1998

(mm/dd/yyyy)

☐ 2. Submit an Initial Release Abatement Measure (RAM) Plan.

a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) ☐ i. School ☐ ii. Residential ☐ iii. Commercial

☐ iv. Industrial ☐ v. Other Specify: \_\_\_\_\_

☐ 3. Submit a Modified RAM Plan of a previously submitted RAM Plan.

☒ 4. Submit a RAM Status Report.

☒ 5. Submit a Remedial Monitoring Report. (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) ☒ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Number of Remedial Systems and/or Monitoring Programs: 1

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 6. Submit a RAM Completion Statement.

☐ 7. Submit a Revised RAM Completion Statement.

8. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal.

☐ - ☐ ☐ - ☐

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



**RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM**

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

**C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:**

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 all sources of the Release or Threat of Release, if known: (check all that apply)

- ☐ a. Above-ground Storage Tank (AST) ☐ b. Boat/Vessel ☐ c. Drums ☐ d. Fuel Tank  
☐ e. Pipe/Hose/Line ☐ f. Tanker Truck ☐ g. Transformer ☐ h. Under-ground Storage Tank (UST)  
☐ i. Vehicle ☒ j. Others Specify: **FORMER MGP OPERATIONS**

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

- ☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals  
☒ d. Others Specify: **MGP CONTAMINANTS: VOCs, PAHS, CYANIDE**

**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 checked="" type="checkbox"/> 5. Structure Venting System              | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery                         | <input type="checkbox"/> 8. Fencing and Sign Posting                        |
| <input type="checkbox"/> 9. Groundwater Treatment Systems                    | <input type="checkbox"/> 10. Soil Vapor Extraction                          |
| <input type="checkbox"/> 11. Bioremediation                                  | <input type="checkbox"/> 12. Air Sparging                                   |



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

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

☐ 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

lia. Receiving Facility:

Town:

State:

iib. Receiving Facility:

Town:

State:

iii. Describe:

☐ b. Store

☐ i. On Site Estimated volume in cubic yards

☐ ii. Off Site Estimated volume in cubic yards

lia. Receiving Facility:

Town:

State:

iib. Receiving Facility:

Town:

State:

☐ 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 Materials

a. Specify Type and Volume:

TO DATE: 47 55-GAL DRUMS (APPROX. 7755 LBS) SPENT ACTIVATED CARBON

b. Receiving Facility:

CLEAN HARBORS

Town:

BRISTOL

State:

CT

c. Receiving Facility:

CLEAN HARBORS

Town:

BRAINTREE

State:

MA

☐ 16. Other Response Actions:

Describe:

☐ 17. Use of Innovative Technologies:

Describe:



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

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 a **Release Abatement Measure 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) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring 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 a **Release Abatement Measure Completion Statement** 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 #: 2242

2. First Name: RICHARD P

3. Last Name: STANDISH

4. Telephone: (860) 282-9400

5. Ext.:

6. FAX:

7. Signature: RICHARD P STANDISH

8. Date: 04/12/2007

(mm/dd/yyyy)

9. LSP Stamp:







Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

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RELEASE ABATEMENT MEASURE (RAM)  
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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

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: **MASS ELECTRIC CO DBA NATIONAL GRID**
3. Contact First Name: **MICHELE V** 4. Last Name: **LEONE**
5. Street: **25 RESEARCH DRIVE** 6. Title: **SR ENVMTL ENG**
7. City/Town: **WESTBOROUGH** 8. State: **MA** 9. ZIP Code: **01582-0000**
10. Telephone: **(508) 897-5702** 11. Ext.:  12. FAX:

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

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
- ☒ e. Other RP or PRP Specify: **OTHER PRPS**
- ☐ 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 RAM Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (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 a Release Abatement Measure.
- ☒ 4. 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.
- ☐ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.
- ☒ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection  
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RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, **MICHELE V. LEONE**, 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: **MICHELE V. LEONE**

Signature

3. Title: **SR ENVMTL ENG**

4. For: **MASS ELECTRIC CO DBA NATIONAL GRID**

(Name of person or entity recorded in Section F)

5. Date: **04/11/2007**

(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:)

Received by DEP on

4/12/2007 10:38:02 AM

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Bureau of Waste Site Cleanup

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RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number

3 - 362

Remedial System or Monitoring Program: 1 of: 1

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☒ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery

☐ ii. Soil Vapor Extraction/Bioventing

☐ iii. Vapor-phase Carbon Adsorption

☐ iv. Groundwater Recovery

☐ v. Dual/Multi-phase Extraction

☐ vi. Aqueous-phase Carbon Adsorption

☐ vii. Air Stripping

☐ viii. Sparging/Biosparging

☐ ix. Cat/Thermal Oxidation

☒ x. Other Describe: SUB-SLAB VENTILATION/DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface

☐ ii. To Groundwater (Injection)

☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section E5)

☐ i. Reactive Wall

☐ ii. Natural Attenuation

☐ iii. Other Describe:

2. Mode of Operation: (check one)

☒ a. Continuous

☐ b. Intermittent

☐ c. Pulsed

☐ d. One-time Event Only

☐ e. Other:

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW

☐ b. Groundwater Re-infiltration/Re-injection: (check one)

☐ i. Downgradient

☐ ii. Upgradient

☒ c. Vapor-phase Discharge to Ambient Air: (check one)

☒ i. Off-gas Controls

☐ ii. No Off-gas Controls

☐ d. Drinking Water Supply

☐ e. Surface Water (including Storm Drains)

☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal:

From: 10/07/2006

(mm/dd/yyyy)

To: 03/21/2007

(mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)

☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.

☐ ii. Other Describe:

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☒ b. Post-system Startup (after first month) or Monitoring Program:

☒ i. Monthly

☐ ii. Quarterly

☐ iii. Other Describe:

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☒ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one)

☐ a. Remediation General Permit

☐ b. Individual Permit

☐ c. Emergency Exclusion

Effective Date of Permit:

(mm/dd/yyyy)

☐ 2. MCP Performance Standard MCP Citations(s):

☒ 3. DEP Approval Letter Date of Letter: 06/09/1999

(mm/dd/yyyy)

☐ 4. Other Describe:



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

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RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Remedial System or Monitoring Program: 1 of: 1

Release Tracking Number

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D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:

b. Grade:

c. License No.:

d. License Exp. Date:

(mm/dd/yyyy)

☐ 2. Not Required

☒ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD:

(check all that apply)

☒ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 165

b. GW Recovered (gals):

c. NAPL Recovered (gals):

d. GW Discharged (gals):

e. Avg. Soil Gas Recovery Rate (scfm): 37.50

f. Avg. Sparging Rate (scfm):

☐ 2. Remedial Additives: (check all that apply)

☐ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

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RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number

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Remedial System or Monitoring Program: 1 of 1

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)  
(check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☒ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: 5 b. Total Number of Days of Unscheduled Shutdowns: 18

c. Reason(s) for Unscheduled Shutdowns: ELECTRICAL DIFFICULTIES WITH OVERLOAD RELAY, OVERHEATING, FUSE REPLACEMENT

☒ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: 2 b. Total Number of Days of Scheduled Shutdowns: 0

c. Reason(s) for Scheduled Shutdowns: PARTICULATE FILTER REPLACEMENT

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

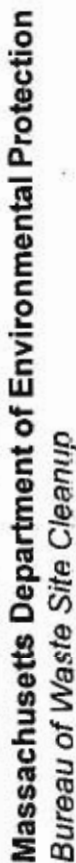
☒ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☒ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☒ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

☒ 5. Check here if additional/supporting information, data, maps, and/or sketches are attached to the form.



**BWSC106B**

Release Tracking Number

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# RAM REMEDIAL MONITORING REPORT EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0400 (SUBPART D)

Remedial System or Monitoring Program: 1 of 1

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

[illegible]

☐ Check here if an additional BWSC106B, Effluent/Discharge Concentrations Form, is needed.

## **Attachment H**

### **Section H - LSP Opinion**

Release Abatement Measure (RAM) Status Report No. 18  
Former Manufactured Gas Plant (MGP) Site  
Parcel B, 129 Commercial Street  
Malden, Massachusetts  
RTN 3-0362 and Linked RTN 3-3757  
Tier 1B Permit 7378

### **SECTION H(2): Orders, Permits, or Approvals on which the Response Actions are based**

The Response Action(s) on which this opinion is based is subject to the following approvals:

- ☐ Written approval of the associated RAM Plan was issued by DEP on 24 September 1998.
- ☐ Written conditional approval of the 9 April 1999 RAM Plan modification was issued by DEP on 9 June 1999.
- ☐ An Amendment of Conditional Approval was issued by DEP on 27 July 1999.



- LEGEND:**
- 7 ▲ DESIGNATION AND APPROXIMATE LOCATION OF INDOOR AND OUTDOOR AIR SAMPLES OBTAINED BY ENVIRONMENTAL HEALTH & ENGINEERING, INC. AND HALEY & ALDRICH, INC. FROM NOVEMBER 1997 THROUGH FEBRUARY 2007
  - 7 ■ DESIGNATION AND APPROXIMATE LOCATION OF INDOOR AIR SAMPLES OBTAINED BY OCCUHEALTH, INC., JUNE 1994
  - NO. 1 DESIGNATION AND APPROXIMATE LOCATION OF "T" BEAM COLUMN LOCATION
  - APPROXIMATE LIMITS OF EPOXY FLOOR SEALANT APPLICATION

- NOTES:**
1. BASE PLAN ADAPTED FROM TOPOGRAPHIC WORKSHEET OF THE MANUFACTURED GAS PLANT, MALDEN, MA FOR MASSACHUSETTS ELECTRIC COMPANY, WESTBOROUGH, MA, BY EASTERN TOPOGRAPHICS, WOLFEBORO, NH, SHEETS 1 AND 2, AT A SCALE OF 1 IN. EQUALS 40 FT., JUNE 1995, AND CITY OF MALDEN ASSESSOR'S PLAN SHEET NO. 53, BY FAY, SPOFFORD & THORNDIKE, INC., BOSTON, MA AT A SCALE OF 1 IN. EQUALS 40 FT., UPDATED JUNE 1976 AND REVISED 30 JULY 1979.
  2. INTERIOR FACILITY LAYOUT ADAPTED FROM UNDATED PLAN PROVIDED BY PIANTEDOSI BAKING COMPANY, FEBRUARY 1998.
  3. APPROXIMATE LOCATIONS OF INDOOR AIR SAMPLING LOCATIONS WERE DETERMINED BY HALEY & ALDRICH, INC.

**HALEY & ALDRICH**  
 FORMER MALDEN MGP SITE, PARCEL 8  
 129 COMMERCIAL STREET  
 MALDEN, MASSACHUSETTS

EXTRACTION WELL POINT AND  
 INDOOR AIR SAMPLE LOCATIONS

SCALE: AS SHOWN  
 APRIL 2007

FIGURE 2

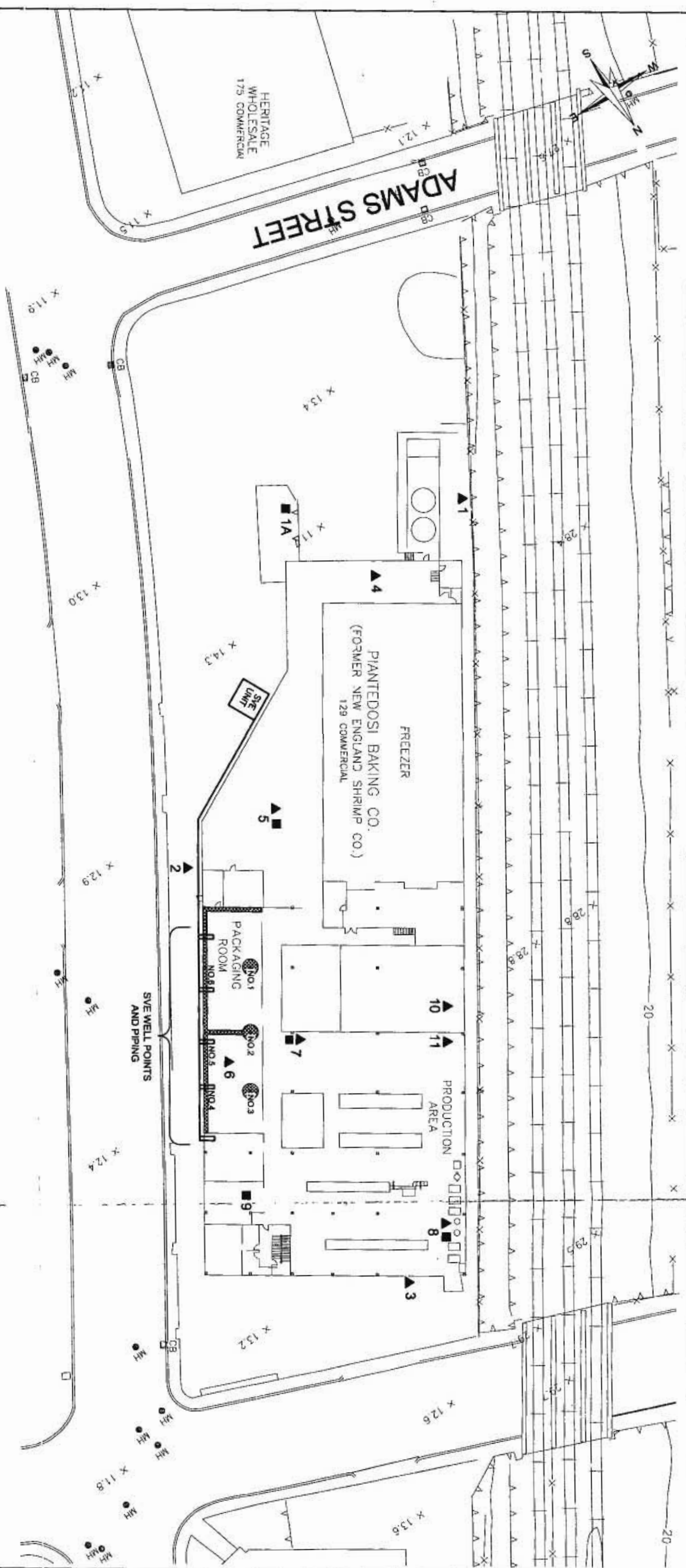


Figure 3 PID Measurements of Sub-Slab Vapor Influent

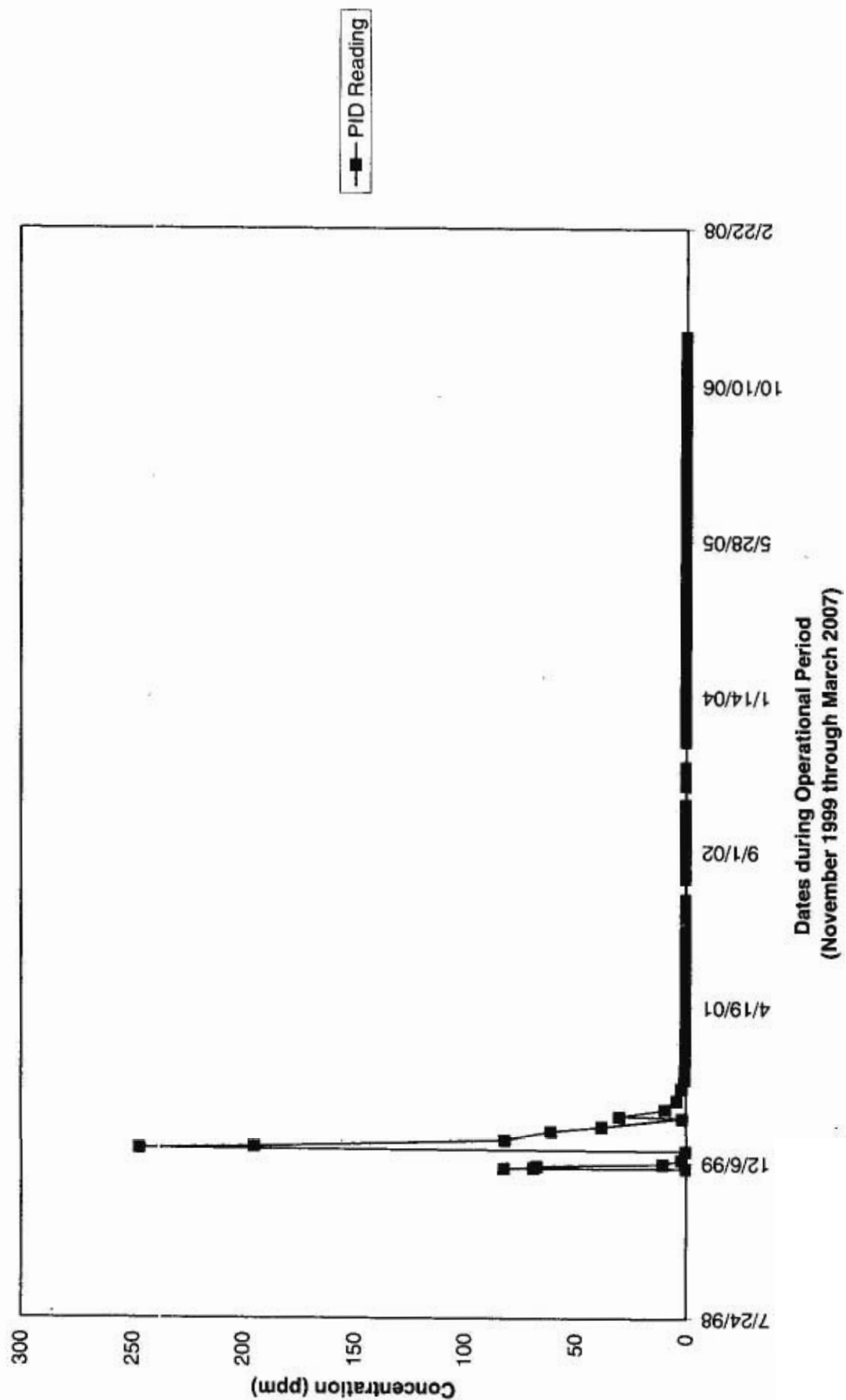
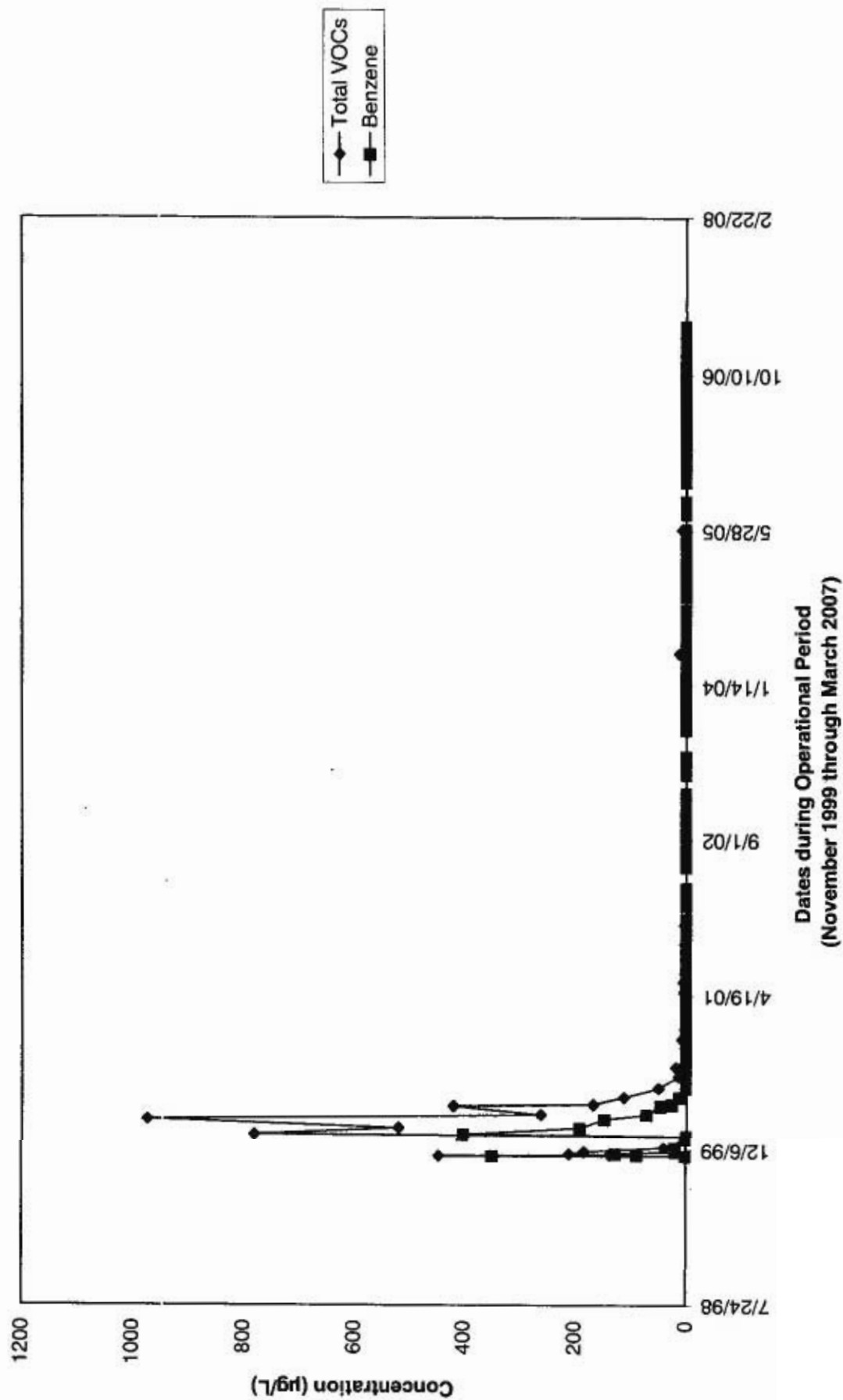




Figure 4 GC Analysis of Sub-Slab Vapor Influent



**APPENDIX A**

**Copy of Form BWSC-106 and  
RAM Remedial Monitoring Report**



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: BOSTON GAS COMPANY MALDEN PLANT

2. Street Address: 100 COMMERCIAL ST

3. City/Town: MALDEN

4. ZIP Code: 02148-0000

5. UTM Coordinates: a. UTM N: 4698895 b. UTM E: 670637

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

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

7. If a Tier I Permit has been issued, provide Permit Number: 7378

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

NORTHEAST REGIONAL OFFICE

1. List Submittal Date of Initial RAM Plan (if previously submitted): 07/02/1998

(mm/dd/yyyy)

☐ 2. Submit an Initial Release Abatement Measure (RAM) Plan.

a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) ☐ i. School ☐ ii. Residential ☐ iii. Commercial

☐ iv. Industrial ☐ v. Other Specify:

☐ 3. Submit a Modified RAM Plan of a previously submitted RAM Plan.

☒ 4. Submit a RAM Status Report.

☒ 5. Submit a Remedial Monitoring Report. (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) ☒ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Number of Remedial Systems and/or Monitoring Programs: 1

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 6. Submit a RAM Completion Statement.

☐ 7. Submit a Revised RAM Completion Statement.

8. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal.

☐ - ☐ ☐ - ☐

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



RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

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

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 all sources of the Release or Threat of Release, if known: (check all that apply)

- ☐ a. Above-ground Storage Tank (AST) ☐ b. Boat/Vessel ☐ c. Drums ☐ d. Fuel Tank  
☐ e. Pipe/Hose/Line ☐ f. Tanker Truck ☐ g. Transformer ☐ h. Under-ground Storage Tank (UST)  
☐ i. Vehicle ☒ j. Others Specify: **FORMER MGP OPERATIONS**

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

- ☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals  
☒ d. Others Specify: **MGP CONTAMINANTS: VOCS, PAHS, CYANIDE**

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 checked="" type="checkbox"/> 5. Structure Venting System              | <input type="checkbox"/> 6. Temporary Evacuation or Relocation of Residents |
| <input type="checkbox"/> 7. Product or NAPL Recovery                         | <input type="checkbox"/> 8. Fencing and Sign Posting                        |
| <input type="checkbox"/> 9. Groundwater Treatment Systems                    | <input type="checkbox"/> 10. Soil Vapor Extraction                          |
| <input type="checkbox"/> 11. Bioremediation                                  | <input type="checkbox"/> 12. Air Sparging                                   |



Massachusetts Department of Environmental Protection  
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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

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

☐ 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:

☐ 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 Materials

a. Specify Type and Volume:

TO DATE: 47 55-GAL DRUMS (APPROX. 7755 LBS) SPENT ACTIVATED CARBON

b. Receiving Facility: CLEAN HARBORS Town: BRISTOL State: CT

c. Receiving Facility: CLEAN HARBORS Town: BRAINTREE State: MA

☐ 16. Other Response Actions:

Describe:

☐ 17. Use of Innovative Technologies:

Describe:



RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

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Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

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 a **Release Abatement Measure 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) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring 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 a **Release Abatement Measure Completion Statement** 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 #: 2242

2. First Name: RICHARD P

3. Last Name: STANDISH

4. Telephone: (860) 282-9400

5. Ext.:

6. FAX:

7. Signature: RICHARD P STANDISH

8. Date: 04/12/2007

(mm/dd/yyyy)

9. LSP Stamp:







Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

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: **MASS ELECTRIC CO DBA NATIONAL GRID**
3. Contact First Name: **MICHELE V** 4. Last Name: **LEONE**
5. Street: **25 RESEARCH DRIVE** 6. Title: **SR ENVMTL ENG**
7. City/Town: **WESTBOROUGH** 8. State: **MA** 9. ZIP Code: **01582-0000**
10. Telephone: **(508) 897-5702** 11. Ext.:  12. FAX:

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

- ☒ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter
- ☒ e. Other RP or PRP Specify: **OTHER PRPS**
- ☐ 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 RAM Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

- ☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (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 a Release Abatement Measure.
- ☒ 4. 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.
- ☐ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA. 02211.
- ☒ 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

BWSC106

RELEASE ABATEMENT MEASURE (RAM)  
TRANSMITTAL FORM

Release Tracking Number

3 - 362

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, **MICHELE V. LEONE**, 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: **MICHELE V. LEONE**

Signature

3. Title: **SR ENVMTL ENG**

4. For: **MASS ELECTRIC CO DBA NATIONAL GRID**

(Name of person or entity recorded in Section F)

5. Date: **04/11/2007**

(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:)

Received by DEP on

4/12/2007 10:38:02 AM

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DEP  
NORTHEAST REGIONAL OFFICE



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106A

RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number

3 - 362

Remedial System or Monitoring Program: 1 of: 1

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☒ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery

☐ ii. Soil Vapor Extraction/Bioventing

☐ iii. Vapor-phase Carbon Adsorption

☐ iv. Groundwater Recovery

☐ v. Dual/Multi-phase Extraction

☐ vi. Aqueous-phase Carbon Adsorption

☐ vii. Air Stripping

☐ viii. Sparging/Biosparging

☐ ix. Cat/Thermal Oxidation

☒ x. Other Describe: SUB-SLAB VENTILATION/DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface

☐ ii. To Groundwater (Injection)

☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section E5)

☐ i. Reactive Wall

☐ ii. Natural Attenuation

☐ iii. Other Describe:

2. Mode of Operation: (check one)

☒ a. Continuous

☐ b. Intermittent

☐ c. Pulsed

☐ d. One-time Event Only

☐ e. Other:

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW

☐ b. Groundwater Re-infiltration/Re-injection: (check one)

☐ i. Downgradient

☐ ii. Upgradient

☒ c. Vapor-phase Discharge to Ambient Air: (check one)

☒ i. Off-gas Controls

☐ ii. No Off-gas Controls

☐ d. Drinking Water Supply

☐ e. Surface Water (including Storm Drains)

☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal:

From: 10/07/2006

(mm/dd/yyyy)

To: 03/21/2007

(mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)

☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.

☐ ii. Other Describe:

☒ b. Post-system Startup (after first month) or Monitoring Program:

☒ i. Monthly

☐ ii. Quarterly

☐ iii. Other Describe:

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NORTHEAST REGIONAL OFFICE

☒ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one)

☐ a. Remediation General Permit

☐ b. Individual Permit

☐ c. Emergency Exclusion

Effective Date of Permit:

(mm/dd/yyyy)

☐ 2. MCP Performance Standard

MCP Citations(s):

☒ 3. DEP Approval Letter Date of Letter: 06/09/1999

(mm/dd/yyyy)

☐ 4. Other Describe:



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106A

RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number

3 - 362

Remedial System or Monitoring Program: 1 of 1

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

- ☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.
- a. Name:  b. Grade:
- c. License No.:  d. License Exp. Date:  (mm/dd/yyyy)
- ☐ 2. Not Required
- ☒ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD:  
(check all that apply)

- ☒ 1. The Active Remedial System was functional one or more days during the Reporting Period.
- a. Days System was Fully Functional: 165 b. GW Recovered (gals):
- c. NAPL Recovered (gals):  d. GW Discharged (gals):
- e. Avg. Soil Gas Recovery Rate (scfm): 37.50 f. Avg. Sparging Rate (scfm):

☐ 2. Remedial Additives: (check all that apply)

- ☐ a. No Remedial Additives applied during the Reporting Period.
- ☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units



Massachusetts Department of Environmental Protection  
Bureau of Waste Site Cleanup

BWSC106A

RAM REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number

3 - 362

Remedial System or Monitoring Program: 1 of 1

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)

(check all that apply)

- ☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

- ☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

- ☒ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: 5 b. Total Number of Days of Unscheduled Shutdowns: 18

c. Reason(s) for Unscheduled Shutdowns: ELECTRICAL DIFFICULTIES WITH OVERLOAD RELAY, OVERHEATING, FUSE REPLACEMENT

- ☒ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: 2 b. Total Number of Days of Scheduled Shutdowns: 0

c. Reason(s) for Scheduled Shutdowns: PARTICULATE FILTER REPLACEMENT

- ☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

- ☒ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

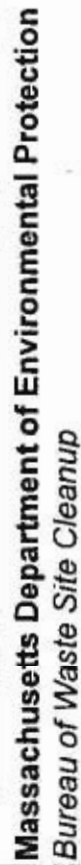
- ☒ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

- ☒ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

- ☒ 5. Check here if additional/supporting information, data, maps, and/or sketches are attached to the form.





BWSC106B

Release Tracking Number

362-3

# RAM REMEDIAL MONITORING REPORT EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0400 (SUBPART D)

Remedial System or Monitoring Program:

of: 1of: 1

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

[illegible]

☐ Check here if an additional **BWSC106B, Effluent/Discharge Concentrations Form**, is needed.

## **Attachment H**

### **Section H - LSP Opinion**

Release Abatement Measure (RAM) Status Report No. 18  
Former Manufactured Gas Plant (MGP) Site  
Parcel B, 129 Commercial Street  
Malden, Massachusetts  
RTN 3-0362 and Linked RTN 3-3757  
Tier 1B Permit 7378

### **SECTION H(2): Orders, Permits, or Approvals on which the Response Actions are based**

The Response Action(s) on which this opinion is based is subject to the following approvals:

- ☐ Written approval of the associated RAM Plan was issued by DEP on 24 September 1998.
- ☐ Written conditional approval of the 9 April 1999 RAM Plan modification was issued by DEP on 9 June 1999.
- ☐ An Amendment of Conditional Approval was issued by DEP on 27 July 1999.



## **APPENDIX B**

### **Indoor Air and Outdoor Air Analytical Data**

March 20, 2007

Mr. Richard J. Rago  
Haley & Aldrich, Inc.  
800 Connecticut Boulevard  
East Hartford, CT 06108-7303

RE: P2700555  
Malden MGP Site 129 Commercial St./06558-709

Dear Mr. Rago:

Enclosed are the results of the sample(s) submitted to our laboratory on March 2, 2007.  
For your reference, these analyses have been assigned our service request number P2700555.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report. Your report contains 14 pages.

Columbia Analytical Services is certified by the California Department of Health Services, Certificate No. 2380; Arizona Department of Health Services, Certificate No. AZ0694; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661. Please contact me for specific method(s) and analyte(s) corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.



Kate Aguilera  
Project Manager

## LABORATORY REPORT

Client:	HALEY & ALDRICH, INC.	Date of Report:	03/20/07
Address:	800 Connecticut Boulevard	Date Received:	03/02/07
	East Hartford, CT 06108-7303	CAS Project No:	P2700555
Contact:	Mr. Richard J. Rago	Purchase Order:	Verbal

Client Project ID: Malden MGP Site 129 Commercial St./06558-709

## Eight (8) Stainless Steel Summa Canisters labeled:

"Site 2"	"Site 4"	"Site 5"	"Site 6"
"Site 7"	"Site 7 (Dup)"	"Site 8"	"Site 11"

The samples were received at the laboratory under chain of custody on March 2, 2007. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

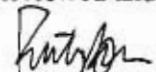
Volatile Organic Compound Analysis

The samples were analyzed by combined gas chromatography/mass spectrometry (GC/MS) for selected volatile organic compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of a Hewlett Packard Model 5973 GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT<sub>x</sub>-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation.

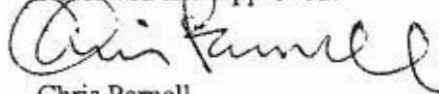
Higher volumes were not analyzed for the samples identified as "Site 6", "Site 7", "Site 7 (Dup)", "Site 8", and "Site 11" due to high concentration of ethanol in the samples. Ethanol was ~1000ng or more on column as analyzed.

The results of analyses are given on the attached data sheets. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Reviewed and Approved:

  
Rusty Bravo  
Analytical Chemist  
Air Quality Laboratory

Reviewed and Approved:

  
Chris Parnell  
GCMS-VOA Team Leader  
Air Quality Laboratory

2R

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley & Aldrich, Inc.  
Client Sample ID: Site 2  
Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555  
CAS Sample ID: P2700555-001

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/EP5973/HP6890/MS3  
Analyst: Rusty Bravo  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC01317

Date Collected: 2/28/07  
Date Received: 3/2/07  
Date(s) Analyzed: 3/14/07  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -4.1

Pf 1 = 3.5

Can D.F. = 1.72

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.7	1.7	0.86	0.54	
108-88-3	Toluene	5.4	1.7	1.4	0.46	
100-41-4	Ethylbenzene	ND	1.7	ND	0.40	
179601-23-1	<i>m,p</i> -Xylenes	3.5	1.7	0.81	0.40	
100-42-5	Styrene	ND	1.7	ND	0.40	
95-47-6	<i>o</i> -Xylene	ND	1.7	ND	0.40	
91-20-3	Naphthalene	ND	1.7	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: WJ Date: 3/16/07

Page No.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley & Aldrich, Inc.  
Client Sample ID: Site 4  
Client Project ID: Malden MGP Site 125 Commercial St./06558-709

CAS Project ID: P2700555  
CAS Sample ID: P2700555-002

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3  
Analyst: Rusty Bravo  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC01323

Date Collected: 2/28/07  
Date Received: 3/2/07  
Date(s) Analyzed: 3/14/07  
Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = -1.9

Pf 1 = 3.5

Can D.F. = 1.42

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	1.9	1.4	0.60	0.44	
108-88-3	Toluene	4.2	1.4	1.1	0.38	
100-41-4	Ethylbenzene	1.8	1.4	0.40	0.33	
179601-23-1	<i>m,p</i> -Xylenes	6.7	1.4	1.5	0.33	
100-42-5	Styrene	ND	1.4	ND	0.33	
95-47-6	<i>o</i> -Xylene	1.5	1.4	0.34	0.33	
91-20-3	Naphthalene	ND	1.4	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley &amp; Aldrich, Inc.

Client Sample ID: Site 5

Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555

CAS Sample ID: P2700555-003

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3

Analyst: Rusty Bravo

Sampling Media: Summa Canister

Test Notes:

Container ID: AC01321

Date Collected: 2/28/07

Date Received: 3/2/07

Date(s) Analyzed: 3/14/07

Volume(s) Analyzed: 1.00 Liter(s)

Pi 1 = 0.6

Pf 1 = 3.5

Can D.F. = 1.19

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	2.6	1.2	0.81	0.37	
108-88-3	Toluene	5.7	1.2	1.5	0.32	
100-41-4	Ethylbenzene	1.6	1.2	0.37	0.27	
179601-23-1	<i>m,p</i> -Xylenes	4.6	1.2	1.1	0.27	
100-42-5	Styrene	ND	1.2	ND	0.28	
95-47-6	<i>o</i> -Xylene	1.5	1.2	0.36	0.27	
91-20-3	Naphthalene	ND	1.2	ND	0.23	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.



## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley & Aldrich, Inc.  
Client Sample ID: Site 6  
Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555  
CAS Sample ID: P2700555-004

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3  
Analyst: Rusty Bravo  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC01312

Date Collected: 2/28/07  
Date Received: 3/2/07  
Date(s) Analyzed: 3/14/07  
Volume(s) Analyzed: 0.25 Liter(s)

Pi 1 = -6.7

Pf 1 = 3.5

Can D.F. = 2.28

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	9.1	ND	2.9	
108-88-3	Toluene	ND	9.1	ND	2.4	
100-41-4	Ethylbenzene	ND	9.1	ND	2.1	
179601-23-1	<i>m,p</i> -Xylenes	ND	9.1	ND	2.1	
100-42-5	Styrene	ND	9.1	ND	2.1	
95-47-6	<i>o</i> -Xylene	ND	9.1	ND	2.1	
91-20-3	Naphthalene	ND	9.1	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: **Haley & Aldrich, Inc.**  
Client Sample ID: **Site 7**  
Client Project ID: **Malden MGP Site 129 Commercial St./06558-709**

CAS Project ID: **P2700555**  
CAS Sample ID: **P2700555-005**

Test Code: **EPA TO-15**  
Instrument ID: **Tekmar AUTOCAN/HP5973/HP6890/MS3**  
Analyst: **Rusty Bravo**  
Sampling Media: **Summa Canister**  
Test Notes:  
Container ID: **AC01311**

Date Collected: **2/28/07**  
Date Received: **3/2/07**  
Date(s) Analyzed: **3/14/07**  
Volume(s) Analyzed: **0.060 Liter(s)**

Pi 1 = -3.7

Pf 1 = 3.5

Can D.F. = 1.65

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	28	ND	8.6	
108-88-3	Toluene	ND	28	ND	7.3	
100-41-4	Ethylbenzene	ND	28	ND	6.3	
179601-23-1	<i>m,p</i> -Xylenes	ND	28	ND	6.3	
100-42-5	Styrene	ND	28	ND	6.5	
95-47-6	<i>o</i> -Xylene	ND	28	ND	6.3	
91-20-3	Naphthalene	ND	28	ND	5.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley &amp; Aldrich, Inc.

Client Sample ID: Site 7 (Dup)

Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555

CAS Sample ID: P2700555-006

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3

Analyst: Rusty Bravo

Sampling Media: Summa Canister

Test Notes:

Container ID: AC00936

Date Collected: 2/28/07

Date Received: 3/2/07

Date(s) Analyzed: 3/14/07

Volume(s) Analyzed: 0.060 Liter(s)

Pi 1 = -3.6

Pf 1 = 3.5

Can D.F. = 1.64

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	27	ND	8.6	
108-88-3	Toluene	ND	27	ND	7.3	
100-41-4	Ethylbenzene	ND	27	ND	6.3	
179601-23-1	<i>m,p</i> -Xylenes	ND	27	ND	6.3	
100-42-5	Styrene	ND	27	ND	6.4	
95-47-6	<i>o</i> -Xylene	ND	27	ND	6.3	
91-20-3	Naphthalene	ND	27	ND	5.2	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley &amp; Aldrich, Inc.

Client Sample ID: Site 8

Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555

CAS Sample ID: P2700555-007

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3

Analyst: Rusty Bravo

Sampling Media: Summa Canister

Test Notes:

Container ID: AC00940

Date Collected: 2/28/07

Date Received: 3/2/07

Date(s) Analyzed: 3/15/07

Volume(s) Analyzed: 0.025 Liter(s)

Pi 1 = -0.9

Pf 1 = 3.5

Can D.F. = 1.32

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	53	ND	17	
108-88-3	Toluene	ND	53	ND	14	
100-41-4	Ethylbenzene	ND	53	ND	12	
179601-23-1	<i>m,p</i> -Xylenes	ND	53	ND	12	
100-42-5	Styrene	ND	53	ND	12	
95-47-6	<i>o</i> -Xylene	ND	53	ND	12	
91-20-3	Naphthalene	ND	53	ND	10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RVDate: 3/16/07

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley & Aldrich, Inc.  
Client Sample ID: Site 11  
Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555  
CAS Sample ID: P2700555-008

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3  
Analyst: Rusty Bravo  
Sampling Media: Summa Canister  
Test Notes:  
Container ID: AC01324

Date Collected: 2/28/07  
Date Received: 3/2/07  
Date(s) Analyzed: 3/15/07  
Volume(s) Analyzed: 0.030 Liter(s)

Pi 1 = -3.3

Pf 1 = 3.5

Can D.F. = 1.60

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	53	ND	17	
108-88-3	Toluene	ND	53	ND	14	
100-41-4	Ethylbenzene	ND	53	ND	12	
179601-23-1	<i>m,p</i> -Xylenes	ND	53	ND	12	
100-42-5	Styrene	ND	53	ND	13	
95-47-6	<i>o</i> -Xylene	ND	53	ND	12	
91-20-3	Naphthalene	ND	53	ND	10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

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Client: Haley &amp; Aldrich, Inc.

Client Sample ID: Method Blank

Client Project ID: Malden MGP Site 129 Commercial St./06558-709

CAS Project ID: P2700555

CAS Sample ID: P070314-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN HP5973/HP6890/MS3

Analyst: Rusty Bravo

Sampling Media: Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date(s) Analyzed: 3/14/07

Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.0	ND	0.31	
108-88-3	Toluene	ND	1.0	ND	0.27	
100-41-4	Ethylbenzene	ND	1.0	ND	0.23	
179601-23-1	<i>m,p</i> -Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	1.0	ND	0.23	
95-47-6	<i>o</i> -Xylene	ND	1.0	ND	0.23	
91-20-3	Naphthalene	ND	1.0	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.



## COLUMBIA ANALYTICAL SERVICES, INC.

## RESULTS OF ANALYSIS

Page 1 of 1

Client: Haley & Aldrich, Inc.  
Client Sample ID: Method Blank  
Client Project ID: Malden MGP Site 119 Commercial St./06558-709

CAS Project ID: P2700555  
CAS Sample ID: P070315-MB

Test Code: EPA TO-15  
Instrument ID: Tekmar AUTOCAN/HP5973/HP6890/MS3  
Analyst: Rusty Bravo  
Sampling Media: Summa Canister  
Test Notes:

Date Collected: NA  
Date Received: NA  
Date(s) Analyzed: 3/15/07  
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	1.0	ND	0.31	
108-88-3	Toluene	ND	1.0	ND	0.27	
100-41-4	Ethylbenzene	ND	1.0	ND	0.23	
179601-23-1	<i>m,p</i> -Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	1.0	ND	0.23	
95-47-6	<i>o</i> -Xylene	ND	1.0	ND	0.23	
91-20-3	Naphthalene	ND	1.0	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RV Date: 3/16/07

**Columbia Analytical Services, Inc.**  
**Sample Acceptance Check Form**

Client: Haley & Aldrich, Inc.

Work order: P2700555

Project: Malden MGP Site 129 Commercial St./06558-709

Sample(s) received on: 03/02/07

Date opened: 03/02/07

by: MZ

*Note:* This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		<u>Yes</u>	<u>No</u>	<u>N/A</u>
1	Were sample containers properly marked with client sample ID?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Did sample containers arrive in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Were chain-of-custody papers used and filled out?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Did sample container labels and/or tags agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Was sample volume received adequate for analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Are samples within specified holding times?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Was proper temperature (thermal preservation) of cooler at receipt adhered to?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Cooler Temperature <u>NA</u> °C			
	Blank Temperature <u>NA</u> °C			
8	Were custody seals on outside of cooler/Box?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were custody seals on outside of sample container?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Location of seal(s)? _____ Sealing Lid?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were signature and date included?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Is pH (acid) preservation necessary, according to method/SOP or Client specified information?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Is there a client indication that the submitted samples are pH (acid) preserved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Were <u>VOA vials</u> checked for presence/absence of air bubbles?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Tubes: Are the tubes capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Do they contain moisture?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Badges: Are the badges properly capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Are dual bed badges separated and individually capped and intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Lab Sample ID	Required pH (as received, if required)	pH (as received, if required)	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2700555-001			NA	
P2700555-002			NA	
P2700555-003			NA	
P2700555-004			NA	
P2700555-005			NA	
P2700555-006			NA	
P2700555-007			NA	
P2700555-008			NA	

Explain any discrepancies: (include lab sample ID numbers): \_\_\_\_\_



**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv] )														
28-Feb-07	Benzene	6.6	--	--	0.86	--	0.6	0.81	ND(2.9)	ND(8.6)	ND(17)	--	--	ND(17)
	Ethylbenzene	2.3	--	--	ND(0.4)	--	0.4	0.37	ND(2.1)	ND(6.3)	ND(12)	--	--	ND(12)
	m-&p-xylenes	8.3	--	--	0.81	--	1.5	1.1	ND(2.1)	ND(6.3)	ND(12)	--	--	ND(12)
	Naphthalene	1	--	--	ND(0.33)	--	ND(0.27)	ND(0.23)	ND(1.7)	ND(5.2)	ND(10)	--	--	ND(10)
	o-xylenes	8.3	--	--	ND(0.4)	--	0.34	0.36	ND(2.1)	ND(6.3)	ND(12)	--	--	ND(12)
	Styrene	0.7	--	--	ND(0.4)	--	ND(0.33)	ND(0.28)	ND(2.1)	ND(6.5)	ND(12)	--	--	ND(13)
	Toluene	7.7	--	--	1.4	--	1.1	1.5	ND(2.4)	ND(7.3)	ND(14)	--	--	ND(14)
19-Apr-06	Benzene	6.6	--	--	ND(0.47)	--	ND(0.32)	ND(0.36)	ND(7.6)	ND(6.4)	ND(0.53)	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.35)	--	0.29	0.35	ND(5.6)	ND(4.7)	ND(0.39)	--	--	--
	m-&p-xylenes	8.3	--	--	ND(0.7)	--	0.87	0.94	ND(11)	ND(9.4)	ND(0.78)	--	--	--
	Naphthalene	1	--	--	ND(0.29)	--	ND(0.19)	ND(0.22)	ND(4.6)	ND(3.9)	ND(0.32)	--	--	--
	o-xylenes	8.3	--	--	ND(0.35)	--	ND(0.23)	ND(0.26)	ND(5.6)	ND(4.7)	ND(0.39)	--	--	--
	Styrene	0.7	--	--	ND(0.36)	--	ND(0.24)	ND(0.27)	ND(5.7)	ND(4.8)	ND(0.4)	--	--	--
	Toluene	7.7	--	--	1	--	1.4	1.1	ND(6.4)	ND(5.4)	0.66	--	--	--
19-Jan-06	Benzene	6.6	--	--	ND(0.49)	--	ND(0.63)	ND(0.44)	ND(0.46)	ND(0.78)	ND(0.57)	--	--	ND(0.54)
	Ethylbenzene	2.3	--	--	ND(0.36)	--	ND(0.46)	ND(0.32)	ND(0.34)	ND(0.57)	ND(0.42)	--	--	ND(0.4)
	m-&p-xylenes	8.3	--	--	ND(0.36)	--	0.6	0.52	0.64	0.79	0.48	--	--	0.63
	Naphthalene	1	--	--	ND(0.3)	--	ND(0.38)	ND(0.27)	ND(0.28)	ND(0.48)	ND(0.35)	--	--	ND(0.33)
	o-xylenes	8.3	--	--	ND(0.36)	--	ND(0.46)	ND(0.32)	ND(0.34)	ND(0.57)	ND(0.42)	--	--	ND(0.4)
	Styrene	0.7	--	--	ND(0.37)	--	ND(0.47)	ND(0.33)	ND(0.35)	ND(0.59)	ND(0.43)	--	--	ND(0.41)
	Toluene	7.7	--	--	0.63	--	1.7	1.1	3.4	1.3	0.99	--	--	1.1

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
20-Oct-05	Benzene	6.6	--	--	ND(0.49)	--	ND(0.48)	ND(0.51)	ND(1.7)	ND(1.9)	ND(1.9)	--	--	ND(1.9)
	Ethylbenzene	2.3	--	--	ND(0.36)	--	ND(0.35)	ND(0.38)	ND(1.2)	ND(1.4)	ND(1.4)	--	--	ND(1.4)
	m-&p-xylenes	8.3	--	--	0.37	--	0.4	0.44	ND(1.2)	ND(1.4)	ND(1.4)	--	--	ND(1.4)
	Naphthalene	1	--	--	ND(0.3)	--	ND(0.29)	ND(0.31)	ND(1)	ND(1.1)	ND(1.1)	--	--	ND(1.1)
	o-xylenes	8.3	--	--	ND(0.36)	--	ND(0.35)	ND(0.38)	ND(1.2)	ND(1.4)	ND(1.4)	--	--	ND(1.4)
	Styrene	0.7	--	--	ND(0.37)	--	ND(0.36)	ND(0.39)	ND(1.3)	ND(1.4)	ND(1.4)	--	--	ND(1.4)
	Toluene	7.7	--	--	1	--	0.85	0.95	2.4	ND(1.6)	ND(1.6)	--	--	ND(1.6)
03-Aug-05	Benzene	6.6	--	--	ND(0.55)	--	ND(0.45)	ND(1.1)	ND(3.2)	ND(4.1)	--	--	--	ND(3.5)
	Ethylbenzene	2.3	--	--	ND(0.41)	--	0.38	ND(0.84)	ND(2.4)	ND(3)	--	--	--	ND(2.6)
	m-&p-xylenes	8.3	--	--	0.66	--	1.2	1.3	ND(2.4)	ND(3)	--	--	--	ND(2.6)
	Naphthalene	1	--	--	ND(0.34)	--	ND(0.27)	ND(0.69)	ND(2)	ND(2.5)	--	--	--	ND(2.1)
	o-xylenes	8.3	--	--	ND(0.41)	--	ND(0.33)	ND(0.84)	ND(2.4)	ND(3)	--	--	--	ND(2.6)
	Styrene	0.7	--	--	ND(0.42)	--	ND(0.34)	ND(0.86)	ND(2.4)	ND(3)	--	--	--	ND(2.6)
	Toluene	7.7	--	--	1.2	--	2.1	2	3	ND(3.4)	--	--	--	ND(3)
27-Apr-05	Benzene	6.6	--	--	ND(0.47)	--	ND(0.48)	ND(0.61)	ND(4.5)	ND(4.1)	ND(9.8)	--	--	ND(13)
	Ethylbenzene	2.3	--	--	ND(0.34)	--	ND(0.35)	ND(0.45)	ND(3.3)	ND(3)	ND(7.2)	--	--	ND(9.6)
	m-&p-xylenes	8.3	--	--	ND(0.34)	--	0.39	ND(0.45)	ND(3.3)	ND(3)	ND(7.2)	--	--	ND(9.6)
	Naphthalene	1	--	--	ND(0.28)	--	ND(0.29)	ND(0.37)	ND(2.7)	ND(2.5)	ND(6)	--	--	ND(8)
	o-xylenes	8.3	--	--	ND(0.34)	--	ND(0.35)	ND(0.45)	ND(3.3)	ND(3)	ND(7.2)	--	--	ND(9.6)
	Styrene	0.7	--	--	ND(0.35)	--	ND(0.36)	ND(0.46)	ND(3.4)	ND(3.1)	ND(7.4)	--	--	ND(9.8)
	Toluene	7.7	--	--	0.77	--	1.2	2	ND(3.8)	ND(3.5)	ND(8.3)	--	--	ND(11)

**APPENDIX B TABLE 1  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
13-Jan-05	Benzene	6.6	--	--	1.2	--	0.83	0.87	0.86	0.88	1.1	--	--	1.1
	Ethylbenzene	2.3	--	--	0.65	--	0.62	0.81	0.34	0.54	0.55	--	--	0.6
	m-&p-xylenes	8.3	--	--	1.3	--	1.5	2.4	0.62	1.4	1.5	--	--	1.6
	Naphthalene	1	--	--	ND(0.27)	--	ND(0.24)	ND(0.28)	ND(0.22)	ND(0.23)	ND(0.26)	--	--	ND(0.33)
	o-xylenes	8.3	--	--	0.64	--	0.51	0.59	0.29	0.4	0.48	--	--	0.49
	Styrene	0.7	--	--	ND(0.33)	--	ND(0.3)	ND(0.35)	ND(0.27)	ND(0.28)	0.35	--	--	ND(0.41)
	Toluene	7.7	--	--	4.9	--	4.3	4.2	4	2.7	3.3	--	--	3.4
26-Oct-04	Benzene	6.6	--	--	0.69	--	ND(0.52)	ND(0.48)	ND(0.56)	0.53	ND(0.46)	--	--	0.59
	Ethylbenzene	2.3	--	--	ND(0.33)	--	ND(0.38)	ND(0.35)	ND(0.41)	ND(0.36)	ND(0.34)	--	--	ND(0.36)
	m-&p-xylenes	8.3	--	--	0.83	--	0.74	1	0.71	0.93	0.67	--	--	0.8
	Naphthalene	1	--	--	ND(0.27)	--	ND(0.31)	ND(0.29)	ND(0.34)	ND(0.3)	ND(0.28)	--	--	ND(0.3)
	o-xylenes	8.3	--	--	ND(0.33)	--	ND(0.38)	ND(0.35)	ND(0.41)	ND(0.36)	ND(0.34)	--	--	ND(0.36)
	Styrene	0.7	--	--	ND(0.34)	--	ND(0.39)	ND(0.36)	ND(0.42)	ND(0.37)	ND(0.35)	--	--	ND(0.37)
	Toluene	7.7	--	--	1.8	--	1.8	2.4	3.3	1.8	1.3	--	--	1.8
06-Aug-04	Benzene	6.6	--	--	ND(0.58)	--	ND(1.1)	ND(1.1)	ND(10)	ND(11)	ND(1.1)	--	ND(11)	--
	Ethylbenzene	2.3	--	--	ND(0.42)	--	ND(0.8)	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	m-&p-xylenes	8.3	--	--	0.67	--	0.82	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	Naphthalene	1	--	--	ND(0.35)	--	ND(0.66)	ND(0.65)	ND(6.3)	ND(6.5)	ND(0.67)	--	ND(6.6)	--
	o-xylenes	8.3	--	--	ND(0.42)	--	ND(0.8)	ND(0.78)	ND(7.6)	ND(7.8)	ND(0.81)	--	ND(8)	--
	Styrene	0.7	--	--	ND(0.43)	--	ND(0.82)	ND(0.8)	ND(7.7)	ND(8)	ND(0.82)	--	ND(8.1)	--
	Toluene	7.7	--	--	1.3	--	2.4	2	ND(8.7)	ND(9)	0.95	--	ND(9.2)	--



**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
06-May-04	Benzene	6.6	--	--	ND(0.48)	--	ND(0.59)	0.52	ND(0.59)	ND(0.58)	ND(0.65)	--	ND(0.61)	--
	Ethylbenzene	2.3	--	--	ND(0.35)	--	ND(0.43)	0.4	ND(0.43)	0.47	ND(0.48)	--	ND(0.45)	--
	m-&p-xylenes	8.3	--	--	0.67	--	0.2	1	0.03	1.7	1.2	--	1.5	--
	Naphthalene	1	--	--	ND(0.29)	--	ND(0.36)	ND(0.3)	ND(0.36)	ND(0.35)	ND(0.4)	--	ND(0.37)	--
	o-xylenes	8.3	--	--	ND(0.35)	--	ND(0.43)	0.37	ND(0.43)	0.7	0.52	--	0.59	--
	Styrene	0.7	--	--	ND(0.36)	--	ND(0.44)	ND(0.37)	ND(0.44)	ND(0.43)	ND(0.49)	--	0.65	--
	Toluene	7.7	--	--	23	--	8.9	19	4.8	3.5	2.3	--	2.8	--
12-Feb-04	Benzene	6.6	--	--	6.5	--	ND(0.52)	ND(0.54)	ND(2.7)	ND(4)	ND(5.8)	--	ND(6.3)	--
	Ethylbenzene	2.3	--	--	3.9	--	ND(0.38)	ND(0.4)	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	m-&p-xylenes	8.3	--	--	12	--	0.47	0.68	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	Naphthalene	1	--	--	0.39	--	ND(0.32)	ND(0.33)	ND(1.7)	ND(2.5)	ND(3.5)	--	ND(3.8)	--
	o-xylenes	8.3	--	--	4.3	--	ND(0.38)	ND(0.4)	ND(2)	ND(3)	ND(4.3)	--	ND(4.6)	--
	Styrene	0.7	--	--	0.5	--	ND(0.39)	ND(0.41)	ND(2)	ND(3)	ND(4.4)	--	ND(4.7)	--
	Toluene	7.7	--	--	19	--	1.2	1.4	15	ND(3.4)	ND(4.9)	--	ND(5.3)	--
30-Oct-03	Benzene	6.6	--	--	0.61	--	ND(0.53)	ND(0.48)	--	ND(0.55)	ND(1.1)	--	ND(1.2)	--
	Ethylbenzene	2.3	--	--	ND(0.38)	--	ND(0.39)	0.56	--	ND(0.44)	ND(0.8)	--	ND(0.86)	--
	m-&p-xylenes	8.3	--	--	0.7	--	1.2	1.8	--	1.2	ND(0.8)	--	ND(0.86)	--
	Naphthalene	1	--	--	ND(0.31)	--	ND(0.32)	ND(0.29)	--	ND(0.34)	ND(0.66)	--	ND(0.71)	--
	o-xylenes	8.3	--	--	ND(0.38)	--	ND(0.39)	ND(0.35)	--	ND(0.41)	ND(0.8)	--	1.7	--
	Styrene	0.7	--	--	ND(0.38)	--	ND(0.4)	ND(0.36)	--	ND(0.45)	ND(0.81)	--	ND(0.87)	--
	Toluene	7.7	--	--	1.6	--	7.2	6.1	--	6.1	3.5	--	2.7	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
23-Jul-03	Benzene	6.6	ND(0.58)	--	--	--	ND(0.55)	ND(0.51)	ND(1.1)	ND(1.2)	ND(0.77)	--	ND(1.2)	--
	Ethylbenzene	2.3	ND(0.43)	--	--	--	ND(0.41)	ND(0.38)	ND(0.83)	ND(0.91)	ND(0.57)	--	ND(0.88)	--
	m-&p-xylenes	8.3	ND(0.43)	--	--	--	0.53	0.5	ND(0.93)	ND(0.91)	0.57	--	1.3	--
	Naphthalene	1	ND(0.35)	--	--	--	ND(0.34)	ND(0.31)	ND(0.69)	ND(0.76)	ND(0.47)	--	ND(0.73)	--
	o-xylenes	8.3	ND(0.43)	--	--	--	ND(0.41)	ND(0.38)	ND(0.83)	ND(0.91)	ND(0.57)	--	ND(0.88)	--
	Styrene	0.7	ND(0.44)	--	--	--	ND(0.42)	ND(0.39)	ND(0.85)	ND(0.93)	ND(0.58)	--	6.7	--
	Toluene	7.7	6.3	--	--	--	14	17	15	7.4	9.5	--	9.4	--
25-Apr-03	Benzene	6.6	--	--	ND(0.6)	--	ND(0.56)	ND(1.3)	ND(30)	ND(12)	ND(12)	--	ND(34)	--
	Ethylbenzene	2.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	m-&p-xylenes	8.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	Naphthalene	1	--	--	ND(0.37)	--	ND(0.34)	ND(0.76)	ND(18)	ND(7.5)	ND(7.6)	--	ND(20)	--
	o-xylenes	8.3	--	--	ND(0.44)	--	ND(0.41)	ND(0.92)	ND(22)	ND(9)	ND(9.1)	--	ND(25)	--
	Styrene	0.7	--	--	ND(0.45)	--	ND(0.42)	ND(0.94)	ND(22)	ND(9.2)	ND(9.3)	--	ND(25)	--
	Toluene	7.7	--	--	1.1	--	6.3	11	ND(25)	ND(10)	ND(11)	--	ND(28)	--
24-Jan-03	Benzene	6.6	--	--	0.6	--	ND(0.48)	ND(0.4)	ND(0.51)	ND(0.7)	ND(0.57)	--	ND(0.55)	--
	Ethylbenzene	2.3	--	--	ND(0.35)	--	ND(0.35)	ND(0.29)	ND(0.37)	ND(0.51)	ND(0.42)	--	ND(0.4)	--
	m-&p-xylenes	8.3	--	--	0.57	--	ND(0.35)	0.36	0.53	ND(0.51)	ND(0.42)	--	0.58	--
	Naphthalene	1	--	--	ND(0.29)	--	ND(0.29)	ND(0.24)	ND(0.31)	ND(0.42)	ND(0.35)	--	ND(0.33)	--
	o-xylenes	8.3	--	--	0.35	--	ND(0.35)	ND(0.29)	ND(0.37)	ND(0.51)	ND(0.42)	--	ND(0.9)	--
	Styrene	0.7	--	--	ND(0.36)	--	ND(0.36)	ND(0.3)	ND(0.38)	ND(0.52)	ND(0.43)	--	1	--
	Toluene	7.7	--	--	1.1	--	0.63	0.77	0.64	0.6	ND(0.48)	--	0.54	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv])														
08-Oct-02	Benzene	6.6	--	--	ND(0.71)	--	ND(0.37)	--	ND(0.66)	ND(0.62)	ND(0.62)	--	0.6	--
	Ethylbenzene	2.3	--	--	ND(0.53)	--	ND(0.27)	--	ND(0.49)	ND(0.46)	ND(0.46)	--	0.82	--
	m-&p-xylenes	8.3	--	--	0.36	--	0.59	--	0.49	ND(0.46)	ND(0.46)	--	1.4	--
	Naphthalene	1	--	--	ND(0.44)	--	ND(0.22)	--	ND(0.4)	ND(0.38)	ND(0.38)	--	ND(0.32)	--
	o-xylenes	8.3	--	--	ND(0.53)	--	ND(0.27)	--	ND(0.49)	ND(0.46)	ND(0.46)	--	0.57	--
	Styrene	0.7	--	--	ND(0.54)	--	ND(0.27)	--	ND(0.5)	ND(0.47)	ND(0.47)	--	5.5	--
	Toluene	7.7	--	--	1.2	--	6.5	--	12	2.3	1.8	--	2.5	--
25-Jun-02	Benzene	6.6	--	--	--	--	0.44	ND(0.31)	1.9	1.8	0.97	--	1.7	--
	Ethylbenzene	2.3	--	--	--	--	0.71	0.57	ND(0.23)	ND(0.23)	ND(0.46)	--	0.71	--
	m-&p-xylenes	8.3	--	--	--	--	2	1.5	0.6	0.68	0.68	--	1.3	--
	Naphthalene	1	--	--	--	--	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.38)	--	ND(0.19)	--
	o-xylenes	8.3	--	--	--	--	0.51	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	--	0.51	--
	Styrene	0.7	--	--	--	--	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.47)	--	4.7	--
	Toluene	7.7	--	--	--	--	9.2	13	11	5	2.3	--	2.2	--
10-Apr-02	Benzene	6.6	--	--	ND(0.31)	--	ND(0.31)	ND(0.31)	ND(6.3)	1.4	ND(6.3)	--	ND(6.3)	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	ND(0.23)	0.31	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	m-&p-xylenes	8.3	--	--	0.52	--	0.56	1	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	ND(3.8)	ND(0.38)	ND(3.8)	--	ND(3.8)	--
	o-xylenes	8.3	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(4.6)	ND(0.46)	ND(4.6)	--	ND(4.6)	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(4.7)	ND(0.47)	ND(4.7)	--	ND(4.7)	--
	Toluene	7.7	--	--	1.1	--	5.1	3.8	ND(5.3)	3	ND(5.3)	--	ND(5.3)	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv])														
10-Jan-02	Benzene	6.6	--	--	--	--	ND(0.31)	ND(0.63)	12	14	15	--	10	--
	Ethylbenzene	2.3	--	--	--	--	ND(0.23)	ND(0.46)	ND(0.92)	ND(0.92)	ND(1.8)	--	ND(1.8)	--
	m-&p-xylenes	8.3	--	--	--	--	4	4.1	ND(0.92)	ND(0.92)	ND(1.6)	--	ND(1.6)	--
	Naphthalene	1	--	--	--	--	ND(0.19)	ND(0.38)	ND(0.76)	ND(0.76)	ND(1.5)	--	ND(1.5)	--
	o-xylenes	8.3	--	--	--	--	ND(0.23)	ND(0.46)	ND(0.92)	ND(0.92)	ND(1.8)	--	ND(1.8)	--
	Styrene	0.7	--	--	--	--	ND(0.23)	ND(0.47)	ND(0.94)	ND(0.94)	ND(1.9)	--	2.1	--
	Toluene	7.7	--	--	--	--	5.2	5.1	10	3.5	2.8	--	2.9	--
11-Oct-01	Benzene	6.6	ND(0.31)	--	--	--	ND(0.31)	ND(0.63)	3.4	3.6	3.9	--	2.4	--
	Ethylbenzene	2.3	ND(0.23)	--	--	--	0.44	ND(0.46)	ND(0.23)	ND(0.23)	ND(0.46)	--	0.74	--
	m-&p-xylenes	8.3	ND(0.23)	--	--	--	1.3	0.81	0.64	0.58	0.68	--	1.2	--
	Naphthalene	1	ND(0.19)	--	--	--	ND(0.19)	ND(0.38)	ND(0.19)	ND(0.19)	ND(0.38)	--	ND(0.19)	--
	o-xylenes	8.3	ND(0.23)	--	--	--	0.45	ND(0.46)	ND(0.23)	ND(0.23)	ND(0.46)	--	0.51	--
	Styrene	0.7	ND(0.23)	--	--	--	ND(0.23)	ND(0.47)	ND(0.23)	ND(0.23)	ND(0.47)	--	3.7	--
	Toluene	7.7	1.1	--	--	--	5.5	4.6	8.3	2.9	2.1	--	2.2	--
01-Jul-01	Benzene	6.6	--	--	ND(0.63)	--	ND(0.63)	ND(0.63)	ND(0.63)	ND(0.63)	ND(0.63)	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.46)	--	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.46)	--	--	--
	m-&p-xylenes	8.3	--	--	ND(0.46)	--	ND(0.46)	ND(0.46)	0.47	0.5	ND(0.46)	--	--	--
	Naphthalene	1	--	--	ND(0.38)	--	ND(0.38)	ND(0.38)	ND(0.38)	0.32	ND(0.38)	--	--	--
	o-xylenes	8.3	--	--	ND(0.46)	--	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.46)	ND(0.46)	--	--	--
	Styrene	0.7	--	--	ND(0.47)	--	ND(0.47)	ND(0.47)	1.5	0.65	0.82	--	--	--
	Toluene	7.7	--	--	1.2	--	1.7	2.9	2.2	2.5	2.5	--	--	--

APPENDIX B TABLE 1  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
29-Jun-01	Benzene	6.6	--	--	ND(0.31)	--	0.68	2.1	9.9	11	11	--	9.6	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	1.5	0.85	ND(0.23)	ND(0.23)	ND(0.23)	--	2.5	--
	m-&p-xylenes	8.3	--	--	0.72	--	5.3	2.0	0.77	1	0.77	--	3.1	--
	Naphthalene	1	--	--	ND(0.19)	--	1.1	ND(0.19)	ND(0.19)	0.48	0.64	--	8	--
	o-xylenes	8.3	--	--	ND(0.23)	--	1.6	0.86	ND(0.23)	ND(0.23)	ND(0.23)	--	1.4	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	0.64	ND(0.23)	0.4	--	6	--
	Toluene	7.7	--	--	1.9	--	4.4	18	14	5.5	2.5	--	4.4	--
18-Mar-01	Benzene	6.6	--	--	ND(0.31)	--	ND(0.31)	ND(0.31)	ND(0.63)	ND(0.63)	ND(0.31)	--	5.1	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.23)	--	1.2	--
	m-&p-xylenes	8.3	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	0.72	0.74	0.95	--	3	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	ND(0.48)	ND(0.38)	ND(0.19)	--	ND(0.19)	--
	o-xylenes	8.3	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(0.46)	ND(0.46)	ND(0.23)	--	1.1	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	ND(0.47)	ND(0.47)	ND(0.23)	--	3.4	--
	Toluene	7.7	--	--	ND(0.27)	--	1.1	1.2	4.1	6.8	17	--	9.5	--
16-Mar-01	Benzene	6.6	--	--	1.3	--	20	ND(0.31)	7.6	9.3	13	--	8.2	--
	Ethylbenzene	2.3	--	--	2.1	--	62	0.65	ND(0.23)	0.4	0.42	--	0.96	--
	m-&p-xylenes	8.3	--	--	3.6	--	48	2.3	1.2	1.2	1.3	--	2.5	--
	Naphthalene	1	--	--	4.4	--	49	ND(0.19)	ND(0.19)	0.59	0.51	--	ND(0.19)	--
	o-xylenes	8.3	--	--	1.8	--	20	0.55	0.53	ND(0.23)	0.62	--	1.6	--
	Styrene	0.7	--	--	0.39	--	8.7	ND(0.23)	ND(0.23)	ND(0.23)	0.31	--	3	--
	Toluene	7.7	--	--	6.5	--	60	5.7	17	6.2	26	--	9.1	--

# APPENDIX B TABLE 1

## SUMMARY OF INDOOR AIR QUALITY DATA

129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv])											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
03-Dec-00	Benzene	6.6	--	--	0.76	--	0.4	TR(0.41)	0.77	0.68	TR(0.61)	--	3.5	--
	Ethylbenzene	2.3	--	--	0.26	--	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.46)	ND(0.46)	--	0.89	--
	m-&p-xylenes	8.3	--	--	0.74	--	0.34	TR(0.41)	0.54	0.47	0.49	--	1.5	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.38)	0.22	ND(0.38)	ND(0.38)	--	TR(0.31)	--
	o-xylenes	8.3	--	--	0.29	--	ND(0.23)	ND(0.46)	ND(0.23)	ND(0.46)	ND(0.46)	--	0.62	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.47)	ND(0.23)	ND(0.47)	ND(0.47)	--	7.1	--
	Toluene	7.7	--	--	1.7	--	1.3	1.5	1.4	1.5	1.4	--	1.7	--
01-Dec-00	Benzene	6.6	--	--	0.99	--	0.5	0.58	4.1	5	4.3	--	7.2	--
	Ethylbenzene	2.3	--	--	0.39	--	ND(0.23)	TR(0.23)	TR(0.35)	TR(0.32)	ND(0.23)	--	0.88	--
	m-&p-xylenes	8.3	--	--	1.2	--	0.52	0.68	0.9	0.9	0.54	--	1.7	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	TR(0.26)	0.47	ND(0.19)	--	0.4	--
	o-xylenes	8.3	--	--	0.44	--	ND(0.23)	0.24	TR(0.29)	TR(0.28)	ND(0.23)	--	0.64	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.23)	ND(0.23)	TR(0.35)	TR(0.27)	ND(0.23)	--	6	--
	Toluene	7.7	--	--	3.4	--	5.8	3.7	4.2	3.1	5.6	--	2.5	--
22-Oct-00	Benzene	6.6	--	--	0.44	--	--	--	0.54	--	--	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	--	--	0.32	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.57	--	--	--	1.2	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	0.38	--	--	--	--	--
	o-xylenes	8.3	--	--	TR(0.21)	--	--	--	0.44	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.23)	--	--	--	0.75	--	--	--	--	--
	Toluene	7.7	--	--	1	--	--	--	2	--	--	--	--	--



APPENDIX B TABLE 1  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv] )														
20-Oct-00	Benzene	6.6	--	--	0.86	--	--	--	1.4	--	--	--	--	--
	Ethylbenzene	2.3	--	--	0.29	--	--	--	0.46	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.98	--	--	--	1.4	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	2.1	--	--	--	--	--
	o-xylenes	8.3	--	--	0.36	--	--	--	0.5	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.23)	--	--	--	0.53	--	--	--	--	--
	Toluene	7.7	--	--	1.9	--	--	--	6.1	--	--	--	--	--
01-Oct-00	Benzene	6.6	--	--	0.37	--	--	--	0.51	--	--	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	--	--	0.25	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.44	--	--	--	0.73	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	ND(0.19)	--	--	--	--	--
	o-xylenes	8.3	--	--	ND(0.23)	--	--	--	0.26	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.23)	--	--	--	0.41	--	--	--	--	--
	Toluene	7.7	--	--	1.8	--	--	--	3.2	--	--	--	--	--
29-Sep-00	Benzene	6.6	--	--	0.52	--	--	--	7.7	--	--	--	--	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	--	--	0.52	--	--	--	--	--
	m-&p-xylenes	8.3	--	--	0.56	--	--	--	1.5	--	--	--	--	--
	Naphthalene	1	--	--	ND(0.19)	--	--	--	0.31	--	--	--	--	--
	o-xylenes	8.3	--	--	ND(0.23)	--	--	--	0.43	--	--	--	--	--
	Styrene	0.7	--	--	ND(0.24)	--	--	--	0.38	--	--	--	--	--
	Toluene	7.7	--	--	2.2	--	--	--	4.7	--	--	--	--	--

APPENDIX B TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv] )														
19-Jul-00	Benzene	6.6	--	--	1	--	0.75	1.9	27	29	9.8	--	20	--
	Ethylbenzene	2.3	--	--	0.47	--	TR(0.35)	TR(0.3)	TR(0.41)	TR(0.33)	TR(0.27)	--	2.1	--
	m-&p-xylenes	8.3	--	--	1.5	--	0.94	0.55	1	0.75	0.74	--	3.8	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	0.59	0.76	TR(0.32)	--	TR(0.26)	--
	o-xylenes	8.3	--	--	0.57	--	TR(0.32)	TR(0.27)	TR(0.38)	TR(0.31)	TR(0.3)	--	1.5	--
	Styrene	0.7	--	--	ND(0.24)	--	TR(0.26)	TR(0.32)	1.4	0.95	1	--	18	--
	Toluene	7.7	--	--	4.8	--	9.8	9.7	9.7	6.3	6	--	9.1	--
06-Apr-00	Benzene	6.6	--	--	0.72	--	TR(0.56)	ND(0.31)	14	10	26	--	14	--
	Ethylbenzene	2.3	--	--	ND(0.23)	--	3.8	48	ND(0.23)	17	3.9	--	ND(0.23)	--
	m-&p-xylenes	8.3	--	--	0.67	--	13	170	2.7	61	14	--	2.3	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	ND(0.19)	ND(0.19)	ND(0.19)	TR(0.47)	--	ND(0.19)	--
	o-xylenes	8.3	--	--	TR(0.23)	--	2.2	31	ND(0.23)	11	2.4	--	TR(0.96)	--
	Styrene	0.7	--	--	ND(0.24)	--	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	ND(0.24)	--	2.2	--
	Toluene	7.7	--	--	2.3	--	43	540	34	170	65	--	5.9	--
22-Feb-00	Benzene	6.6	--	--	0.76	--	0.65	--	18	10	26	--	22	--
	Ethylbenzene	2.3	--	--	0.28	--	0.25	--	0.65	0.38	0.63	--	2.3	--
	m-&p-xylenes	8.3	--	--	0.91	--	0.72	--	2	1.2	2.2	--	4.2	--
	Naphthalene	1	--	--	ND(0.19)	--	ND(0.19)	--	ND(0.19)	ND(0.19)	0.39	--	ND(0.19)	--
	o-xylenes	8.3	--	--	0.3	--	0.24	--	0.67	0.38	0.67	--	1.5	--
	Styrene	0.7	--	--	ND(0.23)	--	ND(0.24)	--	0.41	ND(0.24)	0.42	--	9	--
	Toluene	7.7	--	--	2.3	--	2.5	--	8.7	3.5	4.5	--	6.2	--

APPENDIX B TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )											
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
29-Nov-99	Benzene	6.6	--	--	1.1	--	0.37	0.55	3.6	3.6	5.6	--	3	--
	Ethylbenzene	2.3	--	--	0.24	--	0.25	0.34	0.28	0.19	TR(0.17)	--	0.88	--
	m-&p-xylenes	8.3	--	--	0.71	--	0.0	1.2	0.03	0.54	0.52	--	1.6	--
	Naphthalene	1	--	--	ND(0.4)	--	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.4)	--	ND(0.4)	--
	o-xylenes	8.3	--	--	TR(0.22)	--	0.26	0.34	0.23	0.17	TR(0.17)	--	0.65	--
	Styrene	0.7	--	--	ND(0.5)	--	ND(0.5)	ND(0.5)	0.33	ND(0.5)	0.24	--	6.8	--
	Toluene	7.7	--	--	2	--	2.5	4.5	5.5	2.3	2.1	--	2.5	--
30-Sep-99	Benzene	6.6	0.28	--	0.65	0.44	TR(0.47)	0.72	19	10	6.7	--	--	--
	Ethylbenzene	2.3	ND(0.5)	--	0.27	TR(0.21)	TR(0.25)	0.36	3.9	1.7	1.1	--	--	--
	m-&p-xylenes	8.3	0.47	--	0.85	0.64	0.74	0.71	10	4.8	3.2	--	--	--
	Naphthalene	1	TR(0.17)	--	0.19	TR(0.16)	TR(0.31)	0.21	0.41	0.49	0.39	--	--	--
	o-xylenes	8.3	TR(0.22)	--	0.39	0.28	TR(0.34)	0.31	2.8	1.5	0.97	--	--	--
	Styrene	0.7	ND(0.5)	--	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.75	0.4	38	--	--	--
	Toluene	7.7	1.4	--	1.9	2.1	2.9	2.5	17	4.9	4.3	--	--	--
18-Dec-98	Benzene	6.6	--	--	--	--	--	--	23	7	--	--	--	--
	Ethylbenzene	2.3	--	--	--	--	--	--	2.8	1.7	--	--	--	--
	m-&p-xylenes	8.3	--	--	--	--	--	--	6.6	6.6	--	--	--	--
	Naphthalene	1	--	--	--	--	--	--	ND(0.19)	0.46	--	--	--	--
	o-xylenes	8.3	--	--	--	--	--	--	2.2	3	--	--	--	--
	Styrene	0.7	--	--	--	--	--	--	0.29	ND(0.47)	--	--	--	--
	Toluene	7.7	--	--	--	--	--	--	4.5	3.5	--	--	--	--

APPENDIX B TABLE I  
SUMMARY OF INDOOR AIR QUALITY DATA  
129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE  
MALDEN, MASSACHUSETTS

SAMPLE	ANALYTE	MADEP Indoor Air Background	Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10	Site 11
Sample Results (Results listed in parts per billion by volume [ppbv])														
22-Dec-97	Benzene	6.6	--	--	2.1	--	--	--	18	6.1	--	--	--	--
	Ethylbenzene	2.3	--	--	0.7	--	--	--	1.2	2	--	--	--	--
	m-&p-xylenes	8.3	--	--	2.4	--	--	--	1.3	6	--	--	--	--
	Naphthalene	1	--	--	ND(0.4)	--	--	--	ND(0.4)	TR(0.2)	--	--	--	--
	o-xylenes	8.3	--	--	0.9	--	--	--	0.4	2	--	--	--	--
	Styrene	0.7	--	--	ND(0.5)	--	--	--	0.3	0.8	--	--	--	--
	Toluene	7.7	--	--	4.9	--	--	--	2.6	22	--	--	--	--
19-Nov-97	Benzene	6.6	0.9	--	1.9	1.1	0.8	1.9	61	13	7.5	--	--	--
	Ethylbenzene	2.3	ND(0.2)	--	0.9	0.3	0.4	1.1	2.7	1	0.7	--	--	--
	m-&p-xylenes	8.3	0.6	--	3.1	1.1	1	1.5	2.8	2	1.5	--	--	--
	Naphthalene	1	ND(0.2)	--	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	--	--	--
	o-xylenes	8.3	0.2	--	1.2	0.4	0.4	0.6	0.8	0.6	0.5	--	--	--
	Styrene	0.7	ND(0.2)	--	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.4	ND(0.2)	0.5	--	--	--
	Toluene	7.7	2.5	--	6.5	3.4	3	4.1	5.2	6.6	3.6	--	--	--
18-Jun-94	Benzene	6.6	--	1	--	--	--	1.8	--	1.1	1.1	0.7	--	--
	Ethylbenzene	2.3	--	0.4	--	--	--	1.1	--	14.2	20.7	15.9	--	--
	m-&p-xylenes	8.3	--	1	--	--	--	2.5	--	34.3	48.3	37.3	--	--
	Naphthalene	1	--	0.2	--	--	--	0.4	--	0.2	0.2	0.2	--	--
	o-xylenes	8.3	--	0.3	--	--	--	0.8	--	7.4	10.5	7.9	--	--
	Styrene	0.7	--	TR(0.026)	--	--	--	0.3	--	0.8	0.8	0.7	--	--
	Toluene	7.7	--	3.6	--	--	--	11.9	--	8	5.4	5.4	--	--

**APPENDIX B TABLE I**  
**SUMMARY OF INDOOR AIR QUALITY DATA**  
**129 COMMERCIAL STREET, PARCEL B OF FORMER MALDEN MANUFACTURED GAS PLANT SITE**  
**MALDEN, MASSACHUSETTS**

SAMPLE	ANALYTE	MADEP Indoor Air Background	Sample Results (Results listed in parts per billion by volume [ppbv] )										
			Site 1	Site 1A	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7	Site 8	Site 9	Site 10

**NOTES AND ABBREVIATIONS:**

1. OSHA PEL: Permissible Exposure Limits for air contaminants in Title 29 CFR Part 1910.1000, Department of Labor, Occupational Safety Health Administration, 1989 and 1993 final ruling. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
2. ACGIH TLV: Threshold Limit Values recommended by the ACGIH. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
3. NIOSH REL: 1994 Recommended Exposure Limits from the National Institute of Occupational Safety and Health. Based on the lowest of the 8-hour average, 15-minute readings, or instantaneous readings.
4. MADEP Indoor Air Background Values from: MADEP, "Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of MADEP V/PH/L/PH Approach," Final Policy, 31 October 2002 (Policy #WSC-02-411); and MCP Toxicity.xls (MCPsands.zip), 20 December 2001, available at <http://www.state.ma.us/dep/bwss/files/standard-gw2/gw2.htm>.
5. VOC (ppb): volatile organic compounds with values in parts per billion by volume; analyzed by EPA Method T014.
6. ND: compound not detected above quantitation limit, number in parentheses is the quantitation limit.
7. TR: compound detected below the quantitation limit, number in parentheses is the quantitation limit.
8. Test Results associated with 6 April 2000 sampling event are not representative of typical indoor air conditions due to interference from products containing VOC's being used inside the facility at the time of sampling.
9. Results collected from the Rooftop sample location on 22 December 1997 are not shown in this table but have been reported in RAM Status reports dated 7 October 2004 and earlier.
10. Due to facility modifications, Sample location 10 is no longer accessible as of October 2004. This location has been replaced by Sample Location 11; refer to Figure 2 for this sample location.