

**RELEASE ABATEMENT MEASURE
STATUS REPORT**

**51 & 100 COMMERCIAL STREET
MALDEN, MASSACHUSETTS**

RELEASE TRACKING NUMBER 3-0362
December 2008

Prepared For:



National Grid
25 Research Drive
Westborough, MA 01582

Prepared By:



Innovative Engineering Solutions, Inc.
25 Spring Street
Walpole, Massachusetts 02081
(508) 668-0033

RELEASE ABATEMENT MEASURE STATUS REPORT
51 COMMERCIAL STREET
MALDEN, MASSACHUSETTS

RELEASE TRACKING NUMBER 3-0362

December 2008

Prepared for: National Grid
25 Research Drive
Westborough, Massachusetts 01582

Prepared by: Innovative Engineering Solutions, Inc.
25 Spring Street
Walpole, Massachusetts 02081

Michael Lotti, L.S.P.
Project Manager and LSP of Record
License Number 4208

Joseph E. Higgins, P.E., L.S.P.
Project Reviewer

**Release Abatement Measure Status Report
51 & 100 Commercial Street
Malden, Massachusetts 02148
DEP Release Tracking Number: 3-0362**

This Release Abatement Measure (RAM) Status Report has been prepared by Innovative Engineering Solutions, Inc. (IESI) on behalf of Massachusetts Electric Company d/b/a National Grid (National Grid) in accordance with the requirements of the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000). This RAM is being conducted in accordance with the RAM Plan that was submitted to the Massachusetts Department of Environmental Protection (DEP) on August 9, 2007. The RAM is being conducted at the 51 Commercial Street and 100 Commercial Street portions of the former Malden manufactured gas plant (MGP) site (the "Site") located near the intersection of Commercial and Charles Streets in Malden, Massachusetts (hereinafter referred to as the RAM Areas). The DEP assigned Release Tracking Number (RTN) 3-0362 to the Malden MGP Site. Figure 1 depicts the site locus and Figure 2 depicts the location of the RAM Areas in relation to the disposal site boundary of the former MGP. Figures 3 and 4 provide RAM Area details for 51 and 100 Commercial Street, respectively.

The objectives of this RAM are to accomplish the following:

1. Install, start up, and conduct operation, maintenance, and monitoring (OMM) activities for a non-aqueous phase liquid (NAPL) recovery system at 51 Commercial Street.
2. Install a barrier beneath the proposed building at 51 Commercial Street.
3. Manage remediation waste generated during floor and foundation removal from the prior structure at 51 Commercial Street, construction of the new building foundation and Engineered Barrier under the foundation at 51 Commercial Street, and construction and operation of the NAPL recovery systems.
4. Restore, restart, and conduct OMM activities on an existing NAPL recovery system at 100 Commercial Street.

This report describes activities conducted between June 1, 2008 and December 1, 2008. As such, the content of this report has been structured to address the specific information requirements set forth in 310 CMR 40.0445 (2)(a) through (e). The RAM Status Report is presented below. The original RAM Transmittal Form (BWSC-106) was submitted electronically via eDEP and a copy of the RAM Transmittal Form is included in Appendix A.

310 CMR 40.0445 (2)(a) The status of response operations:

During this reporting period, the activities have included continued NAPL system construction at 51 Commercial, and reactivation and operation of the NAPL recovery system at 100 Commercial Street. The subsurface construction activities for the system at 51 Commercial Street are complete; additional information regarding the status of these activities is presented below.

NAPL System Construction – 51 Commercial Street

Construction of the equipment shed structure is complete and IESI is continuing to install the equipment inside the shed and extraction wells. Activities conducted this reporting period have only included gauging the extraction wells, and developing the extraction wells. System construction has been on hold because of the lack of recoverable NAPL in the extraction wells. During the next reporting period, IESI plans to periodically gauge the wells to determine if recoverable NAPL is present.

NAPL System Operation – 100 Commercial Street

The NAPL recovery system located at the 100 Commercial Street parcel of the site was reactivated in August 2008. The system had been deactivated since 2003 because of slowed recovery. Prior to reactivation, the system was

cleaned, checked and updated with new discharge tubing, a replacement extraction pump and confirmation that the fault switches (e.g., drum overflow, secondary containment, etc.) were working correctly.

Once reactivated, the system was checked periodically (twice weekly during the initial 3 weeks, then weekly on average for the remainder of the reporting period) in an effort to calibrate the automatic pumps to maximize NAPL recovery and minimize groundwater recovery. During each visit, the recovery well was gauged, the system's safety interlocks were checked, the amount of NAPL and water recovered was measured, and the thickness of NAPL in the recovery well was measured. Table 1 summarizes the data collected during this reporting period.

As discussed in the RAM Plan, the historic recovery rate of NAPL in 2001 to 2003 was high during initial activation of the system (up to 22 gallons per day) and fell to 1 to 2 gallons per day following initial operation. As shown on Table 1, the initial rates of recovery during this reporting period were as high as 47 gallons per day then slowed to 1 to 0.5 gallons per day after consistent operation. Based on the data collected this period and historic data, we anticipate similar recovery rates for the next period. The total amount of NAPL recovered this period is 267 gallons. The total volume of NAPL collected since 2001 from this system is approximately 967 gallons.

310 CMR 40.0445 (2)(b) Any significant new site information or data:

Aside from the system reactivation information presented above, there is no significant new site information and data this period.

310 CMR 40.0445 (2)(c) Details of and/or plans for the management of Remediation Waste, Remedial Wastewater, and/or Remedial Additives:

Remediation waste generated this period included 267 gallons of NAPL (primarily coal tar) at the 100 Commercial Street system and 132 gallons of groundwater generated from the well development activities conducted at 51 Commercial Street (on November 22, 2008). The NAPL recovered from 100 Commercial Street is currently stored in 55-gallon drums in the system recovery shed; we are currently in the process of waste characterization/profiling this NAPL for off-site recycling. The groundwater generated during well development activities at 51 Commercial Street was shipped to the Clean Harbors of Braintree facility as a hazardous waste under a Uniform Hazardous Waste Manifest; a copy of the Uniform Hazardous Waste Manifest is included as Appendix B.

310 CMR 40.0445 (2)(d) Any other information that the Department during its review and evaluation of a Status Report determines to be necessary to complete said Status Report, in view of site specific circumstances and conditions; and:

The DEP has not required additional information, and the DEP did not impose any conditions on the right to conduct the RAM.

310 CMR 40.0445 (2)(e) An LSP Opinion as to whether the Release Abatement Measure is being conducted in conformance with the RAM Plan and any conditions of approval established by the Department.

Having reviewed the requirements of the RAM Plan and the response actions completed to date, we are of the opinion that the RAM is being conducted in accordance with the RAM Plan.

If you require additional information or have any questions regarding this status report, please contact Michael S. Lotti, LSP of IESI at (508) 668-0033 (x 231) or Michele Leone at National Grid at 508-389-4296.

Table 1
Recovery Well RW-1 Gauging Data
100 Commercial Street
Malden, MA

Date	Depth to Water	Depth to NAPL	Depth to Bottom	Thickness NAPL	Total Gallons Recovered	Gallons Per Day
8/5/2008	1.68	8.80	14.30	5.50	36	36.0
8/6/2008	1.75	11.00	14.30	3.30	83	47.0
8/7/2008	1.70	12.00	14.30	2.30	83	0.0
8/11/2008	1.43	13.10	14.30	1.20	83	0.0
8/12/2008	1.43	13.10	14.30	1.20	117	34.0
8/21/2008	1.86	12.70	14.30	1.60	167	5.6
8/26/2008	1.85	11.55	14.30	2.75	178	2.2
9/2/2008	2.00	10.60	14.30	3.70	186	1.1
9/8/2008	2.60	11.80	14.30	2.50	203	2.8
9/18/2008	1.95	11.10	14.30	3.20	217	1.4
10/1/2008	1.35	14.30	14.30	0.00	227	0.8
10/9/2008	1.72	13.48	14.30	0.82	235	1.0
10/23/2008	2.10	13.26	14.30	1.04	248	0.9
11/7/2008	2.40	13.80	14.30	0.50	256	0.5
11/22/2008	2.05	13.75	14.30	0.55	262	0.4
12/3/2008	1.62	14.30	14.30	0.00	267	0.5

Notes NAPL - non-aqueous phase liquid
All data collected by IESI personnel



FIGURES



Innovative Engineering Solutions, Inc.
25 SPRING STREET
WALPOLE, MASSACHUSETTS 02081
(508) 668-0033

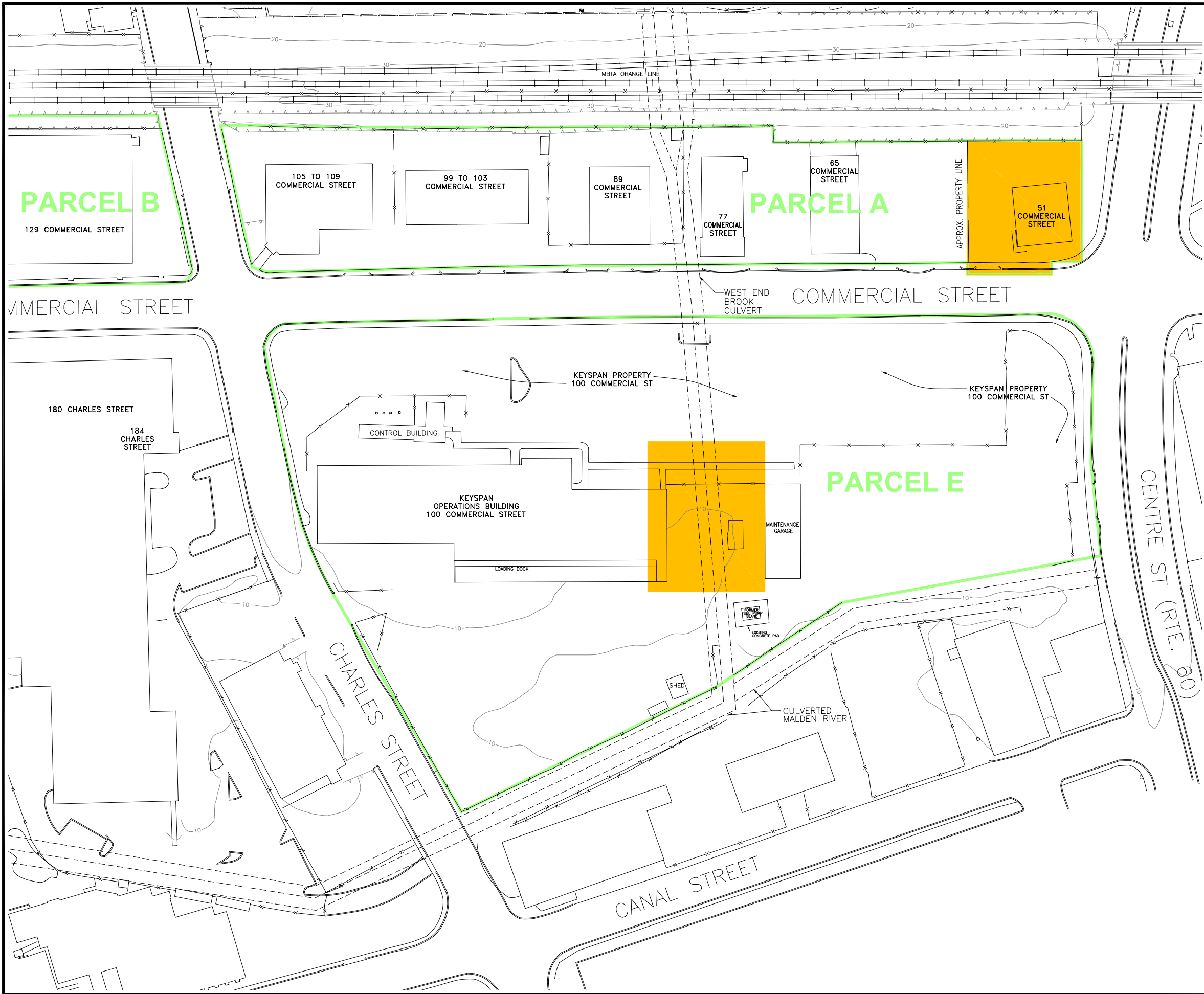
0 2000

SCALE IN FEET
1:24000

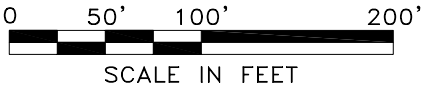
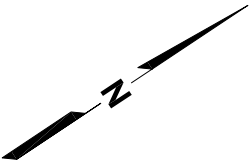
SITE LAT/LONG: 42°25'30"N 71°04'30"W
UTM: 329,298E 4,699,051N ZONE 19
USGS Topographic Map:
Boston North, Massachusetts 1991

FIGURE 1
SITE LOCATION MAP

Former Malden MGP Site
Malden, Massachusetts



 APPROXIMATE RAM AREA



THIS PLAN BASED ON THE SITE PLAN DATED DECEMBER 2001
BY HALEY & ALDRICH, INC.

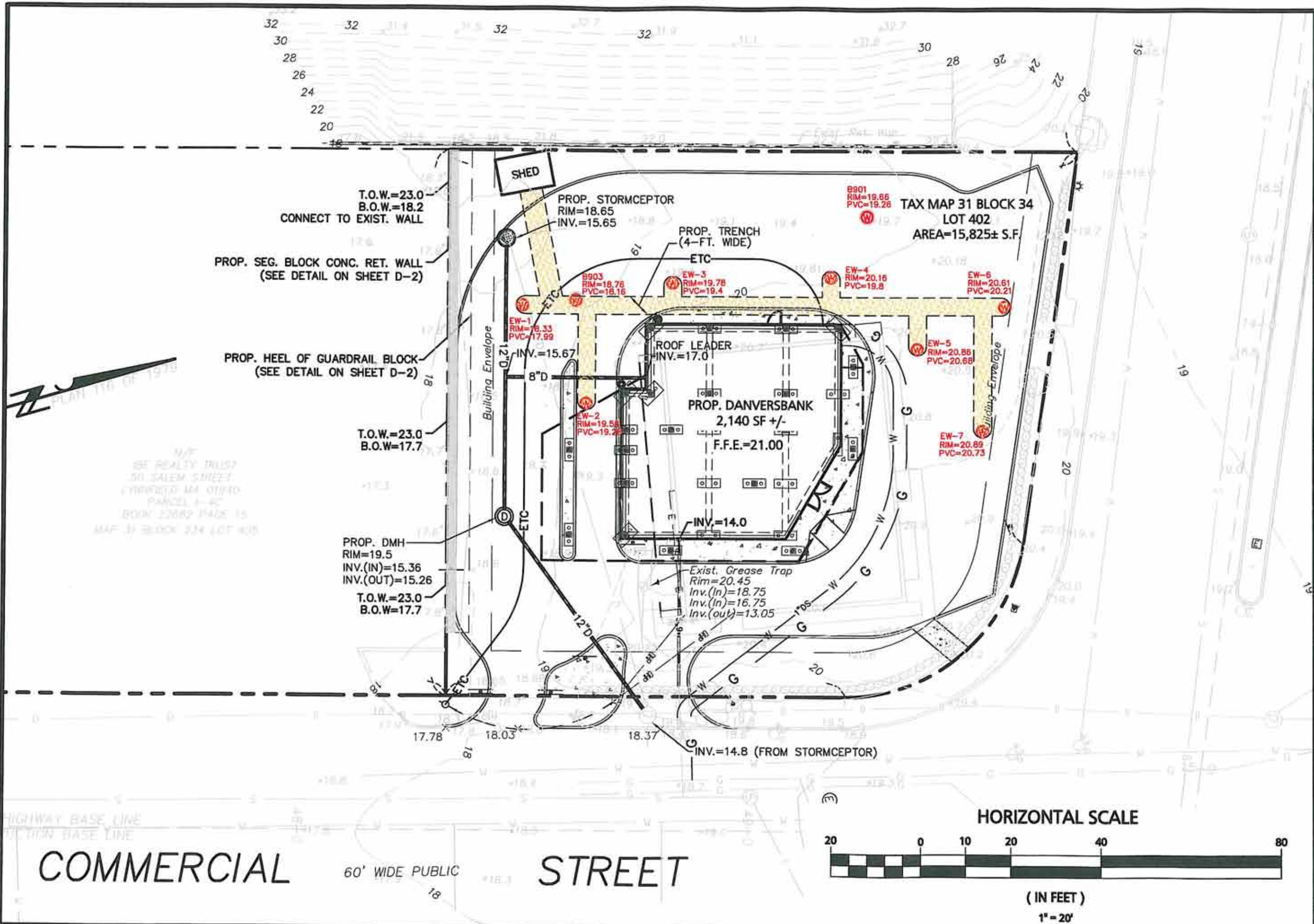
HALEY & ALDRICH, INC. NOTES:

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. LOCATION OF TEST BORINGS AND TEST PITS WERE
DETERMINED BY HALEY & ALDRICH, INC.

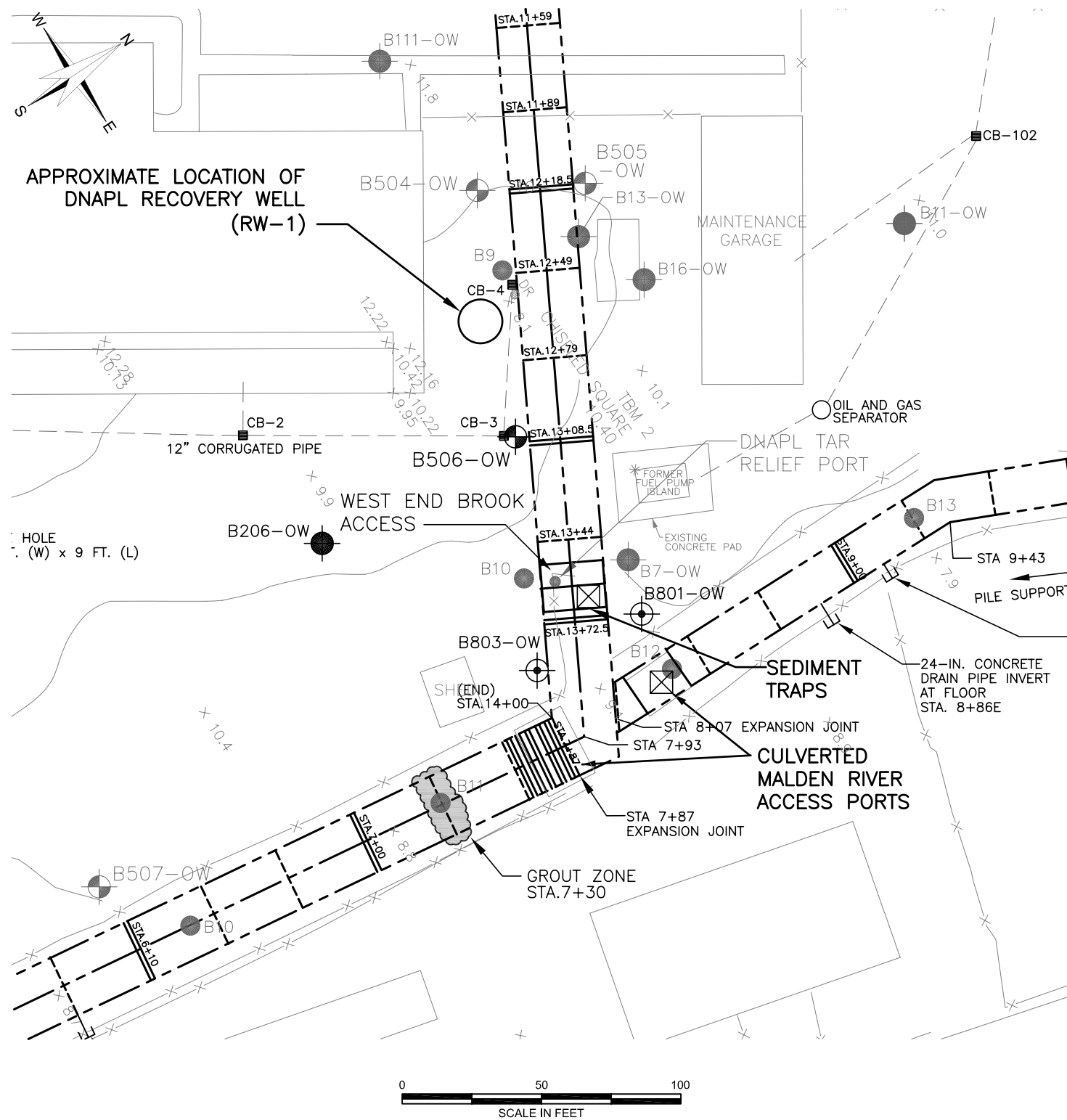


Innovative Engineering Solutions, Inc.
25 SPRING STREET
WALPOLE, MASSACHUSETTS 02081
(508) 668-0033








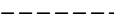
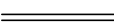


TITLE				
RAM AREAS				
SITE				
FORMER MALDEN MGP SITE				
CLIENT				
NATIONAL GRID				
DRAWN	CHECKED	FILENAME	DATE	FIGURE
DMR	ML	NG MALDEN RAM AREAS	12/27/07	2



Engineering Alliance, Inc. Civil Engineering & Land Planning Consultants 100 Commercial Street Malden, MA 02148 Tel: (781) 331-1348 Fax: (781) 417-0020	
PREPARED BY:	
DATE:	
PROJECT: Proposed Site Plan 51 COMMERCIAL STREET (Tax Map 31 Block 34 Lot 402) Malden, Massachusetts	
PROJECT # 07-16702	DATE: October 17, 2007
SCALE: AS NOTED	DWG FILE NAME: 07-16702.dwg
DESIGN BY: Andrew Swart	CHECKED BY: Richard A. Salvo, P.E.
Professional Engineer for Engineering Alliance, Inc.	
APPLICANT: Danversbank 1 Court Street Danvers, MA 01923	DRAWING TITLE: Combined Site and Remediation Plan
DWG. NO.: 10f1	



LEGEND:

-  **B803** DESIGNATION AND APPROXIMATE LOCATION OF 8-IN. DIA. DNAPL RECOVERY OBSERVATION WELL INSTALLED BY GEOLOGIC INC. IN NOVEMBER 1998
-  **B504** DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING AND OBSERVATION WELL INSTALLED BY GUILD DRILLING DURING THE PERIOD 25 TO 30 JULY 1996
-  **B206** DRILLED 27-29 JULY AND 1-11 AUGUST 1988
-  **B111** DRILLED 2-7 MAY 1988
-  **B11** DRILLED 23-25 NOVEMBER AND 1-3 DECEMBER 1987
-  **B10** WEST END BROOK MALDEN RIVER CULVERT DESIGN BORINGS
-  **OW** INDICATES GROUNDWATER MONITORING WELL WAS INSTALLED IN THE COMPLETED BOREHOLE
-  DESIGNATES LOCATION OF CONSTRUCTION JOINT
-  DESIGNATES LOCATION OF EXPANSION JOINT
-  WEST END BROOK/ MALDEN RIVER CULVERT
-  12" DRAINAGE PIPES CONNECTING EXISTING CATCH BASINS

NOTES:

1. BASE PLAN ADAPTED FROM THE FOLLOWING SOURCES:
 - "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.
 - 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. CULVERT LOCATION SHOWN WAS OBTAINED FROM THE FOLLOWING SOURCES:
 - * RECORD PLANS "MALDEN RIVER FLOOD CONTROL PROJECT IN THE CITY OF MALDEN" CONTRACT E77-3FC, REF. E-503. PREPARED FOR COMMONWEALTH OF MASSACHUSETTS METROPOLITAN DISTRICT COMMISSION (MDC) , DATED DECEMBER 1977.
 - * RECORD PLANS "WEST END BROOK FLOOD CONTROL PROJECT, STADIUM ROAD TO MALDEN RIVER; CONTRACT C-375 PREPARED FOR THE COMMONWEALTH OF MASSACHUSETTS, METROPOLITAN DISTRICT COMMISSION (MDC), DATED JUNE 1970.

HALEY & ALDRICH RAM PLAN
FORMER MALDEN MGP SITE
MALDEN, MASSACHUSETTS

SITE PLAN:
100 COMMERCIAL STREET RW-1 AREA

SCALE: AS SHOWN
AUGUST 2007

FIGURE 5

APPENDIX A

COPY OF RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM (BWSC-106)

APPENDIX B

COPY OF UNIFORM HAZARDOUS WASTE MANIFEST

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number				
		MAC300008125	1	800 483 3718	002216617 FLE				
5. Generator's Name and Mailing Address NATIONAL GRID Attn: Sue Brochu 25 Research Dr. Westboro, MA. 01582		Generator's Site Address (if different than mailing address) 51 Commercial St. MALDEN, MA. 02148							
Generator's Phone: 508-389-4293									
6. Transporter 1 Company Name CLEAN Harbors Environmental Services, Inc.		U.S. EPA ID Number MAD039322250							
7. Transporter 2 Company Name TR.		U.S. EPA ID Number							
8. Designated Facility Name and Site Address CLEAN Harbors of Braintree, Inc. 1 Hill Ave Braintree, MA. 02184		U.S. EPA ID Number MAD053452637							
Facility's Phone: 781-380-7100									
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes			
		No.	Type						
		X	1. NA 3082, Hazardous waste, LIQUID, N.O.S., (Benzene), 9, PG II	001	TP	132	G	0018	
			2.						
			3.						
	4.								
14. Special Handling Instructions and Additional Information 1. CH2445796 ERG #171									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Officer's Printed/Typed Name TOM CUMMINGS		Signature Tom Cummings			Month Day Year 11 22 08				
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:							
Transporter signature (for exports only):									
17. Transporter Acknowledgment of Receipt of Materials									
Transporter 1 Printed/Typed Name TOM CUMMINGS (AGENT FOR NATIONAL GRID)		Signature Tom Cummings			Month Day Year 11 22 08				
Transporter 2 Printed/Typed Name		Signature			Month Day Year				
18. Discrepancy									
18a. Discrepancy Indication Space		<input type="checkbox"/> Quantity <input type="checkbox"/> Type		<input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection		<input type="checkbox"/> Full Rejection			
Manifest Reference Number:									
18b. Alternate Facility (or Generator)		U.S. EPA ID Number							
Facility's Phone:									
18c. Signature of Alternate Facility (or Generator)		Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)									
1. H141		2.		3.		4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a									
Printed/Typed Name Keith Duly, Sr.		Signature Keith Duly, Sr.			Month Day Year 11 22 08				