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# REQUEST FOR PROPOSAL

**Permitting, Financing, Design,  
Construction, Operation and  
Ownership of a Source Separated  
Organic Materials Facility at the  
Hamilton Landfill**

Town of Hamilton, Massachusetts

December 11, 2013

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# Section 1

## Request for Proposals Overview

### 1.1 Background

By this request for proposals (“RFP”), the Town of Hamilton Massachusetts (“Town”), acting by and through the Town Manager, is requesting proposals (“Proposals”) from interested companies (“Respondents”) for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility (“Facility”). The Facility will be located on a portion of land leased to the selected Respondent at property that includes the Town’s landfill located off Chebacco Road (“Site”).

The Town is soliciting Proposals for the following:

Construction of a Facility on a portion of the site that accepts source separated organic materials as defined herein and uses anaerobic digestion technology to create a biogas that is used to generate electricity. The Respondent would be responsible for managing the digestate from the digestion process at an offsite location. The Town would lease up to three acres to the selected Respondent.

The Facility may only accept source separated organic materials. Respondents must demonstrate that their proposed facility can obtain all of the required local, state and federal permits. The Town does not intend on implementing a Demonstration Project as described in section 310 CMR 19.062 of the Solid Waste Management Regulations promulgated by the Massachusetts Department of Environmental Protection.

Respondents are directed to the minimum qualification criteria set forth in Section 4 of this RFP. These minimum qualifications criteria shall be used to determine which proposers are qualified to be fully evaluated by the Town (“Qualified Respondents”). Proposals from Respondents that do not meet the minimum qualifications criteria as determined by the Town will not be evaluated. The Town will select the Respondent whose Proposal is determined, in the sole judgment of the Town, to be in the best interest of the Town taking into consideration potential financial benefits to the Town and other evaluation criteria and procedures as set forth in Section 6 of this RFP. Subject to the Town’s reservation of rights, the Town will enter into a Land Lease Agreement with the selected Respondent.

A pre-submittal meeting for this RFP will be held at the Hamilton Town Hall, 577 Bay Road, Hamilton at 10:00 A.M. Eastern Daylight Time (EDT) on January 8, 2014. This meeting will be followed by a visit to the Site located on Chebacco Road in Hamilton, Massachusetts.

### 1.2 Land Lease Agreement

The Town intends to lease up to three (3) acres at the Site to the selected Respondent (“Contractor”) for purposes of constructing and operating the Facility. The initial term of the Land Lease Agreement

between the Town and the Contractor shall be twenty (20) years. The Town shall have the option of extending the term for up to two additional five-year periods.

A Draft Land Lease Agreement is included as Attachment A to the RFP. Respondents shall be permitted to submit comments on the Draft Land Lease Agreement as set forth in Section 7 of the RFP. The Town will endeavor to negotiate the final terms and conditions of the Land Lease Agreement with the Contractor following selection.

## 1.3 Controlling Document

If there is anything contained in this RFP that is inconsistent with, or conflicts with, the Land Lease Agreement, the Land Lease Agreement shall control.

## 1.4 Contents of Remaining RFP Sections

The remainder of this RFP is divided into the following sections:

**Section 2 - Project Description** – Provides a general description of the Facility to be designed and constructed and the property to be leased.

**Section 3 - Procurement Process, Schedule, Terms And Conditions** - Presents the procurement process including the contemplated schedule.

**Section 4 - Qualifications Criteria** - Presents the criteria which will be used to determine if a Respondent meets the required minimum technical and financial requirements.

**Section 5 – Technical and Operational Requirements** - Provides the minimum requirements for the design, construction and operation of the Facility.

**Section 6 - Proposal Evaluation Criteria and Evaluation Process** – Presents the proposal evaluation criteria and the procedures that the Town will use to determine which Proposal, if any, will be recommended to the Board of Selectmen (BOS).

**Section 7 - Proposal Submission Requirements** - Presents the proposal submission requirements and gives instructions for the preparation of the Proposal.

**Section 8 - Proposal Forms** - Includes the forms that are required to be completed and submitted as part of the Proposal.

## Section 2

# Project Description

### 2.1 Project Overview

The Town owns a 50-acre parcel situated off Chebacco Road near Route 128 in Hamilton (the “Site”). Approximately 12.7 acres of this property previously served as the Town’s landfill and is known as the Hamilton Landfill. The Town has used the Site for various activities since that time including a material storage for the Department of Public Works (DPW) and a residential leaf and yard waste drop-off area. Portions of the property have been leased to two gun clubs located to the northeast of the landfill. These clubs will remain at the site and will access their leased land through the current landfill site entrance and access road. The Facility would be constructed mostly off the footprint of the final cap and on an area of clean fill.

The Town plans to lease up to three (3) acres of the Site to the Contractor for the construction and operation of the Facility. Source separated organic materials would include food, yard, agricultural and/or vegetative waste that were collected separately from solid waste as defined by the Solid Waste Management Regulations (310 CMR 19.000) promulgated by the Massachusetts Department of Environmental Protection (MassDEP).

The selected Respondent will be responsible for the permitting, financing, design, construction, operation and ownership of the Facility, including procurement of feedstock materials, and will pay the Town certain revenues and/or provide in-kind services in exchange for use of the designated portion of the Site.

### 2.2 Hamilton Landfill Site

A portion of the Site was used for the disposal of municipal solid waste (MSW) from 1959 to 1983. A 7-acre portion of the landfill was used as a burn dump until the 1970’s and then operated in the sanitary landfilling method until closure and partial capping in 1980. The remaining landfill areas on the north side of the Site operated until 1983. Most of the remainder of the Site is wetlands.

The landfill portion of the Site is currently in the permitting phase for final closure through the MassDEP’s Solid Waste Management Regulations (310 CMR 19.000), with construction anticipated to start in late 2013 and be completed in early 2014. As part of the closure process, multiple assessments of the Site have been conducted. Since the proposed facility will be on a portion of the property that includes was historically used for a landfill, a post-closure use permit from the MassDEP will be

required for this and any activity at the Site, regardless of whether the Facility is located on or off the limits of waste.<sup>1</sup>

Copies of the environmental assessments for the Site required by the MADEP can be viewed online on the Town's website. A copy of the most recent water quality and landfill gas environmental monitoring report is provided in Appendix C.

An approximate 1-acre area located at the front of the Site has been designated for continued DPW Operations. The Town plans to lease up to three (3) acres of the Site for the Facility. The area of the Site to be potentially leased for construction and operation of the Facility is shown in Figure 2-1. This figure will be updated in the final lease agreement to show exact limits.

**Figure 2-1**  
**Limits of Area to be Potentially Leased for Development**  
**of a Source Separated Organic Waste Processing Facility**



<sup>1</sup> Note that MassDEP is currently revising their regulations and may change the requirements for post-closure use permits.

### 2.2.1 Additional Information Prepared for RFP

To assist Respondents with the development of their Proposals, the Town has prepared the following additional information. Use of this information is at the Respondent's discretion. The Town assumes no responsibility for the completeness or the accuracy of this information.

- Current topographic information for the Site, Site property lines, utility locations and the limits of the proposed lease areas. An AutoCAD formatted version of this plan is provided on the disk in Appendix D.
- Delineation of wetland resource areas conducted by Hancock Associates and CDM Smith around the entire perimeter of the Site as approved by the Hamilton Conservation Commission. This delineation was submitted to the Hamilton Conservation Commission for review and approval by the Town in the Notice of Intent Application for the landfill closure design. The plans showing this delineation are provided in Appendix E.

### 2.2.2 Available Utilities

The biogas generated by the Facility's anaerobic digester(s) shall be used to generate electricity on-site. Power lines extend to the Site. The Manchester-by-the-Sea Water Treatment Plant located directly across Chebacco Road to the west may be interested in purchasing some or all of the net electricity generated by the Facility.

Water is available on Chebacco Road near the site entrance. However, sewer and gas is not available near the site. The selected Respondent will be responsible for permitting, constructing and maintaining all connections to the existing utilities at their sole cost as well as any upgrades to the utilities necessary to construct their Facility.

### 2.2.3 Coordination with Other Site Uses

As shown on Figure 2-2 contained in Appendix B, the Town utilizes the Site for multiple uses including a small DPW operating and stockpiling area and the existing gun clubs. These uses will continue during the lease period on portions of the Site not leased to the Contractor.

Potentially, the Town may construct a solar photovoltaic array on portions of the Site.

The Contractor shall coordinate with the existing and proposed uses and not limit the continued uses of the portions of the Site outside of the leased area to the Contractor. Access to all of these activities shall be maintained throughout construction and operations.

## 2.3 Acceptable Materials and Quantities

Respondents should review the definitions contained in the MassDEP's Solid Waste Management Regulations (310 CMR 19.000) and the Site Assignment for Solid Waste Facilities Regulations (310 CMR 16.00) as updated by MassDEP in November 2012. No solid waste as defined in these regulations will be received at the Facility.

The acceptable materials for this project include only organic materials that is separated at the point of generation (source separated) and kept separate from solid waste. The Contractor will be responsible for securing all feed stock materials for the Facility.

Acceptable source separate organic materials include one or more of the following:

- **Food Material** – material produced from human or animal food production, preparation and consumption activities and which consists of, but is not limited to, fruit, vegetables, grains and fish and animal products and byproducts.
- **Vegetative Materials** – Plant materials.
- **Agricultural Material** – Organic materials produced from the raising and processing of plants and animals as part of agronomic, horticultural, aquacultural or silvicultural operations, including but not limited to, animal manures, animal products and by-products and plant materials. Note that animal manures will not be accepted at the Facility and other animal by-products will only be accepted with approval of the Town.
- **Yard Waste** – deciduous and coniferous seasonal deposition (e.g. leaves), grass clippings, weeds, hedge clippings, garden materials and brush.

The Town will not permit the acceptance of any wastewater biosolids or similar residuals from municipal wastewater treatment plants or other industries at the Facility.

The Town is currently implementing curbside collection of source separated organic materials from residents. The Contractor shall accept this material at no cost to the Town and at whatever quantity the Town generates (which may increase or decrease over the term of the contract, but shall not exceed 1,500 tons per year). In CY2012, the Town collected approximately 300 tons of organics as part of the curbside collection program.

The Contractor will be permitted to accept at the Facility a maximum of 200 tons per day (“TPD”) and 50,000 tons per year (“TPY”) of source separated organic materials that are suitable for incorporation into an anaerobic digestion unit. The Town will allow Respondents to construct the digesters and associated electricity generating portion of the Facility in phases (e.g. construct an initial facility to handle 100 TPD and revise the Facility up to the 200 TPD limit). The schedule for the development of each phase shall be outlined in the Respondents’ proposal.

### 2.3.1 Avoidance of Toxics in Incoming Organics

The Contractor shall make every effort to ensure that toxic materials are not delivered to the Facility. One of the key parts of this process is to monitor and document the source of the materials as well as conduct periodic inspections and as necessary, testing of the materials received. As outlined in Section 5, Respondents shall provide a preliminary plan describing how they will prevent the receipt of any toxic materials into the Facility, monitor the levels of toxics in any materials leaving the Facility and a contingency plan identifying the steps that will be taken if unacceptable waste is inadvertently received.

The Town reserves the right to review records at the Facility as to the source of all incoming and outgoing materials to and from the Facility, including the collection of samples for laboratory analysis.

### 2.3.2 Handling of Residual Wastes and Rejected Loads

The Town understands that there may be a limited quantity of residuals received at the Facility that will have to be separated from the feed stock prior to it being sent to the anaerobic digester. The Town will allow these residuals to be separated prior to the digester and removed for off-site recycling and/or disposal. The Contractor shall track the quantity of residual materials removed from incoming materials and its final disposal facility.

In compliance with MassDEP regulations, no more than five percent by weight of the source separated organic materials received at the Facility shall be disposed of as a residual (not including rejected loads as discussed below).

The Town understands that periodically, materials may be received at the Facility that will have to be rejected by the Contractor. If a load is rejected by the Contractor, the Contractor shall document (with photographs), the source of the load, the reason for it being rejected, and any steps to be taken to insure that further problem loads will not be received from the same source. Loads that are rejected shall be immediately segregated from other materials and removed from the Facility within one hour of receipt.

The Town may inspect any storage areas and require that the Contractor remove the materials if it is believed that the accumulation of materials will create a threat to public health, safety or the environment or create the potential for nuisance conditions.

## 2.4 Acceptable Processing Technologies

Source separated organic materials shall be processed using anaerobic digestion technology. Anaerobic digestion is defined as a process of accelerated biodegradation of organic materials using microorganisms under controlled conditions in the absence of additional oxygen. The digestate by-product and any associated side stream wastewater<sup>2</sup> from the Facility shall be managed off Site.

## 2.5 Town Benefits

In addition to any payments made to the Town, the Town is requiring that the Contractor provide the following in-kind benefits to the Town:

1. In addition to accepting organic materials collected from Hamilton residents as part of the curbside program at no cost, the Contractor shall provide a designated area on the Facility Site where residents of the Town of Hamilton can drop-off their own source separated organic materials at no cost. Individuals using this service shall be required to demonstrate that they are residents using procedures to be developed between the Town and the Contractor.

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<sup>2</sup> Note that the operator may be able to permit a septic system under the Title V regulations for sanitary wastewater streams.

2. As the Town currently collects source separated organic wastes curbside, the Contractor shall accept up to 1,500 tons per year of organic materials at the Facility at no cost to the Town. Note that this does not include leaf and yard waste.
3. The Town shall receive right of first refusal to purchase net electricity for use at Town properties under the state's net metering rules.

Respondents may provide additional benefits to the Town in their proposals.

## Section 3

# Procurement Process, Schedule, Terms and Conditions

### 3.1 Procurement Process and Timetable

The anticipated procurement process and timetable is shown below in Table 3-1. The Town, at its sole discretion, may modify the process and schedule as it deems appropriate. Respondents will be notified of any changes in the process and/or schedule by written addenda.

**Table 3-1  
Procurement Process and Schedule**

<i>Activity</i> <sup>1</sup>	<i>Date</i> <sup>1</sup>
1. Town Issues and Advertises RFP	December 11, 2013
2. Public Pre-Proposal Meeting for Interested Respondents	January 8, 2014
3. Document Room Available	December 11, 2013
4. Last Day Respondents Can Submit Written Questions to the Town	February 7, 2014
5. Town Issues Final RFP Addenda (if required)	February 18, 2014
6. Proposals Due	March 4, 2014
7. Evaluate Proposals	March 2014
8. Recommendation of Contractor Selection to Town	March 2014
9. Contractor Selection by Town	April 2014

### 3.2 Proposal Submission

Proposals are due on or before 4 P.M. EDT on March 4, 2014 at the following address:

Michael Lombardo, Town Manager  
Town of Hamilton  
577 Bay Road, PO Box 429  
Hamilton, MA 01936

Phone: 978-468-5572

Fax: 978-468-2682

Proposals shall be submitted in two separate, sealed packages. One package shall include the Respondent's Non-Price Proposal and the other package the Respondent's Price Proposal. Respondents shall submit one original of both the Non-Price and Price Proposals that bear original

<sup>1</sup> All activities and dates shown are subject to change.

signatures wherever signatures are required and those volumes shall be clearly marked "Original". Respondents shall also submit 12 copies of each original proposal.

The shipping package for the Non-Price Proposal (original plus 12 copies) shall be clearly marked on the outside with the following:

“[Insert Name of Respondent]

Permitting, Financing, Design, Construction, Operation and Ownership of a Source Separated Organic Waste Processing Facility

Non-Price Proposal to the Town of Hamilton, Massachusetts”

The shipping package for the Price Proposal (original plus 12 copies) shall be clearly marked on the outside with the following:

“[Insert Name of Respondent]

Permitting, Financing, Design, Construction, Operation and Ownership of a Source Separated Organic Waste Processing Facility

Price Proposal to the Town of Hamilton, Massachusetts”

The delivery of a Proposal to the above address on the above date and prior to the specified time is solely the responsibility of the Respondent. The Town shall not be responsible for delays caused by the U.S. Postal Service or any private delivery service. Proposals delivered after the specified time will not be accepted and will be returned unopened to the Respondent with the following notation: "This Proposal was received after the delivery time designated for the receipt and opening of Proposals". Modifications in writing received prior to the time set for the Proposal submittal will be accepted.

A Proposal may be withdrawn prior to the time set for the Proposal submittal, based on a written request from an authorized representative of the Respondent. However, a Proposal may not be withdrawn after the time set for the Proposal submittal for a period of 120 calendar days following submittal.

### 3.3 Contact Person/Additional Information

The Town's contact person for this RFP is:

Contact: Laura Bugay, CDM Smith

Fax: 617-452-6589

E-Mail: bugayla@cdmsmith.com

Requests for additional information or clarifications must be made in writing to the above named contact person no later than February 7, 2014. The Town will issue responses to inquiries and any other corrections or amendments it deems necessary via written addenda issued prior to the Proposal due date.

### 3.4 Interpretations and Addenda

No interpretation, explanation or clarification of this RFP by any official, employee, consultant, attorney or other representative of the Town will be considered authoritative or binding on the Town unless contained in a written addenda to this RFP. The Town will not be bound by any information, explanation, clarification or any interpretation, oral or written, by whoever made that is not incorporated into a written addendum to this RFP. All addenda will be distributed to each interested Respondent that has requested a copy of this RFP. All such addenda shall become part of this RFP, and all interested parties shall be bound by such addenda.

### 3.5 Pre-Proposal Meeting

A non-mandatory pre-submittal meeting for this RFP will be held at the Town Hall, 577 Bay Road, Hamilton at 10:00 A.M. EDT on January 8, 2014. This meeting will be followed by a visit to the Site. A list of attendees and answers to any questions will be provided in writing to all Respondents following the pre-proposal meeting.

### 3.6 Prohibited Contacts

All Respondents, including persons affiliated with, or in any way related to them, are prohibited from contacting the Town's Board of Selectmen, the Town's staff, consultants or attorneys for the Town on any matter having to do in any respect with this RFP other than with the consent of the Contact Person designated in Section 3.3 or his designee.

Failure of any Respondent to adhere to this prohibition may, at the sole discretion of the Town, result in disqualification and rejection of any Proposal. Any and all contacts with such persons associated with the Town shall be made only through and in coordination with Contact Person designated in Section 3.3 and shall be required to be in writing.

### 3.7 Town Rights

This RFP constitutes an invitation to submit Proposals to the Town. This RFP does not obligate the Town to procure or contract for any of the scopes of services set forth in this RFP. The Town, including

its agents and designated representatives, reserves and holds at its sole discretion, various rights and options, including without limitation, the following:

- a) To waive any minor informalities in Proposals submitted in response to the RFP.
- b) To prepare and issue modifications and/or addenda to the RFP prior to the receipt of Proposals that may expand, restrict, or cancel any portion or all work described in this RFP.
- c) To receive questions from Respondents and to provide such answers as it deems appropriate.
- d) To change the date for receipt of Proposals or any deadlines and dates specified in this RFP.
- e) To change the procurement and/or selection process.
- f) To conduct investigations with respect to the information provided by each Respondent and to request additional information to support such Respondent's responses and submittals.
- g) To seek clarification of Proposals from such Respondents.
- h) To cancel this RFP with or without the substitution of another RFP.
- i) To reject any and all Proposals.
- j) To select and enter into negotiations with the Respondent that in the sole judgment of the Town submitted the most advantageous Proposal taking into consideration the evaluation criteria set forth in the RFP.
- k) To enter into a Land Lease Agreement with the Respondent whose Proposal is determined, in the sole judgment of the Town, to be in the best interest of the Town.
- l) To request Respondents to send representatives to Hamilton, Massachusetts for interviews at their own cost.
- m) To visit facilities referenced in the Respondent's Proposal during the procurement process.
- n) To apply any additional rights as may be allowed under applicable purchasing laws and rules.

### 3.8 Cost Incurred by Respondents

All expenses involved with the preparation and submission of Proposals to the Town, or any work performed in connection therewith including site visits and interviews, shall be borne by the Respondents and shall not be reimbursed by the Town.

### 3.9 Disclaimer of Accuracy

The Town assumes no responsibility for the completeness or the accuracy of the specified technical and background information presented in this RFP, or otherwise distributed or made available during this procurement process. Without limiting the generality of the foregoing, the Town will not be

bound by or responsible for any explanation or interpretation of the RFP documents other than those given in writing. In no event shall a Respondent rely on any oral statement by the Town, its staff, agents, advisors or consultants.

### 3.10 Proprietary Information

All Proposals from Respondents become the property of the Town and may be subject to public review. If any proprietary information is contained in or attached to a Proposal, it must be clearly identified for the Town to ensure protection of such information to the extent allowed by Massachusetts law.

### 3.11 Existing Documents

Electronic files of pertinent site related documents will be available on the Town's website under Public Works, for the duration of the proposal period.

[http://hamiltonma.gov/Pages/HamiltonMA\\_PublicWorks/Anaerobic%20Digester%20Background](http://hamiltonma.gov/Pages/HamiltonMA_PublicWorks/Anaerobic%20Digester%20Background)

### 3.12 Site Visits and Field Investigations

Inspection of the Site may be requested and granted prior to the due date of the Proposals.

The Town assumes no liability for a Respondent being unable to obtain a Site visit whenever it desires. The Town may require Respondents to sign a waiver of liability agreement during these visits. An employee or agent of the Town must escort each Respondent during these inspections. Answers to questions during inspections shall not be relied upon in the preparation of Proposals.

To obtain answers which can be relied upon, questions from Respondents shall be submitted in writing to the contact person named in Section 3.3. Responses to questions will be addressed through written addenda to the RFP or written clarifications to all Respondents. Requests for additional information will be responded to by providing the additional information in the Document Room and notifying all Respondents of the availability of such additional information. A list of additional information provided to the Document Room will be maintained and made available to Respondents.

Changes to the RFP will only be made in writing via the issuance of addenda.

### 3.13 Conflict of Interest

The Respondent represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of services requested hereunder. The Respondent further represents that no person having any interest shall be employed for said performance.

The Respondent shall promptly notify the Town, in writing, by certified mail, of all potential conflicts of interest for any prospective business association, interest, or other circumstance, which may influence or appear to influence the Respondent's judgment or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or

circumstance, the nature of work that the Respondent may undertake and request an opinion of the Town as to whether the association, interest or circumstance would, in the opinion of the Town, constitute a conflict of interest if entered into by the Respondent. The Town agrees to notify the Respondent of its opinion by certified mail within 21 days of receipt of notification by the Respondent.

### 3.14 Collusion

The Respondent, by affixing its signature to the Proposal, certifies that the Respondent's Proposal is made without previous understanding, agreement, or connection with any person, firm, or corporation making a Proposal in response to this RFP and is in all respects fair, without outside control, collusion, fraud or otherwise illegal action.

### 3.15 Local, State and Federal Compliance Requirements

Respondents shall comply with all local, state and federal directives, orders, regulations and laws as applicable to this RFP and any subsequent contract.

### 3.16 Prevailing Wage Rates

Pursuant to Massachusetts General Laws (M.G.L) c. 149, §27F, prevailing wage rates may apply to a portion of the project. The Respondent should assume that prevailing wage rates are required pursuant to this chapter and section of M.G.L.

## Section 4

# Qualifications Criteria

In order to be deemed a Qualified Respondent, a Respondent must demonstrate to the satisfaction of the Town that it is capable of providing the anticipated scope of services for the anticipated project described herein and possess the following Minimum Qualifications stated in this Section 4. Proposals from Respondents that do not meet the Minimum Qualifications criteria will not be evaluated.

### 4.1 Organizational Qualifications

It is Town's intent to contract directly with a single entity, which will be the single point of contact and have direct contractual responsibility for project aspects including permitting, financing, design, construction, operation, maintenance and ownership of the Facility. This party shall be clearly identified in the Proposal.

A Respondent may be comprised of one or more firms, companies, and/or individuals; however, to be deemed qualified, the Respondent must demonstrate that it has: (i) a qualified design engineer ("Design Member"); (ii) a qualified constructor ("Constructor Member"); (iii) a qualified technology supplier ("Technology Member") and (iv) a qualified operator ("Operating Member"). The qualifications criteria necessary for each member to be deemed qualified are set forth in Section 4.2.

All key component firms, companies or individuals (i.e., those performing the design and construction, the technology supplier and the operator) shall have an exclusive relationship to the Respondent for the purposes of this project. No firm, company or individual shall be part of more than one Respondent firm competing for this project.

Once a Respondent submits a Proposal, the key component firms, companies or individuals (i.e., those performing the design and construction, the technology supplier and the operator) shall not be changed unless the prior written approval of the Town is obtained by the Respondent. Proposed substitutes must meet the qualifications criteria stated in this RFP. Prior to granting such approval, the Town may request submission of the qualifications of the new firm, company or individual in reasonable detail to evaluate the qualifications based upon the criteria contained in this RFP. If a Respondent is unable to replace the firm, company or individual with one that is qualified, the Town may deem the Respondent as not qualified and may drop such Respondent from further consideration and participation in the procurement process.

### 4.2 Minimum Qualifications Criteria

The Respondent must demonstrate in the appropriate section of the Non-Price Proposal that it meets each of the following minimum qualifications criteria.

### 4.2.1 Design Member

The Respondent or its Design Member(s) must meet the following minimum design experience requirements:

- i. Participated as the lead design engineer in the design of at least one anaerobic digestion or similar facility (e.g. wastewater treatment plants) with the reference project having a minimum capacity of 10 TPD;
- ii. All reference projects listed to demonstrate the above experience criteria must be completed, and must be in full operation for at least one year. All reference projects shall have been completed in last ten years;
- iii. Must possess a current Massachusetts professional engineer's licensure; and
- iv. Must fill in and properly execute Proposal Form 5 found in Section 8 of this RFP.

### 4.2.2 Constructor Member

The Respondent or its Constructor Member(s) must meet the following minimum construction experience requirements:

- i. Participated as the lead constructor in the construction of at least one anaerobic digestion or similar facility with the reference project having a construction cost of at least \$1.0 million;
- ii. All reference projects listed to demonstrate the above experience criteria must be completed, and must be in full operation for at least one year. All reference projects shall have been completed in the last seven years;
- iii. Must possess the appropriate current Massachusetts license for work being performed; and
- iv. Must fill in and properly execute Proposal Form 6 found in Section 8 of this RFP.

### 4.2.3 Technology Member

The Respondent or its Technology Member(s) must meet the following minimum technology experience requirements:

- i. Have a minimum of three anaerobic digestion installations processing the same or similar feed stocks including manure and wastewater treatment plant residuals proposed for the Facility in operation with each reference installation having a minimum capacity of 50 TPD;
- ii. All reference installations listed to demonstrate the above experience criteria must be completed, and must be in full operation for at least one year. All reference projects shall have been completed in last seven years; and
- iii. Must fill in and properly execute Proposal Form 7 found in Section 8 of this RFP.

#### 4.2.4 Operating Member

The Respondent or its Operating Member must meet the following minimum operating experience requirements:

- i. Have operated a minimum of two anaerobic digestion facilities processing the same or similar feed stocks proposed for the Facility including manure and wastewater treatment plant residuals with each reference installation having a minimum capacity of 10 TPD;
- ii. The length of the operating period for all reference projects listed to demonstrate the above experience must be for at least one year; and
- iii. Must fill in and properly execute Proposal Form 8 found in Section 8 of this RFP.

#### 4.2.5 Additional Criteria

The Respondent must demonstrate and certify that no officer of the companies comprising the Respondent, or any affiliates of the companies comprising the Respondent, has been convicted of fraud by the federal government or by any government entity in Massachusetts or any other state. Properly executing and submitting Proposal Form 2 contained in Section 8 of this RFP will demonstrate the above.

The Respondent must demonstrate that said Respondent, or any affiliates of the companies comprising said Respondent, have not filed for bankruptcy within the previous 10 years. Properly executing and submitting Proposal Form 2 contained in Section 8 of this RFP will demonstrate the above.

The Respondent must demonstrate, to the satisfaction of the Town, evidence of its ability to obtain:

- a) A payment and performance bond equal to at least \$5 million from a Massachusetts licensed Surety company to be kept in force during the construction period in case the Contractor should default on any of the obligations contained in the Land Lease Agreement related to construction and such default caused the Land Lease Agreement to be terminated; and
- b) An irrevocable letter of credit equal to at least \$2 million from a bank whose long-term debt is rated at least "A" to be kept in force during the term of the Land Lease Agreement or other form acceptable to the Town in case the Contractor should default on any of the obligations contained in the Land Lease Agreement related to Facility operations and maintenance and such default caused the Land Lease Agreement to be terminated. The irrevocable letter of credit shall also provide financial assurance that the Facility Site will be restored to its original condition at the end the term of the Land Lease Agreement or in the event the Land Lease Agreement was terminated due to default.

To demonstrate the above ability to obtain the required payment and performance bond and letter of credit, Respondent must submit in the Proposal, properly executed Proposal Forms 3 and 4 contained in Section 8 of this RFP.

### 4.3 Evaluation of Respondent's Qualifications

Evidence of a Respondent's qualifications shall be included in the Non-Price Proposal as discussed in Section 7 of this RFP. Each Respondent's minimum qualifications will be evaluated on a pass/fail basis. Those Respondents that do not demonstrate the minimum qualifications outlined in Section 4.2 of this RFP will not be considered further and their Price Proposal will not be opened.

## Section 5

# Design Criteria and Operational Requirements

This section sets forth the minimum design criteria and operational requirements that the Contractor shall comply with during the permitting, design, construction and operation of the Facility. The objective of these criteria and requirements is to establish the Town's expectations related to the design and operation of the Facility. The Contractor shall also comply with all local, state and federal regulations and permit conditions. If there is a conflict between these Section 5 design criteria and operational requirements and any local, state and federal regulation and/or permit condition, the more stringent condition shall apply.

During permitting work being performed by the Contractor, the Contractor shall respond in a timely manner to comments received from any Town board or commission and incorporate revisions to the proposed Facility as appropriate.

The Contractor shall provide the Town with a set of design plans stamped by a Professional Engineer, registered in Massachusetts. These plans shall be the same as utilized to obtain the building permits from the local building department.

### 5.1 Available Property

One parcel of land at the Site is available for lease by the Town. The Town intends to lease three (3) acres located along the west side of the Site to the Contractor as shown in Figure 5-1. Other portions of the property are intended to be leased separately for solar photovoltaic (PV) and to the existing gun clubs. The Town will conduct waste excavation and final closure and capping of the landfill site in accordance with MassDEP prior to commencement of the Land Lease Agreement. All other site related activities including additional subsurface investigations, requirements for utility connections, site grading, etc., shall be the responsibility of the Contractor.

**Figure 5-1**  
**Approximate Area to be Leased for Digestion Facility**



## 5.2 Facility Permitting

The Contractor shall be solely responsible for all local, state and federal permitting requirements associated with design, construction and operation of the Facility. The Town shall cooperate with the Contractor's efforts to secure the required permits. The Contractor shall provide draft copies of all permit applications to the Town for review prior to submission. The Contractor shall provide final copies of all final permit applications and permits.

Some of the regulations and approval requirements for this facility and the Contractor's responsibilities are outlined below.

### 5.2.1 Site Assignment for Solid Waste Facilities (310 CMR 16.000)

The current (November 2012) MassDEP regulations state that anaerobic digestion sites are exempt from site assignment, as materials that are recycled, composted or converted are excluded from the solid waste definition. However, the Town notes the following related to the development of the Facility on the Site:

- The original site assignment for the Site cannot be located. The Town has met with the Board of Health to determine the method and process to recreate a site assignment, if necessary, for the Site. The process for site assignment will be clarified during the procurement process. The Site assignment may need to be modified to allow for construction of the facility.

- The Contractor will be responsible for presenting the project to the Hamilton Board of Health during the site assignment modification process, if necessary, including payment of any and all hearing costs and fees.

The Board of Health including its agents reserve the right to inspect the Facility at any time during its construction, start-up and operation. The Board of Health and its agents shall be able to take enforcement or other actions based upon the results of these inspections and any laws, regulations or approvals.

### 5.2.2 Zoning

The Hamilton Landfill Site is currently zoned as Commercial Overlay District (COD). Pursuant to the Town's zoning bylaws, this district is intended to allow for land uses that will support economic development and to provide a clear permit review and approval pathway for proposed projects. The surrounding property approximately 750 feet to the North is zoned residential (RA) and across Chebacco Road to the West is the Manchester water treatment plant and Gravelly Pond, also in the Residential (RA) zoning district. To the south is the Manchester Town line and the Manchester landfill and to the east is the Essex Town line. A copy of the Town's Zoning Bylaw is available on-line at the Town's web page.

A source separated organic materials processing facility is not identified as an expressly permitted use under Section V, G. 3. (Permitted Uses) of the Town's Zoning Bylaw. However, based upon preliminary public meetings with the Town, the AD facility could be permitted as a biotechnology. Based on the general requirements for this commercial overlay district, a Special Permit with design review is required. Other requirements may include a traffic study and compliance with stormwater regulations and by-laws which may include infiltration of stormwater.

The commercial overlay district requires buildings to be a minimum distance of 25-feet from the edge of the overlay district. Buildings also need to have a minimum of 20-feet separation between them for distance for emergency fire fighting vehicles. Height of the buildings are restricted to 50-feet, not including spires, towers, exhaust stacks, etc., that are not part of the occupied building space. However, if buildings are located greater than 200-feet away from the COD boundary, a building height of 60-feet is permitted.

To apply for the Special Permit, the Contractor must request and attend a pre-application meeting at a regular business meeting of the Planning Board to exchange information and receive preliminary feedback on the proposed project. At this meeting, other Town boards such as the Conservation Commission, Department of Public Works, Landfill Steering Committee, etc., will be invited to attend. Following the pre-application meeting, the Contractor shall submit the application to the Town Clerk and Planning Board in accordance with the zoning bylaws. The Contractor shall attend all required site visits and public meetings required by the Planning Board as part of the review process for the application.

The Planning Board is the Granting Authority of the Special Permit. The Contractor shall be responsible for obtaining the Special Permit as required from the Planning Board. The Town will support these efforts.

The Hamilton Landfill Site is also within the Groundwater Overlay Protection District (GOPD). Pursuant to the Town's zoning bylaws, this district is intended to preserve and protect existing and potential sources of drinking water supplies and recharge areas and to prevent temporary and permanent contamination of the environment. The Contractor shall apply for a Special Permit through the Zoning Board of Appeals (ZBA) as part of the review process for the application and demonstrate that the construction and operation of the proposed facility complies with the by-law. The Planning Board and the ZBA may allow for a joint special permit and meeting process for the proposed project.

### **5.2.3 Wetlands Protection Act (310 CMR 10.00) and Town Wetlands Protection Code**

The Contractor shall be responsible for obtaining all permits and approvals required by filing a Notice of Intent (NOI) under the Massachusetts wetlands regulations and the Town's Conservation Bylaw. These filings shall demonstrate the facility's compliance with work in jurisdictional areas and proposed stormwater control and treatment standards and guidelines.

The Contractor shall also be responsible for obtaining any other wetland or stormwater related permits including filings under the National Pollution Discharge Elimination System (NPDES) regulations both for construction and operation of the facility.

No liquid fuels will be allowed to be stored on Site by the Contractor.

### **5.2.4 Other Permits and Approvals**

In addition to the approvals listed above, the Contractor shall be responsible for making submissions and receiving approval of all other permits for the proposed facility including:

- Solid Waste Permits under the MassDEP Regulations for Solid Waste Management Facilities (310 CMR 19.000) and the Site Assignment Regulations (310 CMR 16.00). These permits may include a General Permit for anaerobic digestion and/or composting or a permit for a recycling, composting or conversion (RCC) operation as described in the regulations. The Contractor will be responsible for obtaining any and all permits required under these regulations, as modified in November 2012 (or current). The Contractor shall also be responsible for the completion of a Post-Closure Use Permit under the MassDEP solid waste regulations should one be required for this project.
- Massachusetts Environmental Policy Act (310 CMR 11.00, MEPA). The Contractor shall be responsible to prepare and receive approval of any reports or approvals required by the MEPA regulations for their facility.

- Air Quality Regulations (310 CMR 7.000) and associated regulations. The Contractor will be responsible for preparing permit application(s) and receiving approvals for any regulations associated with air quality and facility emissions.
- Any and all building permits and approvals required by state and local laws, codes and regulations.
- Connections to any required utilities including water use, and electrical interconnection.

### 5.2.5 Landfill Closure Status

The Town is currently in process of obtaining final closure status for the Landfill Site. There are 5 designated areas of landfill, Area 1, 1A, 2, 2A and 2B. A final cap was constructed over Area 1 in 1980 as approved by DEQE (predecessor agency to DEP) in December 1977. After closure of Area 1, operations continued in Area 1A and Area 2 (including Areas 2A and 2B) until 1983. These areas were covered with intermediate cover soils in 1984, although not closed in accordance with any approved closure plans.

In 1991, an Initial Site Assessment (ISA) and Comprehensive Site Assessment (CSA) Scope of Work was prepared by CDM Smith for the landfill site. In 2005, a revised CSA Scope of Work was prepared by SEA Consultants, Inc. (SEA). CSA related investigations and activities including test pitting, wetland delineation, and groundwater, surface water, sediment and landfill gas sampling, occurred in 2006 and 2007 with the final CSA report submitted to MassDEP in November 2008. Conclusions of the CSA determined the following:

- The edge of waste extended to the edge of wetlands on the northern side of Area 2.
- The edge of waste was not determined along the northwest side of Area 2B.
- Groundwater and surface water are not impacted by the landfill.
- Sediment in the 'ponds' located on site are not impacted by the landfill.
- Area 1 has a varying depth of soil cover.
- Landfill gas in the soil is not present at the site perimeter.

Based upon these findings and conclusions presented in the CSA, a Corrective Actions Alternatives Analysis (CAAA) for final site closure was prepared by CDM Smith and submitted to MassDEP in May 2012 which was subsequently approved with comments in April 2013. The CAAA also discussed closure options in consideration of future site post-closure uses and the results of the CSA. A Corrective Action Design (CAD) was submitted to MassDEP in July 2013 and was approved on November 18, 2013. The CAD includes maintenance and augmentation to the existing soil cap over Area 1, installation of a 3-foot soil cap over waste in Area 2, 2A and a portion of 2B, waste relocation in Area 2B, and installation of an alternative pavement cap over Area 1A.

Final capping and closure construction is planned to commence in November 2013 and be substantially complete by August 2014. During the period of operation of the Facility the Town will continue to conduct environmental monitoring of the groundwater, surface water and landfill gas at the Landfill. The Contractor will be responsible for filing a post-closure use permit application with MassDEP per section 310 CMR 19.143. If MassDEP elects to require additional monitoring at the Landfill Site related to the construction and operation of the Facility, The Town may either require the Contractor to perform the monitoring at their own expense or be reimbursed for additional costs incurred by the Town to implement the additional monitoring. Closure related documents developed during the closure process are available for review per the requirements of the RFP.

Should the proposed project require excavation of any landfilled waste or existing soils on site, the Contractor shall be responsible for characterization of these materials. Any materials that require disposal must be transported off site to a licensed disposal facility.

The Contractor shall not be allowed to bring any contaminated soils onto the Site during construction. The Contractor shall provide the Town with documentation on the source of any incoming soils and document that they are “natural soils” without any anthropogenic contamination.

### 5.3 Facility Design

The Contractor shall be solely responsible for preparing the design plans and specifications for the Facility. Such plans and specifications shall confirm to all applicable codes and standards pursuant to Section 5.19 and the conditions of all applicable permits. Design plans and specifications shall be signed and sealed by a professional engineer(s) licensed in the Commonwealth of Massachusetts. The Town shall have the right to review drawings and specifications during the course of the design for compliance with the terms and conditions of the Land Lease Agreement. The Contractor shall provide a copy of the Facility as-built drawings to the Town within 30 days of the Facility commencing operation.

Existing easements at the Site shall be identified and shall be observed and honored unless exceptions are obtained in writing from the easement holder. The Contractor shall be responsible for obtaining any new easements that may be necessary to construct and operate the Facility. No work shall be performed in wetland areas. All required building separation and setbacks shall meet all applicable ordinances and codes.

Foundations for all equipment and structures shall be designed on the basis of geotechnical information. Existing survey and geotechnical information is provided for informational purposes in Appendices D and F, respectively. The Contractor shall be responsible for verifying the accuracy of this information. It shall also be the Contractor’s responsibility to undertake additional subsurface investigations and/or surveys as needed to properly design the Facility. The Contractor’s design shall include provisions to address the settlement of the MSW over the time, if any buildings are proposed on waste, and the generation of landfill gas as a byproduct of the waste decomposition process. The Contractor shall employ an independent testing firm to perform material evaluation tests during

construction including but not limited to soil compaction, concrete strength and pile load tests, if applicable.

The Contractor shall be responsible for providing for all utilities needed to operate the Facility including water, sewer, natural gas, electricity and phone services. The Contractor shall also be responsible for interconnection requirements with the utility grid. The routing of all utilities across the Site to the Facility shall be coordinated with the Town.

The design of the Facility shall incorporate controls as necessary to limit the migration of any explosive gases from the nearby landfilled waste into confined spaces and buildings.

## 5.4 Facility Construction

The Contractor shall be solely responsible for all activities related to construction of the Facility. All construction work shall be performed in a safe manner and shall conform to all applicable codes and standards pursuant to Section 5.19 and the conditions of all applicable permits.

All construction work shall incorporate best management practices to control erosion, sedimentation, and the potential for groundwater and downstream water quality degradation. Temporary measures shall be used as necessary to provide for sediment and turbidity removal. Hay bales, silt fences and other erosion control measures shall remain in place until construction activities are complete. The Contractor shall be responsible for the proper control of stormwater throughout the construction period.

All onsite laydown and staging shall occur within the limits of the Facility Site. The Contractor shall be responsible for obtaining additional offsite laydown and staging areas as may be required to support construction of the Facility.

The Contractor shall be responsible for all temporary facilities needed to support Facility construction including, but not limited to, temporary lighting and power, water, sanitary facilities, and field trailers.

## 5.5 Facility Operation and Maintenance

The Contractor shall be solely responsible for all activities related to operation and maintenance of the Facility. This shall include, but not be limited to, arranging for deliveries of acceptable feedstock material; properly operating and maintaining all equipment, systems, and structures; complying with all permit conditions; controlling odors, dust, noise, birds and vectors; providing qualified and trained staff; and managing material flow and residuals and liquid sidestream disposal.

The Contractor shall provide the Town with a copy of its detailed operation and maintenance (O&M) plan at least 90 days prior to startup of the Facility. The O&M plan shall address all activities from the procurement and delivery of feedstock materials through the electrical power or pipeline quality gas. The O&M plan shall also include a contingency plan for removing feedstock materials and compost materials from the Facility Site in the event that the Facility should experience an extended outage.

The Contractor shall notify the Town within 24 hours of any incidents which occur at the Facility that create nuisance conditions, such as odor or noise, or could affect the public health, safety, environment or the operation of the Facility. The Town shall be provided with copies of all correspondence related to non-compliance with any permit condition.

## 5.6 Vehicle Access

All vehicles entering and leaving the Facility Site shall use the existing main entrance road off Chebacco Road. All areas designed for vehicle traffic including all roadways and parking areas on the Facility Site shall be paved with concrete or bituminous asphalt and maintained throughout the duration of the land lease.

On site traffic flow shall be designed to minimize impacts and provide safe access to other Town operations that will remain in place at the Site including residential yard waste drop off area, DPW material storage and the private gun club(s). Any modifications and connections to the existing roadways at the Site including the unpaved portion of Chebacco Road shall be coordinated with the Town and implemented at no cost to the Town.

No trucks shall be allowed to continue past the site along Chebacco Road, travelling away from Rt. 128. A traffic notice containing the approved traffic route shall be distributed to all customers/vendors delivering feedstock materials and/or removing residuals from the Facility Site. Deliveries to and from the Facility Site shall be restricted to the hours of 7 A.M. to 4 P.M. five days per week. Any exceptions to the routing and time of day restrictions shall require prior written authorization from the Town.

The Contractor shall complete a traffic study to determine if any roadway, signage and/or signal improvements are needed on Chebacco Road in order to accommodate the expected future truck traffic.

All vehicles entering, waiting and leaving the Facility shall comply with the requirements of 310 CMR 7.11 for exhaust and sound emissions, including avoiding unnecessary idling time.

Access to the Facility Site shall be controlled by means of a chain link fence with locking gate(s). Access gates shall be closed and locked during non-receiving hours. Appropriate security measures shall be installed and operated by the Contractor.

## 5.7 Materials Receiving and Storage Facilities

All source separated organic materials delivered to the Facility and any digestate and liquid sidestreams removed from the Facility shall be delivered or removed in totally enclosed, leak tight trucks, tanks or containers. All vehicles delivering or removing materials from the Facility shall be in good working condition. All materials entering and leaving the Facility shall be handled in a manner that minimizes any odor or other nuisance conditions.

Liquid food materials delivered by tank trucks shall be delivered through a tight-coupled hose connection to a tank. Bulk food materials shall be dumped inside a totally enclosed building with closed roll-up doors. The roll-up doors shall be of the quick opening/closing type. To the maximum practical extent, food materials shall be dumped directly into a bunker with unloading screws, rather than onto the floor. It is recognized that some floor sorting may be required to handle loads containing non-processible material. All accepted materials shall be processed in a timely manner to minimize odors, dust and vectors. All receiving areas must be covered and have physical spill containment measures in place, in accordance with the Contractors Spill Control and Digestate Management Plan. The Town will consider alternative approaches that are equally protective as those outlined above.

The Contractor shall submit a draft feedstock supply plan to the Town at least 90 days prior to startup of the Facility. The draft feedstock supply plan shall specify the methods that the suppliers of source separated organics must use to collect, screen for contaminants, pre-process feedstock for acceptance at the Facility, and transport feedstock to the Facility. The Contractor shall also submit a draft feedstock inspection plan to the Town at least 90 days prior to startup of the Facility. The feedstock inspection plan shall include the procedures that the Contractor proposes to employ at the Facility to screen the incoming feedstock in order to make sure that the feedstock is suitable for acceptance including the process for rejecting unsuitable materials. The Contractor shall be responsible for checking all loads received at the Facility for compliance with the feedstock supply and inspection plans and for removing and properly disposing of any unacceptable materials. The Contractor shall have procedures and policies in place for dealing with any hazardous and/or medical waste that may be accidentally received.

The Contractor shall provide a weigh scale(s) to weigh all incoming and outgoing materials or provide an alternate measure to monitor incoming and outgoing materials. The Contractor shall provide monthly reports to the Town identifying the quantity, types and sources of all incoming feedstock material and the quantity and destination of all outbound materials. The Contractor shall also provide an annual report summarizing the monthly data for each calendar year. Monthly reports shall be submitted within 15 days of the end of the prior calendar month and the annual report shall be submitted within 30 days of the end of the calendar year. Appropriate weight records shall be maintained at the Facility by the Contractor and shall be subject to inspection and review by the Town.

## 5.8 Material Curing and Stockpiling

Due to site constraints, on-site composting of digestate or other materials will not be feasible or allowed.

## 5.9 Disposal of Residues and Liquid Sidestreams

All non-processible materials, process residues and liquid sidestreams shall be disposed offsite by the Contractor including digestate from the digester. All residues shall be stored in water tight and air tight containers during onsite storage and offsite transport. Residues shall be disposed in accordance

with all applicable regulations. Appropriate spill control and containment measures will be required at all transfer areas. Respondents shall submit a detailed digestate and liquid waste management plan (as part of Operations and Maintenance Plan) for the facility as part of the proposal in accordance with Section 7.3.11 of this RFP. The digestate and liquid management plan shall describe specific measures and management procedures that will be undertaken to control liquid transfers and provide spill prevention measures during the operating phase. Management procedures include but are not limited to, physical engineering controls, best management practices, spill clean-up protocol, and corrective measures.

## 5.10 Odor Control

Liquid food materials delivered by tank trucks shall be delivered through a tight-coupled hose connection to a tank. The tank shall be vented to an odor control system to treat air displaced by tank filling.

Bulk food materials shall be dumped inside a totally enclosed building with closed roll-up doors. The roll-up doors shall be of the quick opening/closing type. The building shall be ventilated at a rate of a minimum of 6 air changes per hour, and exhaust air shall be treated in an odor control system. The building shall be equipped with wash-down water and floor drains. Wastewater from the building shall be incorporated into processing operations or pre-treated and discharged to a sanitary sewer or tight tank in accordance with applicable regulations and specific permit conditions.

Air vented by displacement from waste receiving, feedstock slurry storage, and digestate storage shall be treated in the odor control system. Gas vented from anaerobic processes and not combusted in an engine-generator shall be treated by a flare. Dry digestion facilities utilizing drive-in bunkers rather than tanks shall be equipped with suitable purging systems to prevent release of methane and odorous gasses during filling and emptying, and to prevent explosive conditions.

Exhaust from venting of all tanks, buildings and aerobic processes shall be treated in a biofilter or other suitable odor treatment system. Exhaust from a negative-aeration composting process shall also be treated in an odor control system.

If a biofilter is used for the odor control system, it shall be designed to operate under the full range of anticipated temperature and precipitation conditions. The biofilter shall provide 90 percent removal of odor as measured by dilution olfactometry, and shall be designed to achieve the maximum Facility Site boundary property line odor concentrations specified below. The biofilter shall have a minimum empty bed residence time (EBRT) of 60 seconds unless a lower EBRT can meet performance guarantees for a biofilter supplied by a specialized biofiltration technology vendor. The biofilter shall be equipped with pre-humidification and irrigation systems to maintain sufficient moisture content.

The Facility design shall include use of an odor dispersion model such as AERMOD or equivalent showing that odor concentrations at the Facility Site property line do not exceed the following:

- One year maximum of 7 dilutions to threshold (D/T) as a 5 minute-average or 5 D/T as a one-hour average.

The model shall include emissions from the odor treatment systems, covered and open piles, and any onsite retention of contact stormwater. The Contractor shall provide the Town with a copy of the modeling protocol and results during the design process.

Respondents shall submit a detailed draft odor control plan for the Facility with their proposal submission in accordance with Section 7.3.11 of this RFP.

During operations of the Facility, the Town notes that the Board of Health has the authority to undertake enforcement actions related to violations of the odor standards outlined herein or creation of nuisance odor conditions at the Site.

## 5.11 Dust Control

The Contractor shall be responsible for controlling dust on the Facility Site at all times including during construction and routine operation. Respondents shall submit a detailed draft dust control plan for the Facility as part of their Proposal in accordance with Section 7.3.11 of the RFP. The dust control plan shall describe the specific measures and management procedures that will be taken to control dust during both the construction and operating phases. Management procedures shall include, but not be limited to, paving vehicle traffic areas, regular wet sweeping of traffic areas, and misting dust prone materials that are being screened, mixed or processed.

During operations of the Facility, the Town notes that the Board of Health has the authority to undertake enforcement actions related to violations of the dust control standards outlined herein or creation of nuisance dust conditions at the Site.

## 5.12 Noise Control

The Contractor shall be responsible for controlling noise on the Facility Site at all times including during construction and routine operation. Noise levels at the Facility Site property line shall conform to the requirements of the Town's noise by-law. The Facility shall also comply with any Town imposed permit limits for noise. Mobile equipment shall not operate outdoors during the night time hours. All stationary equipment such as fans, blowers, engine-generators, etc. shall be located inside buildings or within equipment enclosures. Respondents shall submit a detailed draft noise control plan for the Facility as part of their Proposal in accordance with Section 7.3.11 of the RFP. The noise control plan shall describe the specific measures that will be taken to control noise during both the construction and operating phases.

## 5.13 Bird and Vector Control

The Contractor shall be responsible for controlling birds and vectors on the Facility Site at all times including during construction and routine operation. Respondents shall submit a detailed draft bird and vector control plan for the Facility as part of their Proposal in accordance with Section 7.3.11 of the RFP. The bird and vector control plan shall describe the specific measures that will be taken to control birds and vectors during both the construction and operating phases. During Facility

operation, the Contractor shall employ the services of a pest control firm(s) to manage their bird and vector control programs. The pest control firm(s) shall make regular visits to the Facility Site.

## 5.14 Stormwater Management

The Contractor shall be responsible for the proper management and discharge of stormwater from the Facility Site at all times including during construction and routine operation. Stormwater management and discharge shall be performed in accordance with applicable permits.

The Facility shall be designed and managed to keep any process leachate separate from non-contact stormwater. Non-contact stormwater shall be treated and discharged in accordance with an approved storm water management plan. Leachate shall be incorporated back into the process or removed from site.

## 5.15 Lighting

Any on site lighting for the Facility shall be designed so as to not create any impacts beyond the footprint of the Facility, particularly into the surrounding wetland and protected habitat resource areas. The Contractor shall provide a lighting plan as part of their plan submissions that will include any requirements for lighting on the site access road.

## 5.16 Restoration of Facility Site and Ownership of Facilities at the end of the Lease Term

The Contractor shall be responsible for restoring the Facility Site to its original condition including removal of processed and unprocessed materials upon expiration of the Land Lease Agreement or in the event of default by Contractor which results in the Land Lease Agreement being terminated. The Town shall have the option to retain any Facility buildings and/or equipment at the end of the Land Lease Agreement or in the event the Land Lease Agreement is terminated for cause. The irrevocable letter of credit provided in Proposal Form 4 shall be used to restore the Facility Site to its original condition in the event of default by the Contractor.

## 5.17 Safety and Emergency Contingency Plan

The Contractor shall provide a Safety and Emergency Contingency Plan that covers all the potential safety and emergency conditions that could occur at the Facility. This will include the delivery of unsuitable or hazardous materials, site security and the handling of the biogas in a safe manner. A preliminary version of the Safety and Emergency Contingency Plan shall be provided with the Proposal and finalized as part of the permitting process.

## 5.18 Codes and Standards

The permitting, design, construction and operation of the Facility shall be undertaken in conformance with: (i) generally accepted engineering and construction practices, (ii) the design criteria and operational requirements specified herein, and (iii) the latest edition of all applicable standards, codes, and regulations.

## Section 6

# Proposal Evaluation Criteria and Evaluation Process

### 6.1 General

The Town will utilize the evaluation and selection process that is required by MGL Chapter 30B §§1(e) and 6(j) to identify and select a preferred vendor to develop an anaerobic digestion facility on a portion of the Hamilton Landfill Site. All Proposals received will be evaluated by a Selection Committee established by the Town as set forth herein.

Proposals that are received will be assessed in sequence for the following three separate evaluations each of which examine a diverse set of criteria which the Town considers to be of importance in the selection process:

- Each Proposal must meet a set of minimum requirements as defined by the Minimum Evaluation Criteria set forth in Section 6.2. Any Proposal which fails to meet all of the Minimum Evaluation Criteria requirements will not be evaluated any further.
- All proposals which meet the minimum requirements will then be further evaluated based on the Comparative Evaluation Criteria as discussed in Section 6.3. Proposals will receive an overall rating for the Comparative Evaluation Criterion that will then be used by the Selection Committee to determine a composite rating for each of the Proposals.
- All proposals that meet the minimum requirements will also be evaluated on the basis of the total value of the proposed payments and in-kind services to the Town (the Pricing Evaluation). This evaluation will be as described in the Section 6.4. The price evaluation will be undertaken after completion of the Comparative Evaluation Criterion. The Selection Committee will then rank the Proposals based upon the results of this financial analysis.

Once the review and rating process is completed, the Selection Committee will use the results of the Comparative Evaluation and Pricing Evaluation to identify the most advantageous proposal and make a recommendation to the Town (“Preferred Proposer”). If the recommendation is approved by the Town, the Town will enter into negotiations with the Preferred Proposer for a Land Lease Agreement. If negotiations with the initial Preferred Proposer are unsuccessful, the Town may elect to enter into negotiations with the second ranked Respondent.

The Town reserves the right to waive any minor informalities in the proposals received or the RFP; to seek clarification of the responses from any respondent as contained in their proposal; to conduct an interview with one or more of the respondents; and to reject any or all proposals.

### 6.2 Minimum Evaluation Criteria

A set of minimum requirements, to be used in evaluating the Proposals, has been identified by the Selection Committee and is summarized in this section.

Any Proposal which does not meet each of the Minimum Evaluation Criteria shall be considered non-responsive and non-responsible and eliminated from any further consideration.

Proposers must meet or exceed the following minimum requirements to be considered and evaluated in the comparative evaluation and the financial evaluation:

- a) Identification of Single Responsible Party Identified Per RFP Section 4.1
- b) Design Member Qualifications information provided per RFP Section 4.2.1
- c) Constructor Member Qualifications information provided per RFP Section 4.2.2
- d) Technology Member Qualifications information provided per RFP Section 4.2.3
- e) Respondent Financial Capability and Project Financing Plan provided in accordance with section 7.3.7 which demonstrates ability of Respondent to finance the design, permitting, construction and start-up of the proposed facility
- f) Provided properly Executed Proposal Form 2 – Affidavit from Respondent per RFP Section 4.2.5
- g) Provided properly Executed Proposal Form 3 – Payment and Performance Bond per RFP Section 4.2.5
- h) Provided properly Executed Proposal Form 4 – Letter of Credit per RFP Section 4.2.5
- i) Other Proposal Forms including:
  1. Proposal Form 1 – Statement of Ownership
  2. Proposal Form 5 – Affidavit from Design Member
  3. Proposal Form 6 – Affidavit from Construction Member
  4. Proposal Form 7 – Affidavit from Technology Member
  5. Proposal Form 8 – Affidavit from Operation Member
  6. Proposal Form 9 – Reference Facility Data (one for each reference facility)
- j) Proposal Completeness including submission of the following required items per the corresponding RFP sections:
  1. Letter of Transmittal per RFP Section 7.3.1
  2. Table of Contents per RFP Section 7.3.2
  3. Executive Summary per RFP Section 7.3.3
  4. Respondent Contact Person per RFP Section 7.3.4
  5. Respondent Team Information/Legal Structure per RFP Section 7.3.5

6. Respondent Team Relevant Experience and Proposed Process Design Approach per RFP Section 7.3.6
7. Respondent Project Financing Plan per RFP Section 7.3.7
8. Facility Description and Preliminary Design Drawings per RFP Section 7.3.8
9. Operating and Maintenance Plan and Digestate and Liquid Waste Management Plan per RFP Section 7.3.9
10. Traffic Control Plan per RFP Section 7.3.10
11. Noise, Odor, Bird and Vector Control Plans per RFP Section 7.3.11
12. Safety and Emergency Contingency Plan per RFP Section 5.17.
13. Resumes per RFP Section 7.3.12
14. Preliminary Project Schedule per RFP Section 7.3.13
15. Comments on the non-mandatory provisions of the Draft Lease Agreement per RFP Section 7.3.14. See section 6.2.1 below for further discussion of the requirements of this criterion.

### 6.2.1 Exceptions to the Draft Land Lease Agreement

A draft of the Land Lease Agreement proposed by the Town is included in Appendix A to this RFP. The draft Land Lease Agreement outlines the provisions that are mandatory and cannot be negotiated under the provisions of MGL Chapter 30B §6(j) and those that are non-mandatory and can be negotiated with the preferred vendor designated by the Selection Committee. Each Respondent shall provide any comments on the non-mandatory provisions shown in the Draft Land Lease Agreement with their proposal.

Because these provisions are non-mandatory, the Selection Committee will not evaluate any modifications proposed by a Proposer individually and they will be negotiated with the Preferred Proposer. If the Town cannot finalize a Land Lease Agreement with the Preferred Proposer, the Town may commence negotiations with the next highest ranked proposer. This process will continue until either the Town enters into a final Land Lease Agreement or the Town rejects all proposals.

## 6.3 Comparative Evaluation Criteria

Proposals meeting the Minimum Evaluation Criteria Section set forth in Section 6.2 above will be further evaluated by the Selection Committee regarding the responsiveness of the Proposal to the Comparative Evaluation Criteria outlined below and the Pricing Evaluation set forth in Section 6.4. The Town and Selection Committee reserve the right to request any additional information from the Respondent which may provide further insight regarding their proposal.

The ensuing paragraphs present a brief description of the Comparative Evaluation Criteria and considerations to be used in evaluating each of the Proposals. It is important that the Respondent

provide all necessary information required for the Selection Committee to evaluate the Comparative Evaluation Criteria. The Town reserves the right to request further information and clarifications from any and all respondents during the review process.

Each member of the Selection Committee shall evaluate the Comparative Evaluation Criteria described below and rank each Proposal. These rankings will be based upon the Respondent's responsiveness to the considerations as described below. Following completion of this review of the Comparative Evaluation Criteria, the Selection Committee will open the Price Proposals and review and evaluate the proposed financial proposals.

The Selection Committee will evaluate each of the submitted Proposals on the basis of the group of Comparative Evaluation Criteria listed below:

1. Experience of Respondent's Team including demonstration of successful implementation of the proposed technology or similar facilities;
2. Adequacy of Technical Design and Operating Approach to demonstrate that the facility complies with the requirements of this RFP; can obtain local, state and federal regulatory permits and approvals; and can be designed, constructed and operated in a manner that does not have a significant impact on human health, safety or the environment; and
3. Demonstration of Respondent's ability to obtain finance for the design, permitting, construction and operation of a similar project.

To assist in the development of each Respondent's proposal and its evaluation by the Selection Committee, the Town has developed a partial list of considerations, for each of the Comparative Evaluation Criteria listed above. These considerations as well as other items identified during the evaluation process will be utilized by the Selection Committee to evaluate and rank each Proposal and to determine which proposal is most advantageous to the Town.

### **Criterion 1 – Experience of Respondent's Team**

The Selection Committee will review each proposal to determine the experience of the Respondent's project team including the following criterion:

- Experience of individual team members (both the firms and the proposed individuals) serving in similar roles on similar projects;
- Prior experience of team members (both the firms and the proposed individuals) working together;
- Size and operating history of reference facilities worked on by project team members; and
- Qualifications of key project staff.

The Proposals will be evaluated and ranked based on the above considerations and any other items related to the Respondent's qualifications identified by the Selection Committee. Based on this review, the Selection Committee will rank the proposals to determine which is the most advantageous to the Town for this criterion. This ranking will consider the demonstrated ability of the Respondent's

team to provide the technical, construction and operational expertise necessary to implement and operate the proposed facility.

### **Criterion 2 - Technical Design and Operating Approach**

Presentation of the technical design and operating approach demonstrates that the proposed Facility can be designed, permitted, constructed and operated in accordance with the requirements of this RFP; all local, state and federal regulations; and without any significant impacts to human health, safety and the environment. At a minimum, the Selection Committee's review will be based on a detailed technical evaluation of the following:

- Facility description including the preliminary design drawings. The design information shall be reviewed for completeness, comprehensive approach, details provided on environmental controls and operations, and effectiveness of the proposed controls. The plans shall also address the proposed foundation systems for the facility structures and the incorporation of controls to meet the requirements of construction on top of and adjacent to a closed landfill site;
- Detailed discussion of the proposed technologies to be used for the anaerobic digestion portion of the operation;
- Operating and maintenance plan for the proposed facility that addresses all aspects of facility operation and maintenance including:
  - acceptance and handling of incoming materials,
  - process diagrams and equipment,
  - staffing levels including operational supervision,
  - site security including any screening and fencing,
  - fire protection systems,
  - handling plans for unacceptable materials and wastes received at the facility,
  - internal material handling and processing,
  - stormwater controls,
  - facility recordkeeping and reporting,
  - proposed plan for handling digestate and other residuals from the facility, and
  - action plan for any complaints.

The Selection Committee shall review the operation and maintenance plan for completeness, the detail provided for each area, the adequacy of the proposed procedures to mitigate any potential impacts of the Facility on human health, safety and the environment.

- Noise, odor, bird and vector control plans prepared in accordance with the provisions of this RFP. These plans should clearly outline the steps to be taken by the proposer to mitigate impacts from any and all potential nuisance conditions;

- Preliminary plan for tracking incoming waste streams and documenting sources. Plan shall include methods for monitoring any toxic materials that may be included in the source separated organic materials delivered to the facility and actions taken if any toxic materials are found (see Section 2.3.1 for general description);
- Preliminary plan for handling of digestate, liquid wastes, spills on-site and off-site, stormwater management, and separation of run-off from the handling areas, and overall site stormwater;
- Viability of proposed technologies for Facility including demonstration of successful implementation of processing and environmental control technologies at other similar installations;
- Discussion of construction and Facility start-up including steps that will be taken to coordinate with ongoing Town operations at the Landfill and mitigate off-site impacts; and
- Preliminary project schedule including approach to obtaining all the required permits.

The Proposals will be evaluated and ranked based on the above considerations and any other relevant considerations of the technical aspects of the proposed project identified by the Selection Committee during their review. Based on this review, the Selection Committee will rank the proposals to determine which is the most advantageous to the Town for this criterion. This ranking will be based on the demonstrated ability of the proposer to implement a facility that will be able to obtain permits from state and local authorities and not create any impacts to human health, safety and the environment.

During the review process, the Selection Committee may elect to make a copy of the Operations and Maintenance Plan as well as the noise, odor, bird and vector control plans available to the Board of Health and/or other boards for preliminary review and comment. The Town will provide any preliminary comments from the Board of Health and any other boards to the Contractor to determine if any significant issues may arise to be addressed during the permitting process.

### **Criterion 3 – Experience with Financing of Similar Facility**

Demonstration of Respondent’s experience with the financing of the design, permitting, construction and operation of a similar facility that accepts waste and generates electricity or produces a fuel source including:

- Evidence of the Respondent’s successful financing of one or more similar facilities;
- Ability to self-finance the project in whole or part;
- Commitment letters from external funding sources such as major banks and/or underwriters (with or without contingencies); and
- Review of Respondent’s financial statements.
  - Credit Reports
  - Certified Federal Tax Returns for last 5 years

- Additional required financial statements will be included in Addenda.

The Proposals will be evaluated and ranked based on the above considerations and any other relevant considerations identified by the Selection Committee during their review. Based on this review, the Selection Committee will rank the proposals to determine which is the most advantageous to the Town for this criterion. This ranking will be based on the Proposal showing the best financial integrity and strength as well as the greatest demonstrated ability to obtain the required financing to implement the project.

## 6.4 Price Evaluation

Following completion of the review of the Non-Price Proposals, the Selection Committee will open and review the Price Proposal portions of the proposals.

Each Price Proposal will be ranked based upon the estimated total value to the Town over the proposed lease period. The Selection Committee will calculate a Net Present Value of the total revenue payments to Town for the initial term of the Land Lease Agreement. The net present value will be calculated using a 6.0 percent discount rate. As part of the review of the Price Proposals, the Town reserves the right to consider the proposed value provided in each Price Proposal and include a discount for proposals that include potential risk and to independently develop and include a monetary value for certain in-kind benefits.

The Price Proposal having the highest Net Present Value as calculated by the Selection Committee will be determined to be the most advantageous to the Town for this criterion and the other Price Proposals being ranked less advantageous in proportion to the Net Present Value of the most advantageous Price Proposal.

## 6.5 Final Evaluation of Proposals

Following completion of the review of the Non-Price and Price Proposals, the Selection Committee will discuss the results of the review and make a recommendation as to which Proposal is determined to be the most advantageous to the Town. This recommendation shall be documented in a written report that discusses each Proposal, the specific considerations and concerns of the Selection Committee and the reasons for the selection of the most advantageous Proposal.

After the recommendation process is complete, the Town will enter into negotiations of the Land Lease Agreement with the Selected Respondent. If a final agreement cannot be reached with a proposer, the Town may elect to enter into negotiations with the next highest ranked Respondent or to reject all the Proposals. This process will continue until either the Town enters into a Land Lease Agreement or the Town rejects all proposals.

## Section 7

# Proposal Submission Requirements

### 7.1 Submission of Proposals

Proposals are due at the time, date, and place and in the manner as set forth in Section 3.2 of this RFP. Proposals shall be contained in two separate, sealed packages. One package shall include the Respondent's Non-Price Proposal and the other package the Respondent's Price Proposal.

### 7.2 Organization of Proposals

The Town requires that each Proposal shall conform to the format set forth in Tables 7-1 and 7-2 below, including the page limitations listed for each section. Text shall be on 8½" by 11" paper and drawings shall be 11" by 17". One printed side of one piece of paper is considered as one page to determine the number of pages. All full-page illustrations, figures and tables are to be included in the page count. Each section shall be separately paginated, and no unused pages in one section can be used in another. Pages shall be bound into spiral bound or three-ring binders. Respondents are encouraged to print their Proposal on double sides to the extent possible. The Town, in its sole discretion, may reject any Proposal that does not conform to the outline or page limits listed herein.

**Table 7-1  
Non-Price Proposal Contents and Page Limitations**

<i>Section Title</i>	<i>Maximum Number of Pages</i>
Letter of Transmittal	2
Table of Contents	As Needed
Executive Summary	3
Section 1 – Respondent Contact Person	1
Section 2 – Respondent Team Information/Legal Structure	10
Section 3 – Respondent Team Relevant Experience	30
Section 4 – Respondent Financial Capability and Project Financing Plan	10
Section 5 – Facility Description and Preliminary Design Drawings	30
Section 6 – Operation and Maintenance Plan including Digestate & Liquid Waste Management Plan	12
Section 7 – Traffic Control Plan	10
Section 8 – Noise, Odor, Bird and Vector Control Plans	40
Section 9 – Resumes	30
Section 10 – Comments on Draft Lease Agreement	As Needed

**Table 7-2**  
**Price Proposal Content and Page Limitations**

<i>Section Title</i>	<i>Maximum Number of Pages</i>
Letter of Transmittal	1
Price Proposal Form	1

The minimum font size for all sections of the Proposal shall be 11 point excluding tables using Microsoft Excel software (or its equivalent) for which the minimum font size shall be 10 point. The Town has the right to require Proposer's to submit additional information or back-up evidence for any portion of the Proposal.

## 7.3 Contents of Non-Price Proposal

Unless otherwise noted, the Proposal shall include the required information of each member of the Respondent, including the lead firm, all joint venture members and any other entity that would have significant responsibilities in performing the scope of services including the Design Member, Constructor Member, Technology Member and Operating Member.

### 7.3.1 Letter of Transmittal

The Letter of Transmittal shall be prepared on the letterhead of the firm that would execute the Land Lease Agreement with the Town and signed by a representative of such firm who is empowered to enter into contracts for at least the anticipated value of this project. The Letter of Transmittal shall be addressed to the Town contact person designated in Section 3.3 of the RFP and should contain at least the following information:

- a) A statement that said firm is the Respondent to the Town's RFP;
- b) A statement that the Respondent has completely reviewed, understands and agrees to be bound by the requirements of this RFP;
- c) A statement that the Respondent is prepared to meet the Town's procurement schedule; and
- d) A statement that the Respondent's team meets the Minimum Qualifications Criteria set forth in Section 4 of this RFP.

### 7.3.2 Table of Contents

The Table of Contents shall follow the major section and subsection requirements outlined in this Section 7. Tables, illustrations, figures and appendices should be indicated in the Table of Contents.

### 7.3.3 Executive Summary

The purpose of the Executive Summary is to provide an overview of the Respondent's qualifications to perform the scopes of services. The Executive Summary shall be a non-technical review that highlights the key features of the Respondent's Proposal. At a minimum, the Executive Summary should contain the following information:

- a) Name and corporate headquarters address of the Respondent;
- b) Description of the Respondent's team and legal structure (corporation, joint venture, subcontractors);
- c) The general and specific capabilities and experience of the Respondent's team that will benefit the Town; and
- d) Examples of relevant anaerobic digestion facilities constructed and operated under the Respondent's management.

#### **7.3.4 Section 1 - Respondent Contact Person**

The Respondent shall designate a contact person that will serve as the single point of contact for the Respondent. This section shall include the contact person's name, title, company affiliation, address, telephone number, FAX number and e-mail address. All communications from the Respondent to the Town and from the Town to the Respondent shall come from or be addressed to the designated contact person.

#### **7.3.5 Section 2 - Respondent Team Information/Legal Structure**

This section shall include at least the following:

- a) This section shall clearly state which entity is: (i) the Respondent and would execute the Lease Agreement with the Town; (ii) the Design Member(s) who will provide the design services; (iii) the Constructor Member(s) who will provide the construction services; (iv) the Technology Member(s) who will provide the anaerobic digestion technology and (v) the Operating Member(s) who will operate the Facility. Detailed information regarding the legal structure and organization of the above Respondent team members, including all of the legal and contractual relationships among the individuals and/or entities shall be provided;
- b) A short business history of the Respondent, the Design Member(s), the Constructor Member(s), the Technology Member(s) and the Operating Member (s) including any prior experience working together on other similar projects;
- c) Detailed information on each of the firms included in Item (b) above, including parent companies, affiliates and subsidiaries which would assist in performing the scopes of services; and
- d) Filled-in and properly signed and notarized Proposal Forms 1, 2, 5, 6, 7, and 8 contained in Section 8 of this RFP.

#### **7.3.6 Section 3 - Respondent Team Relevant Experience and Proposed Process Design Approach**

The intent of this section is for the Respondent to clearly and completely describe how its team meets each and every one of the Minimum Qualifications Criteria set forth in Section 4 of this RFP. In developing this section, the text shall clearly distinguish and state which entity actually performed the work for which they are claiming experience. Where it is the experience of a parent, affiliate or

subsidiary that is listed as a relevant qualification, this fact shall be explicitly noted and the relationship linking the experience to this project shall be described.

#### **7.3.6.1 Respondent Experience**

Identify and describe the Respondent's experience in developing similar projects. Provide at least two reference facilities where the Respondent was the lead developer and provide detailed descriptions of the Respondent's responsibilities on each of these projects. Include the owner's name, location and a contact reference (name, title, address, telephone number) for each project. The Respondent shall include in this section Proposal Form 9 contained in Section 8 of this RFP for each reference facility.

Include a current photograph of each reference facility.

#### **7.3.6.2 Design Member(s) Experience**

Identify and describe at least one anaerobic digestion facility in which the Respondent or its Design Member served as the project design engineer and provide evidence that such project(s) meet the criteria stated in Section 4.2.1 of this RFP. Provide detailed descriptions of the Respondent's and/or Design Member's responsibilities on each of these projects. Provide the size and type(s) of the technology used, the owner's name, location and a contact reference (name, title, address, telephone number) for each project. The Respondent shall include in this section Proposal Form 9 contained in Section 8 of this RFP for each reference facility, if not already provided.

Include a current photograph of each reference facility if not already provided.

Provide evidence of Massachusetts professional engineer's licensure.

#### **7.3.6.3 Constructor Member(s) Experience**

Identify and describe at least one anaerobic digestion facility in which the Respondent or its Constructor Member served as the project constructor and provide evidence that such project meets the criteria stated in Section 4.2.2 of this RFP. Provide detailed descriptions of the Respondent's and/or Constructor Member's responsibilities on each of these projects. Provide the size and type(s) of the technology used, the owner's name, project location and a contact reference (name, title, address, telephone number) for each project. The Respondent shall include in this section Proposal Form 9 contained in Section 8 of this RFP for each reference facility if not already provided.

Include a current photograph of each reference facility if not already provided.

Provide evidence of a Massachusetts general contractor's licensure.

#### **7.3.6.4 Technology Member(s) Experience**

Identify and describe at least three anaerobic digestion facilities in which the Respondent or its Technology Member provided anaerobic digestion technology and provide evidence that such projects meet the criteria stated in Section 4.2.3 of this RFP. Provide detailed descriptions of the Respondent's and/or Technology Member's responsibilities on each of these projects. Provide the size and type(s) of the technology used, the owner's name, project location and a contact reference (name, title, address, telephone number) for each project. The Respondent shall include in this section Proposal Form 9 contained in Section 8 of this RFP for each reference facility if not already provided.

Include a current photograph of each reference facility if not already provided.

#### **7.3.6.5 Operating Member(s) Experience**

Identify and describe at least two anaerobic digestion facilities which the Respondent or Operating Member operates or has operated and provide evidence that such projects meet the criteria stated in Section 4.2.4 of this RFP. Provide detailed descriptions of the Respondent's and/or Operating Member's responsibilities on each of these projects. Provide the size and type(s) of the technology used, the owner's name, project location and a contact reference (name, title, address, telephone number) for each project. The Respondent shall include in this section Proposal Form 9 contained in Section 8 of this RFP for each reference facility if not already provided.

Include a current photograph of each reference facility if not already provided.

#### **7.3.7 Section 4 - Respondent Financial Capability and Project Financing Plan**

In order to demonstrate the Respondent's ability to meet the minimum financial criteria stated in Section 4.2.5 of this RFP, the Respondent shall include in this section Proposal Forms 3 and 4 contained in Section 8 of this RFP. The forms shall be filled in, signed and notarized as appropriate. The Respondent shall also submit its proposed plan to finance the Facility.

#### **7.3.8 Section 5 – Facility Description and Preliminary Design Drawings**

The Respondent shall provide a detailed narrative description of the Facility that it proposes to develop. The description shall include all design and operational aspects including all proposed technologies. The proposed Facility shall be designed and operated in accordance with the technical requirements specified in Section 5 of this RFP. The Facility description shall include the following at a minimum:

- a) Waste receiving and storage;
- b) Waste digestion and composting;
- c) Energy recovery; and
- d) Residuals management and storage.

The Respondent shall provide preliminary drawings for their proposed Facility design. All drawings shall be on 11" x 17" sheets. The following preliminary design drawings shall be submitted at a minimum:

- a) Site plan showing all roadways, building structures, outdoor activities, etc.;
- b) General arrangement drawings (plan and section views) of the Facility that show the location of major equipment, processes, proposed buildings, etc.;
- c) Architectural drawings (elevation views) showing the proposed exterior appearance of the Facility; and
- d) Process flow and mass and energy balance diagrams.

### 7.3.9 Section 6 – Operating and Maintenance Plan

The Respondent shall include a detailed narrative as to how the Facility will be operated and maintained. The Respondent shall demonstrate a clear and complete understanding of all operating and maintenance activities required to ensure that the Facility operates reliably and in accordance with all permit conditions. The Respondent's operation and maintenance plan shall also address how they will respond to process upsets and potential emergency conditions. A preliminary organization chart shall also be provided showing the administrative, operating and maintenance positions; the number of staff in each position; and any specific training and/or certification required for specific positions. The O&M Plan should also include a separate plan section addressing the management and spill control and prevention of digestate and incoming liquid wastes. This plan should include specific measures and management procedures that will be undertaken to control liquid transfers and provide spill prevention measures during the operating phase, including but not limited to, physical engineering controls, best management practices, spill cleanup protocol, and corrective measures.

### 7.3.10 Section 7 – Traffic Control Plan

The Respondent shall include a detailed plan for controlling truck traffic to and from the Site consistent with the technical requirements specified in Section 5 of this RFP. The traffic control plan shall include but not be limited to the following information:

- a) The type, size and quantity of the trucks that will access the Site;
- b) The designated roadways that trucks will take to and from the Site;
- c) The hours and days of the week that feedstock materials will be accepted and any finished compost product shipped;
- d) Provisions for perimeter site security;
- e) Provisions for traffic controls at the site entrance (e.g., signs, lights, turning lanes, etc.); and
- f) On-site weighing facilities.

### 7.3.11 Section 8 – Noise, Odor, Dust, Bird and Vector Control Plans

The Respondent shall include detailed plans for controlling noise, odor, dust, birds and vectors consistent with the technical requirements specified in Section 5 of this RFP. The control plans shall include but not be limited to the following information:

- a) Details on the design and operation of proposed control technologies;
- b) Standard operating procedures specific to controlling noise, odor, dust, birds and vectors;
- c) Maximum design noise and odor levels at the Facility Site boundary;
- d) Procedures for responding to and addressing complaints; and
- e) Provisions for contracting with outside pest control services.

### **7.3.12 Section 9 – Resumes**

The Respondent shall include resumes for the key staff associated with the Respondent, Design Member(s), Constructor Member(s), Technology Member(s) and Operating Member(s). Provide an organizational chart to show the lines of reporting.

### **7.3.13 Section 10 – Project Schedule**

The Respondent shall provide a narrative of its plan for the development. The Respondent shall also include a preliminary project schedule showing the timing and duration of permitting, design, equipment procurement, construction and startup/commissioning activities.

### **7.3.14 Section 11 – Comments on Draft Land Lease Agreement**

The Respondent shall include their comments, if any, on the Draft Land Lease Agreement included as Attachment A to this RFP. Comments shall be provided in a list form or as a redline markup of the word document.

## **7.4 Contents of Price Proposal**

### **7.4.1 Letter of Transmittal**

The Letter of Transmittal shall be prepared on the letterhead of the firm that would execute the Lease Agreement with the Town and signed by a representative of such firm who is empowered to enter into contracts for at least the anticipated value of this project. The Letter of Transmittal shall be addressed to the Town contact person designated in Section 3.3 of the RFP and should state that this Price Proposal accompanies and is part of the Non-Price Proposal submitted on the same date.

### **7.4.2 Price Proposal Form**

Respondent shall include in this section Proposal Form 10 contained in Section 8 of this RFP.

## Section 8

# Proposal Forms

Proposal forms attached.

*The content of this Form may not be modified by the Respondent.*

**PROPOSAL FORM 1  
STATEMENT OF OWNERSHIP**

The Respondent shall set forth the names and addresses of all stockholders in the corporation who own ten percent or more of its stock of any class, or all partners in the partnership who own ten percent or greater interest therein; if none, the Respondent must state "none". If one or more such stockholder or partner is itself a corporation or partnership, the stockholders owning ten percent or more of that corporation's stock, or the individual partners owning ten percent or greater interest in that partnership shall also be listed; if none, the Respondent must state "none." This disclosure shall be continued until names and addresses of every individual stockholder, and individual partner exceeding the ten- percent ownership criteria of each corporation or partnership listed has been identified. Multiple copies of this form may be provided as required.

NAME

ADDRESS

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Signature of Respondent

Date

Name of Respondent (Print or Type)

Title

*The content of this Form may not be modified by the Respondent.*

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**PROPOSAL FORM 2**  
**AFFIDAVIT FROM RESPONDENT**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_, who after being by me duly sworn, deposed and said that he is fully authorized representative of \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014 and said affiant further stated:

- 1) That Respondent employed no person, corporation, firm, association, or other organization, ("Persons") either directly or indirectly, to secure the public contract under which he received payment, other than Persons regularly employed by the Respondent whose services in connection with the project or in securing the public contract were in the regular course of their duties for Respondent; and
- 2) That if the Respondent is awarded the contract, that no payment was or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to Persons regularly employed by the Respondent whose services in connection with the project were in the regular course of their duties for Respondent.
- 3) I further warrant that no Person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by the Respondent.
- 4) Said Proposal is genuine and the Respondent has not colluded, conspired, or agreed directly or indirectly with any other Respondent to offer a sham or collusive Proposal. I understand that collusive bidding and all similar activity is a violation of Town, state, and federal law, and can result in fines, prison sentences and civil damages. I agree to abide by all conditions of this procurement and our Proposal, and certify that I am authorized to sign for this Respondent.
- 5) Said Respondent has not in any manner directly or indirectly agreed with any other Persons to fix the proposal price of affiant or any other Respondent, or to fix any overhead profit or cost element of said proposal price, or that of any other Respondent, or to induce any other person to refrain from proposing.
- 6) Said Proposal is not intended to secure an unfair advantage or benefit from the Town or in favor of any Person interested in the proposed contract.
- 7) All statements contained in said Proposal are true, correct and complete.

Town of Hamilton  
Request For Proposal  
December 2013

*Proposal Form 2*  
*Page 1 of 2*

Final – December 11, 2013

- 8) Said Respondent hereby certifies that no officer of the companies comprising the Respondent, or any affiliates of the companies comprising the Respondent, has been convicted of fraud by the federal government or by any government entity in Massachusetts or any other state within the last ten years.
- 9) Said Respondent hereby certifies that the Respondent, or any affiliates of the companies comprising said Respondent, have not filed for bankruptcy within the previous ten years.
- 10) Neither affiant nor any member of his company has divulged information regarding said Proposal or any data relative thereto to any other person, firm, or corporation, except to those persons, firms or corporations that comprise the Respondent's team as set forth in the Proposal.
- 11) I acknowledge receipt of addenda:

<u>No.</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- 12) Said Respondent hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
 (Signature of Respondent)

\_\_\_\_\_  
 (Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
 Notary Public  
 My commission expires: \_\_\_\_\_

**PROPOSAL FORM 3**  
**PAYMENT AND PERFORMANCE BOND AFFIDAVIT FROM SURETY**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_,  
who after being by me duly sworn, deposed and said that he is a fully authorized representative  
of \_\_\_\_\_ (hereinafter referred to as "Surety")  
and said affiant stated:

- 1) That he is familiar with \_\_\_\_\_ (hereinafter referred to as  
"Respondent"), the party who submitted the Proposal for the permitting, financing, design,  
construction, operation and ownership of a source separated organic waste processing  
facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the  
Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) That if Respondent is awarded the contract by the Town, Surety will issue payment and  
performance bonds in the amount of up to \_\_ million dollars (\$ \_\_,000,000) for the benefit of  
the Town in case the Respondent should default on any of the obligations contained in the  
contract and such default caused the contract to be terminated, subject to the Surety's  
review of the terms and conditions of the contract and bond forms and assuming that no  
material adverse changes have occurred to the Respondent's financial condition between the  
date of this Proposal Form 3 and the date that the payment and performance bonds are to be  
issued. Prior to such termination, the contract will provide the Respondent with reasonable  
notice of, and opportunity to cure such defaults.
- 3) That Surety has a rating of at least "A" (or the equivalent) from an appropriate recognized  
rating agency and Surety is licensed as a Surety Company in the Commonwealth of  
Massachusetts.
- 4) Said Surety hereby certifies the truth and accuracy of the above statements under the pains  
and penalties of perjury.

\_\_\_\_\_  
(Signature of Surety)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**PROPOSAL FORM 4**  
**IRREVOCABLE LETTER OF CREDIT AFFIDAVIT FROM BANK**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_, who after being by me duly sworn, deposed and said that he is A fully authorized representative of \_\_\_\_\_ (hereinafter referred to as "Bank") and said affiant stated:

- 1) That he/she is familiar with \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) That if Respondent is awarded the contract by the Town, Surety will issue a letter of credit in the amount of up to \_\_ million dollars (\$ \_\_,000,000) for the benefit of the Town ("Letter of Credit") in case the Respondent should default on any of the obligations contained in the contract and such default caused the contract to be terminated, assuming that no material adverse changes have occurred to the Respondent's financial condition between the date of this Proposal Form 4 and the date that said Letter of Credit is to be issued. Prior to such termination, the contract will provide the Respondent with reasonable notice of, and opportunity to cure such defaults.
- 3) That the Bank has a credit rating on its long-term debt of at least "A" (or the equivalent) from an appropriate recognized rating agency and that the Letter of Credit to be issued by the Bank, and claims made pursuant to such Letter of Credit will be governed by the provisions of the Uniforms Customs and Practices for Documentary Credits (1993 Version), International Chamber of Commerce Publication No. 500 ("UCP"). As to matters not governed by the UCP, said Letter of Credit shall be governed and construed in accordance with the laws of the Commonwealth of Massachusetts.
- 4) Said Bank hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
(Signature of Bank)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**PROPOSAL FORM 5**  
**AFFIDAVIT FROM DESIGN MEMBER**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_,  
who after being by me duly sworn, deposed and said that he is a fully authorized representative  
of \_\_\_\_\_ (hereinafter referred to as "Design  
Member") and said affiant stated that:

- 1) The Design Member is familiar with \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) The Design Member has read the Proposal sections which refer to the Design Member and: (i) certifies that such statements are true and correct; and (ii) consents to the use of such statements in the Proposal.
- 3) The Design Member and the Respondent have agreed that: if the Respondent is selected to design, construct, operate and maintain the Facility, the Design Member will be the design engineer during the design and construction of the Facility.
- 4) The Design Member hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
(Signature of Design Member)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**PROPOSAL FORM 6**  
**AFFIDAVIT FROM CONSTRUCTOR MEMBER**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_,  
who after being by me duly sworn, deposed and said that he is fully authorized representative  
of \_\_\_\_\_ (hereinafter referred to as  
"Constructor Member") and said affiant stated:

- 1) The Constructor Member is familiar with \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) The Constructor Member has read the Proposal sections which refer to the Constructor Member and: (i) certifies that such statements are true and correct; and (ii) consents to the use of such statements in the Proposal.
- 3) The Constructor Member and the Respondent have agreed that: if the Respondent is selected to design, construct, operate and maintain the Facility, the Constructor Member will be the general construction contractor for the construction of the Facility.
- 4) The Constructor Member hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
(Signature of Constructor Member)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public  
My commission expires: \_\_\_\_\_

**PROPOSAL FORM 7**  
**AFFIDAVIT FROM TECHNOLOGY MEMBER**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_,  
who after being by me duly sworn, deposed and said that he is a fully authorized representative  
of \_\_\_\_\_ (hereinafter referred to as  
"Technology Member") and said affiant stated:

- 1) The Technology Member is familiar with \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) The Technology Member has read the Proposal sections which refer to the Technology Member and: (i) certifies that such statements are true and correct; and (ii) consents to the use of such statements in the Proposal.
- 3) The Technology Member and the Respondent have agreed that: if the Respondent is selected to design, construct, operate and maintain the Facility, the Technology Member will supply the anaerobic digestion and covered aerated static pile composting technology to be installed in the Facility.
- 4) The Technology Member hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
(Signature of Technology Member)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

**PROPOSAL FORM 8**  
**AFFIDAVIT FROM OPERATING MEMBER**

COMMONWEALTH OF MASSACHUSETTS  
TOWN OF HAMILTON

BEFORE ME, the undersigned authority, personally came and appeared \_\_\_\_\_,  
who after being by me duly sworn, deposed and said that he is a fully authorized representative  
of \_\_\_\_\_ (hereinafter referred to as "Operating  
Member") and said affiant stated:

- 1) The Operating Member is familiar with \_\_\_\_\_ (hereinafter referred to as "Respondent"), the party who has prepared the Proposal for the permitting, financing, design, construction, operation and ownership of a source separated organic waste processing facility ("Facility") on land to be leased by the Town of Hamilton ("Town") to the Respondent, which Proposal will be received by the Town on \_\_\_\_\_, 2014.
- 2) The Operating Member has read the Proposal sections which refer to the Operating Member and: (i) certifies that such statements are true and correct; and (ii) consents to the use of such statements in the Proposal.
- 3) The Operating Member and the Respondent have agreed that: if the Respondent is selected to design, construct, operate and maintain the Facility, the Operating Member will operate and maintain the Facility.
- 4) The Operating Member hereby certifies the truth and accuracy of the above statements under the pains and penalties of perjury.

\_\_\_\_\_  
(Signature of Operating Member)

\_\_\_\_\_  
(Printed Name and Title)

THE COMMONWEALTH OF MASSACHUSETTS

Essex, ss.

On this \_\_\_\_\_ day of \_\_\_\_\_, 2014, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was  Photographic identification with signature issued by a federal or state governmental agency,  oath or affirmation of a credible witness,  personal knowledge of the undersigned, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

*The content of this Form may not be modified by the Respondent.*

**PROPOSAL FORM 9  
REFERENCE FACILITY DATA  
(Complete One Form for Each Reference Facility)**

Facility Name: \_\_\_\_\_

Facility Address: \_\_\_\_\_

Facility Owner: \_\_\_\_\_

Facility Operator: \_\_\_\_\_

Contact Person for Owner: \_\_\_\_\_

Contact Person's Title: \_\_\_\_\_

Contact Person's Address: \_\_\_\_\_

Contact Person's Phone Number: \_\_\_\_\_

Contact Person's Email Address: \_\_\_\_\_

Facility Capacity: \_\_\_\_\_

Number, Size and Type of Anaerobic Digestion Technology Used: \_\_\_\_\_

\_\_\_\_\_

Type of Odor Control Technology Used: \_\_\_\_\_

\_\_\_\_\_

Types and Quantity of Feed Stock Processed: \_\_\_\_\_

\_\_\_\_\_

Sources of Feed Stock Materials: \_\_\_\_\_

\_\_\_\_\_

Facility Startup Date: \_\_\_\_\_

Description of Respondent's, Design Member's, Constructor Member's, Technology Member's and/or Operating Member's Role/Responsibilities on Project: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PROPOSAL FORM 10  
PRICE PROPOSAL**

*Anaerobic Digestion Facility*

Annual Lease Payment: \_\_\_\_\_

Lease Payment Annual Escalation Percentage: \_\_\_\_\_

Share of Energy Revenues: \_\_\_\_\_

Drop-Off Area for Residential Source Separated Putresible Organic Waste: Provided at No Cost

Acceptance of up to 1,500 Tons per Year of Putresible Organic Waste Collected Curbside: Provided at No Cost

\_\_\_\_\_  
Signature of Respondent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

**Appendix A**  
**Draft Land Lease Agreement**

## LEASE AGREEMENT

### SOURCE SEPARATED ORGANIC WASTE PROCESSING FACILITY

THIS LEASE AGREEMENT (“*Agreement*”) is made and entered into \_\_\_\_\_, 2014 (the “*Effective Date*”), by and between the Town of Hamilton, a municipality of the Commonwealth of Massachusetts (“*Lessor*”) and \_\_\_\_\_, a \_\_\_\_\_ (“*Lessee*”). Lessor and Lessee are sometimes hereinafter referred to individually as a “*Party*” and collectively as the “*Parties*.”

### SECTION 1.

#### DEFINED TERMS; RULES OF INTERPRETATION

Defined Terms. Capitalized terms used in this Agreement shall have the meanings ascribed to them in this Agreement, or as otherwise set forth below:

“*Agreement*” means this Lease Agreement, including all Exhibits and attachments hereto.

“*Applicable Legal Requirements*” means any present and future law, act, rule, requirement, order, by-law, ordinance, regulation, judgment, decree, or injunction of or by any Governmental Authority, ordinary or extraordinary, foreseen or unforeseen, which may at any time be applicable to the Premises or the Facility, or any part thereof or to any condition or use thereof, and all licenses, permits and other governmental consents which are or may be required for the use and occupancy of the Premises for the installation, operation, maintenance and removal of the Facility.

“*Bankrupt*” means that a Party or other entity (as applicable): (i) is dissolved (other than pursuant to a consolidation, amalgamation or merger); (ii) becomes insolvent or is unable to pay its debts or fails (or admits in writing its inability) generally to pay its debts as they become due; (iii) makes a general assignment, arrangement or composition with or for the benefit of its creditors; (iv) has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditor’s rights, or a petition is presented for its winding-up, reorganization or liquidation, which proceeding or petition is not dismissed, stayed or vacated within twenty (20) Business Days thereafter; (v) commences a voluntary proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors’ rights; (vi) seeks or consents to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official for it or for all or substantially all of its assets; (vii) has a secured party take possession of all or substantially all of its assets, or has a distress, execution, attachment, sequestration or other legal process levied, enforced or sued on or against all or substantially all of its assets; (viii) causes or is subject to any event with respect to it which, under the Applicable Legal Requirements of any jurisdiction, has an analogous effect to any of the events specified in clauses (i) to (vii) inclusive; or (ix) takes any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the foregoing acts.

“*Business Day*” means any day except a Saturday, Sunday, or a Federal Reserve Bank holiday.

**“Commercial Operation”** means that the Facility is ready for regular, daily operation, has been connected to the LDC System, has undergone testing that shows that the Facility is capable of delivering electricity generated by the Facility for eight (8) continuous hours using such instruments and meters as have been installed for such purposes and is in compliance with Applicable Legal Requirements in all respects.

**“Commercial Operation Date”** means the date specified in the Completion Notice delivered pursuant to Section 6.8.

**“Completion Notice”** means the written notice delivered by the Lessee to the Lessor pursuant to Section 6.8 that the Facility has achieved Commercial Operation, and accompanied by a copy of the results of the Facility acceptance testing.

**“Construction Commencement Date”** means the date when Lessee commences construction of the Facility, which shall include at a minimum the deployment of equipment and the commencement of site preparation work on the Lease Area.

**“Contract Year”** means each consecutive 12-month period commencing on the Commercial Operation Date.

**“Commercial Operation Date”** means the date specified in the Completion Notice.

**“Decommissioning Assurance”** means an amount equal to \$\_\_\_\_\_ to fully cover the cost of decommissioning the Facility and restoring the Premises as specified in this Agreement.

**“Delivery Point”** means the point at which the Facility is interconnected to Lessor’s intertie with the Local Distribution Company on the Host’s side of the Local Distribution Company’s electric meter.

**“Early Termination Price”** means, for the applicable Contract Year, either (i) the amount listed on Exhibit D, attached hereto or (ii) the Fair Market Value of the Facility on an installed and running, or going-concern basis, as determined in accordance with Section 7.1, whichever amount is greater.

**“Effective Date”** is the date first set forth in the introductory paragraph of this Agreement.

**“Environmental Attributes”** means any offset, credit, benefit, reduction, rebate, financial incentive, tax credit and other beneficial allowance that is in effect as of the Effective Date or may come into effect in the future, including, to the extent applicable and without limitation, RECs, carbon credits, Green-e products, investment tax credits, production tax credits, forward capacity market credits or other credits earned by or in connection with, or otherwise attributable to, the Facility, or the electricity produced by the Facility, under or with respect to the Federal Clean Air Act (including, but not limited to, Title IV of the Clean Air Act Amendments of 1990), any state or federal renewable portfolio standard or renewable energy standard or other portfolio purchase mandate or requirement, including the renewable portfolio standard of the Commonwealth of Massachusetts, the Regional Greenhouse Gas Initiative or any statute or regulation implementing the foregoing, any federal or other applicable act or regulation relating

to carbon emissions or a cap or other limitation thereupon or any other state, federal or other Governmental Authority act, law or regulation that provides offsets, credits, benefits, reductions, allowances or incentives of any kind or nature related to electricity generation, generation capacity or emissions (or the lack or avoidance thereof) or the laws, rules and standards of the United Nations Framework Convention on Climate Changes or the Kyoto Protocol or the UNFCCC or crediting “early action” with a view thereto.

“*Events of Default*” has the meaning set forth in Section 11.

“*Extension Term*” shall have the meaning set forth in Section 3.2 herein.

“*Facility*” means the source separated organic waste processing facility installed at the Premises, including but not limited to the Facility Assets.

“*Facility Assets*” means each and all of the elements of which the Facility is composed, including Lessee’s structures and equipment installed on the Premises, electric lines and conduits required to connect such equipment to the Delivery Point and the LDC System, protective and associated equipment, improvements, metering devices, and other tangible and intangible assets, permits, property rights and contract rights reasonably necessary for the construction, operation, and maintenance of the Facility.

“*Final Drawings*” means the final stamped engineering drawings for the Facility, and the installation thereof at the Premises, to be prepared by Lessee at its sole cost and expense.

“*Financing Party*” or “*Financing Parties*” means any and all Persons or successors in interest thereof, directly or indirectly, (i) lending money, (ii) extending credit, (iii) investing equity capital or (iv) providing or financing any Lease or other arrangement including tax equity investments for or in connection with any of the following: (a) the construction, term or permanent financing of the Facility; (b) working capital or other ordinary business requirements of the Facility (including the maintenance, repair, replacement or improvement of the Facility); (c) any development financing, bridge financing, credit support, credit enhancement or interest rate protection in connection with the Facility; or (d) the purchase of the Facility and the related rights. For avoidance of doubt, “Financing Party” shall include an Equipment Leasing Party, if any, any Person providing any of the foregoing categories of financing to Equipment Leasing Party with respect to the Facility.

“*Force Majeure Event*” means an event, occurrence or circumstance, or combination thereof, beyond the reasonable control of a Party which wholly or partly prevents or delays the performance of any obligation arising under this Agreement, and is not the result of the negligence of the Claiming Party, and which by the exercise of reasonable due diligence, the Claiming Party is nonetheless unable to overcome or avoid or cause to be avoided, including, but not limited to: (a) acts of God, terrorism, war, blockade, riot, civil disturbance or sabotage; (b) any effect of unusual natural elements, including fire, subsidence, earthquakes, floods, lightning, tornadoes, unusually severe storms, or similar cataclysmic occurrence or other unusual natural calamities; (c) explosion, accident or epidemic; and (d) general strikes, lockouts or other collective or industrial action by workers or employees, or other labor difficulties; provided, that neither the lack of money nor changes in market conditions shall constitute a Force Majeure Event.

“**Governmental Authority**” means any federal, state, regional, county, town, city or municipal government or any department, agency, bureau or other administrative, regulatory or judicial body of any such government, including the Town in its legislative and regulatory capacity, but not in its capacity as Lessor.

“**Hazardous Materials**” means those substances defined, classified, or otherwise denominated as a “hazardous substance,” “toxic substance,” “hazardous material,” “hazardous waste,” “hazardous pollutant” “toxic pollutant” or oil in the Applicable Legal Requirements or in any regulations promulgated pursuant to the Applicable Legal Requirements.

“**Initial Rent**” means an annual rent amount shown in Exhibit D. Initial Rent shall be paid on a prorated basis for use of the Premises for the number of days from the Effective Date to the Commercial Operation Date as further described herein.

“**Initial Term**” shall have the meaning set forth in Section 3.1 herein.

“**Interest Rate**” means a fluctuating interest rate per annum equal to the sum of the lesser of (i) the Prime Rate as stated in the “Bonds, Rates & Yields” section of The Wall Street Journal on the Effective Date and thereafter on the first day of every calendar month, plus two (2) percentage points, or (ii) the maximum rate permitted by law. In the event that such rate is no longer published in The Wall Street Journal or such publication is no longer published, the Interest Rate shall be set using a comparable index or interest rate selected by Lessor and reasonably acceptable to Lessee. The Interest Rate hereunder shall change on the first day of every calendar month. Interest shall be calculated daily on the basis of a year of 365 days and the actual number of days for which such interest is due.

“**LDC**” means the regulated electric local distribution company that provides electric distribution service to the Lessor.

“**LDC System**” means the electric distribution Facility operated and maintained by the LDC.

“**Lessee**” has the meaning set forth in the introductory paragraph of this Agreement.

“**Lessor**” has the meaning set forth in the introductory paragraph of this Agreement.

“**Lease Area**” means the area on the Premises in which Lessor grants Lessee a lease to install and operate the Facility, as shown on the plan attached hereto as Exhibit F.

“**Premises**” means certain property owned by Lessor located at Chebacco Road, in Hamilton, Massachusetts. A legal description of the Premises is set forth in Exhibit E. The Premises shall include the Lease Area.

“**Term Rent**” means an annual rental amount equal to the amount for the applicable Contract Year set forth in Exhibit D.

“**Termination Date**” means the earlier to occur of (i) the last day of the Term, (ii) the date of termination of this Agreement as the result of an Event of Default, and (iii) the date of termination pursuant to Section 7 herein.

**SECTION 2.****THE PREMISES**

2.1 **Premises.** Lessor, for and in consideration of the covenants and agreements on the part of Lessee contained in this Agreement, does hereby lease, grant, rent, let and demise unto Lessee, and Lessee does hereby take, accept and lease from Lessor, upon and subject to the conditions hereinafter expressed, the Lease Area on the Premises for the sole and exclusive purpose of constructing, operating, maintaining, repairing and removing the Facility. Lessee's use of the Lease Area is subject to all Applicable Legal Requirements. Lessor hereby grants to Lessee and its employees, contractors and invitees non-exclusive access across those portions of the Premises not contained within the Lease Area that may be reasonably necessary in connection with Lessee's performance of its obligations hereunder and for vehicular and pedestrian ingress and egress to and from the Lease Area to and from all public ways serving the Premises.

2.2 **Lessor's Duties.**

(a) Lessor shall not be required to furnish any services or facilities or to make any repairs or alterations in or to the Lease Area or the Premises, except as provided in this section below. Notwithstanding the above, the Parties agree that Lessee shall not be liable for any conditions on the Premises arising from or related to acts or omissions occurring prior to the Effective Date, except to the extent arising from or related to Lessee's negligence or willful misconduct.

(b) Within one-hundred and twenty (120) days after the Effective Date, Lessor shall remove any and all of its equipment, materials, improvements and other items that the parties agree interferes with or obstructs the design or construction of the Facility.

(c) Lessor shall be responsible for the maintenance and operation of the Premises, including any portion of the landfill included in the Premises. Lessor shall comply with any permits or approvals obtained by Lessee under this Agreement (including, without limitation, the Major Post-Closure Use Permit), from the Massachusetts Department of Environmental Protection and any other Governmental Authority having jurisdiction over the Premises, except insofar as Lessee is assigned any such duties herein.

(d) Lessor shall be responsible for mowing the ground cover at the Premises, outside of the Lease Area, and for maintaining (including snow removal) all existing access roads, driveways and customary paths, now maintained by Lessor, to permit Lessee access to the Lease Area, and such other maintenance and snow plowing of any new access ways, proposed and designed by the Lessee, as the Parties may agree to.

2.3 **Ownership of the Facility.**

(a) **Title to Facility.** Subject to Lessor's rights to acquire the Facility under Section 7 (Purchase of the Facility), the Facility, Facility Assets, Environmental Attributes, and all alterations, additions, improvements or installations made thereto by Lessee and all Lessee property used in connection with the installation, operation and maintenance of the Facility is, and shall remain, the property of Lessee ("***Lessee Property***"). In no event shall Lessor, nor anyone claiming by, through or under Lessor (including but not limited to any present or future mortgagee of the Premises) have any rights or other interest in or to the Lessee Property or any

Facility Assets, Environmental Attributes, or other equipment or personal property of Lessee installed on the Premises, and Lessee may remove all or any portion of the Facility or any Facility Assets at any time and from time to time as further provided in the Agreement.

(b) **Security Interests in Facility.** Except as otherwise provided in this Agreement, Lessor acknowledges and agrees that Lessee may grant or cause to be granted to a lender a security interest in the Facility and in Lessee's rights to payment under the Agreement, and Lessor expressly disclaims and waives any rights in the Facility at law or in equity pursuant to this Agreement. Any security interest shall be subordinate to the interest of the Lessor in the Premises and subject to the terms and conditions of this Agreement.

2.4 **No Additional Use.** Except with the prior express written consent of Lessor, Lessee shall not use the Premises for any use other than the installation, operation, maintenance, repair and removal of the Facility, and access thereto.

### SECTION 3. TERM

3.1 **Initial Term.** The initial term of this Agreement shall commence on the Effective Date and shall remain in effect until 11:59 p.m. on the day preceding the twentieth (20<sup>th</sup>) anniversary of the Commercial Operation Date, unless earlier terminated under Sections 6, 7 or 11.

3.2 **Extension Term.** The Initial Term may be renewed for two (2) consecutive periods of five (5) years each upon mutual agreement of the Parties. Either party may notify the other in writing not less than one hundred fifty (150) days prior to the end of the Initial Term or the first Extension Term of its request for renewal. Each such Extension Term shall expire at 00:00 E.T. on the fifth (5<sup>th</sup>) anniversary of the Extension Term.

3.3 **Preliminary Schedule.** Attached hereto as Exhibit B is a preliminary schedule for the design, permitting and construction of the Facility. Such schedule shall be updated from time to time by Lessee.

3.4 **Achievement of Commercial Operation.** Lessee shall use its best efforts to achieve the Construction Commencement Date, subject to winter weather delays, in accordance with the Schedule. Lessee shall not be required to commence construction during the months when the ground is frozen or anticipated to be frozen. Lessee shall use its best efforts to achieve Commercial Operation of the Facility in accordance with the Schedule in Exhibit B, subject to winter weather delays.

### SECTION 4.

#### RENT

4.1 **Initial Rent.** From the Effective Date until the Commercial Operation Date, Lessee shall pay Lessor Initial Rent, prorated for the number of days from the Effective Date to the Commercial Operation Date. Accrued Initial Rent shall be due in one lump sum on the Commercial Operation Date or upon earlier termination of this Agreement, whichever comes

sooner, after receipt of invoice from Lessor. Following the Commercial Operation Date, the Initial Rent shall no longer be payable.

4.2 **Term Rent.** From and after the Commercial Operation Date, Lessee shall pay Lessor Term Rent for each Contract Year. Term Rent for each Contract Year shall be payable quarterly in advance within thirty days after receipt of invoice from Lessor. The Lessor shall send Lessee invoices on or about December 1, March 1, June 1 and September 1 of each calendar year for the amount due in next quarter of the Contract Year. All rental payments which are not paid prior to the due date shall incur interest at the Interest Rate. The first invoice shall include any additional amounts pro-rated for time between the Commercial Operation Date and the first due date.

4.3 **Ad Valorem Taxes.** The Parties intend to enter into an agreement for Payment in Lieu of Taxes (PILOT Agreement) in substantially the form attached hereto in Exhibit I, all subject to the approval of the 2014 annual Hamilton Town Meeting. The PILOT payment shall be a fixed annual amount of \$\_\_\_\_\_ for each Contract Year. In the event that Town Meeting fails to approve the PILOT Agreement, or if the PILOT Agreement is determined invalid due to subsequent legislative action or a final judgment of a court of competent jurisdiction, the Lessor shall be responsible for the payment of real and personal property taxes assessed to the Licensed Area and/or to the Facility.

## SECTION 5.

### LESSEE'S DUTY TO MAINTAIN

#### 5.1 **Maintenance; Repairs.**

(a) Lessee shall take good care of the Lease Area and the Facility, and conduct all required maintenance and make all repairs thereto. Lessee shall maintain the Lease Area and manage its activities at the Premises in accordance with the requirements in Exhibit H. Except to the extent required under this Agreement, and any permits and approvals obtained by Lessee for the Facility (including, without limitation the Major Post-Closure Use Permit), Lessee shall have no obligation for the operation, maintenance of the landfill.

(b) Lessor shall have no duty or liability to Lessee with respect to the maintenance, repair or security of the Facility.

(c) Nothing in this Agreement shall limit Lessor's ability to maintain the Premises in a reasonable manner consistent with Lessor's current and past practices.

(d) Notwithstanding the foregoing in subsection (c) above, Lessor acknowledges, agrees, and accepts that activities conducted by or on behalf of Lessee on the Premises relating to the Facility may interfere with Lessor's maintenance of the Premises or Lessor's conduct of business thereon. Lessee agrees to take all commercially reasonable measures to minimize such interferences.

5.2 **Compliance with Laws; Professional Standards.** Lessee, at Lessee's expense, shall diligently and fully comply in all material respects with all Applicable Legal Requirements as they pertain to the occupancy of the Lease Area and conduct of Lessee's business at the Premises.

5.3 **Decommissioning Assurance.** Lessee and Lessor shall establish financial security in a form satisfactory to Lessor, such as a bond, letter of credit, escrow account or other such mechanism), in which Lessee shall fund the Decommissioning Assurance beginning on the first day of the first anniversary of the Commercial Operation Date at the rate of \$ \_\_\_\_\_ per year, and continuing for \_\_\_\_ years. Lessee and Lessor shall enter into an agreement to establish the terms of the release of the Decommissioning Assurance.

## SECTION 6.

### DESIGN, CONSTRUCTION AND OPERATION OF PERMITTED USE

6.1 **General Description.** The Facility as defined in Section 1, shall consist of the Facility Assets and the improvements described in Exhibit C of the Agreement. Lessor will at its own cost (i) furnish all design, materials, supplies, tools, equipment, labor, and other services and obtain all permits, licenses and other approvals required by Applicable Legal Requirements necessary for the installation and operation of the Facility.

6.2 **Governmental Approval.** Except as otherwise specified herein, or otherwise obtained prior to the Effective Date, Lessee will use good faith, diligent efforts to obtain at its sole cost all approvals and permits required under the Applicable Legal Requirements for Lessee's proposed use of the Premises from any Governmental Authority having jurisdiction in the matter, such permits and approvals on terms and conditions acceptable to Lessee in its sole discretion. Lessee will promptly inform Lessor of all significant developments relating to the issuance of such approvals or permits. Lessor will reasonably cooperate with Lessee in procuring such approvals; provided, however, that the parties acknowledge and agree that this Agreement does not impose an affirmative obligation on the Lessor to issue or procure any approval or to engage in any action or inaction inconsistent with the proper exercise of the Lessor's regulatory authority. If any changes in the capacity of the proposed Facility, the Lessor's use of the Lease Area and Premises as described in this Lease, and the Facility design, as approved by the Lessor, are required by any Governmental Authority, then Lessee shall submit such changes, if any, to Lessor for its approval, which shall not be unreasonably conditioned, withheld or delayed.

6.3 **Construction Commences Promptly; Access.** (a) Lessee shall commence the design, permitting, financing, and construction of the Facility promptly following the Effective Date in accordance with the Schedule in Exhibit B. Construction of the Facility shall comply in all material respects with the provisions of Exhibit A hereto. If Lessee does not commence construction within \_\_\_\_\_ ( ) days of the Construction Commencement Date forth for in the Schedule in Exhibit B, then Lessor may send written notice to Lessee of its intention to terminate this Agreement, and this Agreement shall terminate twenty-one days after Lessee's receipt of such notice; provided, that: (i) if Lessee provides Lessor with a written notice within such twenty-one (21) day period stating that it is unable to commence the construction, due to failure of a governmental body to issue a required permit or failure of the Local Distribution Company to take any actions required for interconnection of the Facility, (which Lessee shall describe in reasonable detail), notwithstanding Lessee's good faith and diligent efforts to cooperate with, to supply all necessary assistance to, to comply with the reasonable requirements of any such third party, and to otherwise overcome such third party impediments, this Agreement shall not terminate; or (ii) if Lessee provides Lessor with a written notice within \_\_\_\_\_ ( ) days

that construction will be delayed due to winter conditions, or (iii) if third party litigation seeking to prevent the commencement of construction has commenced and remains unresolved by settlement or final judicial or administrative order, then this Agreement shall not terminate. In the event notice is given under item (i) or (ii) in the preceding sentence, the Parties shall meet and confer to establish a commercially-reasonable deadline for the commencement of the Installation Work.

Upon termination of this Agreement by Lessor pursuant to the preceding paragraph, neither Party shall have any obligation or liability to the other; provided, that (i) Lessee, at its expense, shall remove any equipment or materials which Lessee has placed on the Premises; (ii) Lessee, at its expense, shall restore any portions of the Premises disturbed by Lessee to their pre-existing condition; (iii) the Parties shall not be released from any payment or other obligations arising under this Agreement, including payment of Initial Rent, prior to termination; and (iv) any provisions of this Agreement that survive the termination of this Agreement shall continue to apply notwithstanding the termination of this Agreement.

(b) Lessee shall grant Lessor, and its authorized representatives, access to and the right, but not the obligation, to observe the Installation Work at all times provided that neither Lessor nor its authorized representatives shall interfere with such work or use or move any of Lessee's equipment or any Facility without written authorization from Lessee.

(c) Lessee and its sub-contractors, agents, consultants, and representatives shall have reasonable access at all reasonable times (including under emergency conditions) to the necessary portion of the Premises for the purpose of construction, operation, inspection, maintenance, repair and removal of the Facility, in accordance with Exhibit H and to any documents, materials and records of Lessor relating to the Premises that Lessee reasonably requests in conjunction with these activities. Lessee shall provide Lessor reasonable notice of all activities conducted by or on behalf of Lessee on the Premises relating to the Facility. During any such activities, Lessee, and its sub-contractors, agents, consultants and representatives shall comply with Lessor's reasonable safety and security procedures (as may be promulgated from time to time), and Lessee and its sub-contractors, agents, consultants and representatives shall conduct such activities in such a manner and such a time and day as to cause minimum interference with Lessor's activities.

6.4 **Performance and Payment Bond.** Lessee shall provide payment and performance bonds in the amount of \$5,000,000. Lessee shall provide copies of such bonds to Lessor upon execution of this Agreement.

6.5 **Early Completion; Late Completion.**

(a) **Early Completion.** If Lessee completes the construction and achieves the Commercial Operation Date in advance of the schedule in Exhibit B, rent shall be abated by \$\_\_\_\_\_ for each day that the Lessee achieves such early completion.

(b) **Late Completion.** If the Commercial Operation does not occur within twenty-one (21) days of the Commercial Operation Date ("***Outside Commercial Operation Date***") as established in the schedule, as updated from time to time, for any reason other than (i) Lessor's failure to perform its obligations hereunder, (ii) delays caused by winter conditions or other severe weather, as documented by Lessee to the satisfaction of Lessor, (iii) on account of Force Majeure or casualty, or (iv) third party litigation that prevents the commencement or completion of Installation Work and remains unresolved by settlement or final judicial or

administrative order, then Lessor by written notice shall have the right to assess Lessee liquidated damages (“**Delay Liquidated Damages**”), in the amount of \$\_\_\_\_ for each day of delay, in which case Lessee shall not be considered in default of this Agreement under Section 11.1.

Notwithstanding the foregoing, Lessee shall not be responsible for Delay Liquidated Damages in the event that Lessee cannot satisfy Outside Commercial Operation Date because the Lessee lacks a necessary permit, approval or Interconnection Agreement necessary to commence the Installation Work and/or Commercial Operation of the Facility, and Lessee is utilizing commercially reasonable efforts to secure such permit, approval or Interconnection Agreement. The Parties recognize the delays, expense and difficulties involved in proving the actual losses or damages in a judicial or other proceeding, and agree that the Delay Liquidated Damages are reasonable compensation to Lessor. Payment of Delay Liquidated Damages shall be Lessor’s sole and exclusive remedy for failure to achieve the Commercial Operation Date by the scheduled date; provided, that if Lessee has not achieved Commercial Operation within one hundred and eighty (180) days after the Outside Commercial Operation Date, then Lessor shall be considered in Default of this Agreement.

6.6 **Completion Requirements.** Prior to commencing construction of the Facility, Lessee shall provide Lessor a copy of the Final Drawings for Lessor’s review and approval, not to be unreasonably withheld or conditioned. After receipt of the Final Drawings, Lessor shall have thirty (30) calendar days to review the Final Drawings, after which Lessor shall be deemed to have approved the Final Drawings. Lessee shall commence construction and proceed diligently and continuously thereafter until completion, subject only to construction delays caused by winter weather and ground freezing or on account of a Force Majeure Event. Lessee will arrange for the construction of the Facility in a good, careful, proper and workmanlike manner in accordance with good engineering practices and with all Applicable Legal Requirements and the Final Drawings. Lessee shall not make any material alteration to the Final Drawings without the consent of the Lessor, not to be unreasonably withheld or conditioned. Lessor shall have thirty (30) calendar days after receiving written notice of any such alteration to the Facility in which to review the proposed alteration.

6.7 **Interconnection with Electric Distribution Grid.** Lessee will obtain at its sole cost all approvals and agreements required for interconnection of the Facility to the LDC System. Lessee will promptly inform Lessor of all significant developments relating to such interconnection matters. Lessor shall not be required to pay for any costs required by the LDC to upgrade, improve, replace or maintain the LDC’s distribution Facility or assets on or about the Premises. Lessor agrees to sign all applications, documents and instruments necessary for interconnection of the Facility to the LDC System.

6.8 **Completion Notice.** Subject to the provisions of this Agreement, Lessee shall notify Lessor when the Facility has achieved Commercial Operation and shall in such notice certify to Lessor the Commercial Operation Date.

6.9 **As-built Plans.** Within ninety (90) days following the issuance of the Completion Notice, Lessee shall prepare and deliver to Lessor detailed as-built plans accurately depicting the Facility including, without limitation, all wiring, lines, conduits, piping and other structures or equipment.

6.10 **Removal of the Facility.**

(a) Upon expiration or termination of the Agreement according to its terms, and unless the Lessor elects to purchase the Facility pursuant to Section 7, Lessee shall at its sole cost and expense remove from the Premises all of the tangible property comprising the Facility, including but not limited to all structures built by the Lessee, any fencing and/or barriers to secure the Facility, on a mutually convenient schedule to be completed not later than one hundred and eighty (180) days after such expiration or termination and shall return the Lease Area to the condition required by the Major Post-Closure Use Permit.

(b) Lessee shall repair any damage it causes in connection with such removal not related to ordinary use and wear.

(c) Not later than sixty (60) days after Lessee's removal of the Facility and restoration of the Lease Area is completed, Lessor shall release or return to the Lessee the full amount of the Decommissioning Assurance, including any interest accrued thereon.

(d) If Lessee fails to remove or commence substantial efforts to remove the Facility within one hundred and eighty (180) days of the expiration or of the date that the Agreement terminates, Lessor shall have the right, at its option, to remove the Facility and restore the Lease Area to its original condition (other than ordinary wear and tear) and Lessee shall reimburse Lessor for reasonable out-of-pocket costs and expenses incurred by Lessor in removing the Facility and in restoring the Lease Area.

(e) If Lessee fails to reimburse Lessor for such reasonable costs and expenses incurred in removing the Facility and in restoring the Lease Area within sixty (60) days of its completion of such actions, Lessee shall be deemed to have abandoned the Facility and Lessor shall have the right to sell the Facility (and Lessee hereby appoints Lessor as its agent for such purposes in such circumstances) for its scrap value and to retain the proceeds of such sale to the extent of Lessor's costs and expenses.

(f) In addition, if Lessee has so abandoned the Facility, Lessor shall be permitted to access and apply the full amount of the Decommissioning Assurance, including any interest accrued thereon, towards its costs and expenses incurred in connection with its removal, sale of the Facility and restoration of the Lease Area without any setoff against the amount it may recoup from sale proceeds.

(g) The provisions of this Section survive expiration or termination of this Agreement until the actual removal of the Facility has been completed hereunder.

6.11 Lessor represents that Lessor owns the Premises in fee simple and has the full right to make and perform this Lease. Lessor covenants that, so long as Lessee pays the rents and observes and keeps the covenants of this Lease on its part to be kept and so long as Lessee complies with the terms of the lease agreement, Lessee shall have quiet and peaceful possession of the Lease Area free from any hindrance to or interference with Lessee's quiet enjoying thereof, throughout the term of this Agreement, subject to the rights of Lessor and others as provided in other sections of this Agreement.

6.12 Lessor will not conduct any activities on, in or about the Lease Area that have a reasonable likelihood of causing damage or impairment to the Facility, provided however that

nothing herein shall limit Lessor's rights under Section 11.2 of this Agreement and its obligations under Applicable Legal Requirements. Lessor shall take all reasonable steps to limit access to the Lease Area to Lessee and Lessee's employees, invitees and agents.

6.13 **Major Post-Closure Use Permit.**

(a) The Lessee shall comply with the DEP Permit conditions applicable to construction, installation and operation of the Facility and maintenance of the Lease Area in accordance with applicable provisions of Exh. H (Lessee's Duties at Premises). The Lessor shall comply with the DEP Permit conditions applicable to ownership, on-going operation and maintenance of the landfill and its obligations under the DEP Permit.

(b) Lessor and Lessee shall each provide reasonable cooperation and assistance with each other in providing information that a Party may require to meet the DEP permit conditions.

**SECTION 7.**

**PURCHASE OF THE FACILITY**

7.1 **Facility Purchase Option; Termination for Convenience** (a) Lessor has the option to purchase the Facility upon the \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ anniversary of the Commercial Operation Date and upon natural expiration of the Term, in each case by delivering written notice ("***Option Notice***") to Lessee at least one hundred twenty (120) days before each such date. The purchase price for the Facility shall be the higher of fair market value (as determined below) or the Early Termination Price for the applicable Contract Year.

(b) **Fair Market Value.** If Lessor provides timely an Option Notice to Lessee, then the Parties will attempt first to agree on the fair market value of the Facility. If the Parties cannot agree on a value within 30 days from the date the Option Notice is delivered to Lessee, then the fair market value will be determined by an independent licensed appraiser, selected jointly by the Parties. The appraiser will be instructed to determine the value of the Facility in place at the Premises on an installed and running, or going concern basis. The valuation made by the appraiser will be binding on the Parties, absent fraud or manifest error. In any case, "fair market value" means the price that would be established in an arm's-length transaction between an informed and willing buyer and an informed and willing seller, neither being under any compulsion to act. The cost of the appraisal shall be borne by Lessee. Within thirty days after receipt of the appraisal, Lessor shall notify Lessee whether Lessor wishes to purchase the Facility. If Lessor elects to purchase the Facility, then on the \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ anniversary of the Commercial Operation Date, or on last day of the Term, as the case may be, Lessor shall pay Lessee the purchase price and title to the Facility shall transfer to Lessor as-is, where-is. Lessor and Lessee shall execute all documents reasonably requested by the other to transfer title as aforesaid.

(c) For a period of thirty (30) days following delivery of the Option Notice, Lessor and its agents shall be permitted to inspect the Facility and all records relating to operation, maintenance and warranties applicable to the Facility and any then-binding contracts for the sale or Environmental Attributes and revenues derived therefrom. Upon completion of such due diligence, Lessor shall have the right to rescind the Option Notice, and this Agreement will continue in full force and effect.

(d) Upon the payment of the purchase price in accordance with this Section and execution and delivery by Lessee to the Lessor of a bill of sale for the Facility, (a) title to the Facility shall pass to the Lessor, free and clear of any liens and encumbrances, and without warranties of any kind except as to title, (b) the remaining period on all third party warranties for the Facility, and the remaining term of all third party contracts regarding monitoring, operations and/or maintenance of the Facility, in each case to the extent transferable, will be transferred to the Lessor, (c) as between Lessee and the Lessor, all right, title and interest in and to the Environmental Attributes related to the Facility arising on and after such date of payment shall accrue to the benefit of or vest in the Lessor or, if applicable, Lessee shall assign to the Lessor rights under any forward sale contract related to such Environmental Attributes as may be in effect as of the date of such payment, if any, but in any case Lessee shall execute and deliver to the Lessor such documentation as may be commercially reasonable to effect such transfer or assignment and (d) this Agreement shall terminate automatically, and (e) Lessor and Lessee shall execute such commercially reasonable documentation as may be required to designate Lessor as the owner of the Environmental Attributes for purposes of registration and verification of the Environmental Attributes.

(e) At the closing of the purchase and sale of the Facility pursuant to Lessor's option to purchase, and if such closing does not occur on the last day of a Contract Year, Lessee shall receive a credit against the purchase price of the Facility for (i) pre-paid Term Rent, if any, and (ii) payments made under the PILOT Agreement (if any), in each case pro-rated based on the number of days elapsed in the year in which the closing occurs. Upon the closing, this Agreement shall terminate.

(f) At the closing of the purchase and sale of the Facility pursuant to Lessor's option to purchase, if Lessor is holding or has control over the Decommissioning Assurance, Lessor shall release or cause to be released such Decommissioning Assurance.

## SECTION 8.

### MECHANIC'S LIENS

8.1 **No Liens**. Lessee shall not create, or suffer to be created or to remain, and shall promptly discharge, any mechanic's, laborer's or materialman's lien upon the Premises, including the Lease Area, and Lessee will not cause the estate, rights and interests of Lessor in the Premises or any part thereof to be impaired, except in accordance with and subject to the provisions of this Agreement.

8.2 **Discharge**. If any mechanic's, laborer's or materialman's lien shall at any time be filed by an employee, supplier, subcontractor, sub-subcontractor (including employees of such suppliers or subcontractors), or any agent or other person claiming payment from Lessee against the Premises, Lessee, within thirty (30) days after notice to Lessee of the filing thereof, shall cause such lien to be discharged of record by payment, deposit, bond, insurance, order of court of competent jurisdiction or otherwise. If Lessee shall fail to cause such lien to be discharged within the period aforesaid, then, in addition to any other right or remedy, Lessor may, but shall not be obligated to, discharge the same either by paying the amount claimed to be due or by procuring the discharge of such lien by deposit or by bonding. Any amount so paid by Lessor and costs reasonably incurred by Lessor in connection therewith, together with interest thereon at the Interest Rate from the respective dates of Lessor's making of the payment of the cost and expenses, shall be paid by Lessee to Lessor within ten (10) Business Days of Lessor's invoice therefor.

8.3 **Lessor's Obligations.** Lessor shall not directly or indirectly cause, create, incur, assume or suffer to exist any liens on or with respect to the Facility(s) or any interest therein.

## SECTION 9.

### RIGHT TO INSPECT AND ENTER

9.1 **Inspection and Entry.** During the course of construction and completion of the Facility and any substantial alteration thereto, Lessee shall maintain all plans, shop drawings, and specifications relating to such construction which Lessor, its agents or contractors may examine at reasonable times upon reasonable prior notice for the purpose of determining whether the work conforms to the agreements contained or referenced in this Agreement. Lessor may, upon reasonable prior notice to Lessee, enter upon the Lease Area and inspect the Facility, subject to Lessee's reasonable security and safety procedures and methods, for the purpose of ascertaining its condition or whether Lessee is observing and performing the obligations assumed by it under this lease, all without hindrance or molestation from Lessee.

9.2 **Notice of Damage.** Lessor shall promptly notify Lessee of any matter it is aware of pertaining to any damage to or loss of the use of the Facility or that could reasonably be expected to adversely affect the Facility.

## SECTION 10.

### ASSIGNMENT AND SUBCONTRACTING.

10.1 **Successors and Assigns; Subcontracting** This Agreement shall inure to the benefit of and shall be binding upon the Parties and their respective permitted successors and assigns; provided, that Lessee in its discretion may elect to use such certified and licensed subcontractors as it may choose in performing any of its obligations hereunder and performance of any obligation of Lessee by any such subcontractor shall satisfy such obligation to the extent of such subcontractor's performance.

10.2 **Assignment by Lessor** Lessor shall not sell, transfer, assign, pledge or cause to be assumed (together, "*Assign*"; and any such action, an "*Assignment*") this Agreement, in whole or in part, without the prior written consent of Lessee and its applicable Financing Parties.

10.3 **Assignment by Lessee** Except as set forth in Section 10.4, Lessee shall not, without the prior written consent of Lessor, assign this Agreement, in whole or in part; provided, Lessor's consent to an assignment by Lessee of any of its rights (and/or a delegation of any of its obligations) shall not be unreasonably withheld, delayed or conditioned if Lessor has been provided with reasonable proof that the proposed assignee: (a) has comparable experience in operating and maintaining a Source Separated Organic Waste Processing Facility similar to the Facility; and (b) has the financial capability to maintain the Facility in the manner required by this Agreement and to perform the obligations under this Agreement. Any assignment shall be conditioned upon the assignee explicitly assuming all of Lessee's obligations under this Agreement. Neither the consent of Lessor to an assignment, nor the references in this Agreement to assignees or successors, shall in any way be construed to relieve Lessee (in the event of a partial assignment) or any assignee of the requirement of obtaining the consent of Lessor to any further assignment of this Agreement. Lessee shall deliver to Lessor thirty days' (30) advance written notice of its intent to assign this Agreement.

10.4 **Consent to Assignment for Financing or Leasing** Lessee may seek financing for the construction, installation and ownership of all or a portion of the Facility under this Agreement, whether by leasing all or a portion of the Facility from an Equipment Leasing Party or entering into other arrangements with a Financing Party in the form of an equipment lease, finance lease, debt, equity, tax equity or other financing arrangement. Notwithstanding any provisions in this Agreement to the contrary, Lessee may collaterally assign, or assign fully in connection with any financing of the Facility (which may, in connection with such assignment, permit the Financing Party to further assign collaterally), its rights, and/or obligations hereunder, or the Agreement in its entirety for purposes of securing such financing or leasing arrangement. Lessor hereby consents to any such assignment, provided that:

(a) such assignment shall not create any Lien or other encumbrance on the Premises other than Lessee's rights and obligations contemplated in this Agreement nor on any other real or personal property located on the Premises other than the Facility;

(b) all provisions regarding the entry onto and use of the applicable Lease Area shall remain in effect;

(c) the Financing Party, as applicable, shall enforce its interest and protect the applicable Lease Area in accordance with Lessee's obligations hereunder from and after the time the Financing Party assumes Lessee's interest in this Agreement;

(d) Lessor acknowledges that upon and following an event of default under any financing or leasing documents relating to the Facility, the Financing Parties, if any, may (but shall not be obligated to) assume, or cause their designees to assume, all of the interests, rights and obligations of Lessee thereafter arising under this Agreement; and

(e) If the rights and interests of Lessee in this Agreement shall be assigned, in whole or in part, as herein provided, and the assignee shall agree in a writing submitted to Lessor to be bound by, and to assume, the terms and conditions hereof and any and all obligations to Lessor arising or accruing hereunder from and after the date of such assignment (or, in the case of a partial assignment, to be bound by the portion of this Agreement so assigned and relevant associated obligations to Lessor arising or accruing hereunder from and after the date of such assignment), Lessee shall be released and discharged from the terms and conditions hereof and each such obligation hereunder from and after such date (or, in the case of a partial assignment, released and discharged of the terms and conditions hereof so assigned and the associated obligations hereunder from and after such date), and Lessor shall continue this Agreement, or the relevant portion of this Agreement with the assignee as if such person had been named as Lessee under this Agreement; provided that such assignee: (a) has experience in operating and maintaining a Source Separated Organic Waste Processing Facility similar to the Facility and personnel qualifications and performance record contained in Lessee's proposal; and (b) has financial capability to maintain the Facility in the manner required by this Agreement and to perform the obligations under this Agreement, each substantially similar to that of Lessee; and provided, further, that if Lessee assigns this Agreement, or any portion hereof, to a Financing Party as provided herein, Lessor acknowledges and agrees that such persons shall not be personally liable for the performance of such assigned obligations hereunder except to the extent of the interest of the Financing Parties in the Facility. Notwithstanding any such assignment to one or more Financing Parties or a designee thereof, Lessee shall not be released and discharged from and shall remain liable for any and all obligations to Lessor arising or accruing hereunder

(and, in the case of a partial Assignment, for the obligations accruing after the date of such assignment with respect to obligations accruing under the unassigned portion of the Agreement). Lessee shall not, however, have any liability for any action or omission of the Financing Party hereunder.

(f) Lessor agrees to sign, execute and deliver each such instrument or other document as Lessee or its Financing Parties, if any, may reasonably request to satisfy the requirements of any Financing Party with respect to or in connection with any financing or leasing of the Facility, so long as such writing does not impose any further obligations on Lessor. Lessor also agrees, to the extent required by a Financing Party, if any, to provide Lessee and/or a Financing Party with such information about Lessor or the Premises as Lessee or a Financing Party may reasonably request.

**10.5 Rights of Financing Parties.**

(a) A Financing Party may perform, but shall not be obligated to perform, any of Lessee's obligations hereunder, including holding and conveying title to the Facility. The rights of Lessee hereunder shall apply, to the extent relevant, and with the necessary modifications, to any Financing Party.

(b) Financing Parties as Third Party Beneficiaries. The provisions of this Article 10 are for the benefit of any Financing Party as well as the Parties hereto, and shall be enforceable by any Financing Party as express third-party beneficiaries hereof. Lessor hereby agrees that neither a Financing Party, nor any Person for whom they may act, shall be obligated to perform any obligation or be deemed to incur any liability or obligation provided in this Agreement on the part of Lessee or shall have any obligation or liability to Lessor with respect to this Agreement except to the extent any of them becomes a party hereto pursuant to Sections 10.4 and 10.5.

**SECTION 11.**

**DEFAULT AND REMEDIES.**

11.1 **Events of Default.** The following events shall be deemed to be Events of Default under this Agreement:

(a) Lessee fails to pay when due any sum of money becoming due to be paid to Lessor under this Lease, whether such sum be any installment of the rent reserved by this Lease, any other amount treated as additional rent under this Lease, or any other payment or reimbursement to Lessor required by this Lease, whether or not treated as additional rent under this Lease.

(b) Lessee fails to perform or observe any term or condition of this Agreement which, because of its character, would immediately jeopardize Lessor's interest in the Premises (such as, but without limitation, violation of laws governing the discharge of Hazardous Materials).

(c) Lessee fails to comply in any material respect with any term, provision or covenant of this Agreement which is not provided for otherwise in this Section 11 and shall not cure such failure within thirty (30) days after written notice of such failure to Lessee, which period shall be extended for an additional period not to exceed thirty (30) days if such failure cannot be cured within such initial 30-day period provided Lessee has commenced such cure within such period and is diligently prosecuting the same to completion.

(d) Lessee is Bankrupt.

(e) Lessee vacates or abandons the Premises.

(f) Lessee's interest in this Lease devolves upon or passes to any person, whether by operation or law or otherwise, except as expressly permitted hereunder.

11.2 **Lessor Remedies.** Upon the occurrence and during the continuance of any of the Events of Default described herein by Lessee, Lessor may exercise the remedy in clauses (a), (b) and (c), or one or more of the remedies in clauses (e), (f), (h):

(a) Lessor may terminate this Agreement, without further liability hereunder.

(b) Upon such termination of this Agreement by Lessor due to an Event of Default of Lessee, Lessee shall surrender possession and vacate the Lease Area immediately and deliver possession thereof to Lessor, and Lessee hereby grants to Lessor full and free license to enter into and upon the Lease Area in such event and to repossess Lessor of the Lease Area and to expel or remove Lessee and any others who may be occupying or be within the Premises and to remove Lessee's signs and other evidence of tenancy and all other property of Lessee therefrom, subject only to the provisions on removal of the Facility in Section 6.10, without the Lessor being deemed in any manner guilty of trespass, eviction or forcible entry or detainer and without incurring any liability for any damage resulting therefrom, Lessee waiving any right to claim damages for such re-entry and expulsion, and without relinquishing Lessor's right to rent or any other right given to Lessor under this Lease or by operation of law.

(c) Lessee shall continue to have the obligation to indemnify, defend and save harmless Lessor on account of claims or assessment of penalties against the Lessor arising from Lessee's failure to comply with terms and conditions of the landfill post-closure use permit and DEP orders related thereto.

(d) Until such time as Lessor shall elect to terminate the Lease and shall thereupon be entitled to recover the amounts specified herein, Lessee shall pay to Lessor upon demand the full amount of all rent, including any amounts treated as additional rent under this Lease and other sums reserved in this Lease for the remaining term, and Lessee agrees that Lessor may file suits from time to time to recover any sums falling due under this section as they become due.

(e) Lessor, without being under any obligation to do so and without waiving any Lessee default, may remedy such other default for the account of Lessee, immediately upon notice in the case of emergency or if necessary to protect public health or safety, or to avoid forfeiture of a material right, or in any other case only provided Lessee shall fail to remedy such default within thirty (30) days, or such longer period as may be required due to the nature of such default (provided Lessee has commenced and is diligently prosecuting a cure), after Lessor

notifies Lessee in writing of Lessor's intention to remedy such other default. All costs reasonably incurred by Lessor to remedy such default (including, without limitation, all reasonable attorney's fees), shall be at the expense of Lessee.

(f) Pursuit of any remedy in section 11.2(e), (f) and (h) provided in this Agreement shall not constitute a forfeiture or waiver of any rent due to Lessor under this Agreement or of any damages accruing to Lessor by reason of the violation of any of the terms, provisions and covenants contained in this Agreement.

(g) No act or thing done by Lessor or its agents during the term shall be deemed a termination of this Lease or an acceptance of the surrender of the Lease Area, and no agreement to terminate this Agreement or accept a surrender of said Lease Area shall be valid, unless in writing signed by Lessor.

## **SECTION 12.**

### **CASUALTY.**

If the Premises is damaged by fire or other casualty whatsoever so that such damage may reasonably be expected to materially and adversely disrupt the Lessee's operations at the Premises for more than ninety (90) days, then the Lessee may at any time following such fire or other casualty so long as such material and adverse disruption is continuing, terminate this Lease upon sixty (60) days written notice to the Lessor. Any such notice of termination shall cause this Agreement to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Agreement, and the Parties shall make an appropriate adjustment, as of such termination date, with respect to payments due under this Agreement. Nothing herein shall relieve Lessee from its obligations under Section 6.10(a) to restore the Lease Area. If Lessee does not terminate this Agreement as aforesaid, Lessor may, but shall not be obligated to, exercise commercially reasonable efforts to repair the damage to the Premises and return the Premises to its condition prior to such damage or destruction.

If the Facility is damaged by fire or other casualty whatsoever so that such damage may reasonably be expected to materially and adversely disrupt the Lessee's operations at the Premises for more than ninety (90) days, then the Lessee shall be obligated to exercise commercially reasonable efforts to repair the damage to the Premises and return the Premises to its condition prior to such damage or destruction. In the alternative, the Lessee may terminate this Lease upon sixty (60) days written notice to the Lessor without repairing the Facility but only upon the consent of the Lessor, which consent may not be unreasonably withheld. Any such notice of termination shall cause this Agreement to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Agreement, and the Parties shall make an appropriate adjustment, as of such termination date, with respect to payments due under this Agreement. Nothing herein shall relieve Lessee from its obligations under Section 6.10(a) to restore the Lease Area.

In the event of an award related to eminent domain or condemnation of all or part of the Lease Area, each Party shall be entitled to take from such an award that portion as allowed by law for its respective property interest appropriated as well as any damages suffered thereby.

If any part of the Premises is damaged or destroyed due to the gross negligence or willful misconduct of Lessor or Lessor's agents and employees, then Lessor shall promptly upon demand therefore from Lessee pay any and all costs and expenses to repair and restore the Premises and, if such damage interferes with the operation of the Facility, to reimburse Lessee for any lost revenues

for sales of electricity and Environmental Attributes based upon Lessee's estimated energy production capacity of the Facility in the relevant Contract Year.

## SECTION 13.

### INSURANCE

13.1 **Coverages.** Lessee shall maintain the following insurance coverages in full force and effect throughout the Term:

(a) Workers' Compensation Insurance as may be from time to time required under applicable federal and state law;

(b) Commercial General Liability Insurance on an occurrence (not claims-made) form, including premises and operations, personal injury, broad form property damage, products/completed operations, contractual liability and independent contractors protective liability all with minimum combined single limit liability of three million dollars (\$3,000,000) in the aggregate and one million dollars (\$1,000,000) per occurrence;

(c) Automobile Liability Insurance (including owned, non-owned and hired) with limits of not less than one million dollars (\$1,000,000) combined single limit and in the aggregate; and

(d) All Risk Property Coverage and Boiler and Machinery Coverage, or All Risk Builder's Risk Insurance during construction, against damage to the Facility during the Term in an amount not less than the full replacement cost of the Facility, with commercially reasonable sub-limits and deductibles. Such insurance shall provide for a waiver of the underwriters' right to subrogation against the Lessor.

(e) Excess Umbrella Liability Insurance in an amount not less than ten million dollars (\$10,000,000).

13.2 **Certificates of Insurance** Lessee shall furnish current certificates and policies of the insurance required under Section 13.1. Lessee agrees to give the Lessor thirty (30) days' written notice before the insurance is cancelled or materially altered and shall transmit a copy of any notice of cancellation or material alteration of its coverage not later than two (2) business days after its receipt by Lessee. The Lessee's insurance policies shall be written on an occurrence basis and shall include the Lessor as a named additional insured as its interest may appear.

13.3 **Insurer Qualifications** All insurance hereunder shall be maintained with companies authorized to do business in Massachusetts and either rated no less than A- as to Policy Holder's Rating in the current edition of Best's Insurance Guide (or with an association of companies each of the members of which are so rated) or having a parent company's debt to policyholder surplus ratio of 1:1.

## SECTION 14.

## INDEMNIFICATION; LIMITATION ON LIABILITY

14.1 **Indemnification of Lessor.** Lessee shall indemnify, save harmless and defend Lessor and its officers, employees, and agents (collectively, the “*Lessor Indemnified Parties*”) from and against all liabilities, losses, damages, penalties, costs, and expenses, including reasonable attorneys’ fees, that may be imposed upon or incurred by or asserted against any Lessor Indemnified Party by reason of any of the following occurrences during the Term:

(a) any accident, injury, or damage to any person or property occurring in, on or about the Lease Area or any part thereof, to the extent caused by the negligence or intentional misconduct of Lessee, its agents, contractors, subcontractors, employees or invitees. This indemnification obligation shall apply notwithstanding any negligent or intentional acts, errors or omissions of the Lessor Indemnified Parties but Lessee’s liability under this indemnity shall be reduced in proportion to the percentage by which the Lessor Indemnified Parties negligence or intentional misconduct caused the damages;

(b) any failure on the part of Lessee or any of its agents, contractors, subcontractors, servants, employees, licensees or invitees in, on or about the Premises to fully comply with the Applicable Legal Requirements.

In case any action or proceeding is brought against any Lessor Indemnified Party by reason of any such claim, Lessor may elect that Lessee defend such action or proceeding with counsel approved by Lessor. Upon written notice from Lessor of such election, Lessee shall defend such action or proceeding at Lessee’s expense to the reasonable satisfaction of Lessor.

14.2 **Survival.** The provisions of this Section 14 shall survive the expiration or earlier termination of the Agreement.

14.3 **Limitation of Liability.** The express remedies and measures of damages provided in this Agreement satisfy the essential purposes hereof. For breach of any provision for which an express remedy or measure of damages is provided, such express remedy or measure of damages will be the sole and exclusive remedy and the obligor’s liability will be limited as set forth in such provision and all other remedies or damages at law or in equity are waived. If no remedy or measure of damages is expressly provided herein, the obligor’s liability will be limited to direct actual damages only. Except as may be expressly provided in this Agreement, in no event shall either party be liable to the other party for consequential, punitive, exemplary or indirect damages whether arising in tort, contract or otherwise.

## SECTION 15.

### DISPUTE RESOLUTION.

15.1 **Negotiated Resolution** If a dispute arises concerning this Agreement, a representative from management of both Parties shall meet within ten (10) business days after either Party gives the other Party written notice of the dispute (the “*Dispute Notice*”). The Dispute Notice shall set forth in reasonable detail the aggrieved party’s position and its proposal for resolution of the dispute. If the dispute is not resolved within thirty (30) calendar days after the first meeting of the Parties, either Party is free to use any other available remedy in law or at

equity. The Dispute Notice is a condition precedent to each Party's right to resort to litigation, provided that during such time as the Parties are meeting, either Party may petition a court of competent jurisdiction for injunctive relief. A Party's failure to comply with this Section shall entitle the other Party to recover its costs and reasonable attorney's fees in any judicial proceedings that circumvent this dispute resolution provision.

The Parties may mutually agree to submit the dispute to non-binding mediation and share the cost of the mediator. The mediation shall take place in a mutually agreeable location in the greater Boston, Massachusetts area. If the dispute is not resolved within thirty (30) days after the first meeting with the mediator, either Party may resort to any judicial forum for resolution of the dispute.

15.2 **Exceptions** The obligation to negotiate a resolution shall not be binding upon any Party with respect to (a) requests for preliminary injunctions, temporary restraining orders, specific performance, or other procedures in a court of competent jurisdiction to obtain interim relief when deemed necessary by such court to preserve the status quo or prevent irreparable injury pending resolution of the actual dispute or (b) actions to collect payments not subject to a bona fide dispute or (c) claims permitted hereunder against third parties.

## SECTION 16.

### NOTICES.

16.1 **Notice** Unless otherwise provided herein, any notice provided for in this Agreement shall be hand delivered, sent by certified United States Mail, postage prepaid, or by commercial overnight delivery service, and shall be deemed served or delivered to the addressee or its office when received at the address for notice specified herein when hand delivered, on the day after being sent when sent by overnight delivery service, or five (5) business days after deposit in the mail when sent by United States mail.

16.2 **Financing Party Notice** Any notice or other communication which Lessor shall desire or is required to give to or serve upon a Financing Party in accordance with the terms of this Agreement shall be in writing and shall be served in accordance with the provisions of Section 16.1, addressed to such Financing Party at such party's addresses provided in writing by a Financing Party or by the Lessee, and any notice or other communication which the Financing Party shall desire or be required to give to or serve upon Lessor shall be deemed to have been duly given or served if sent in accordance with the provisions of Section 16.1 or at such other address as shall be designated by Lessor by notice in writing given to such Financing Party in accordance with the provisions of this Section.

### 16.3 **Notice Addresses**

Lessor Address:

Town Manager  
Town of Hamilton  
577 Bay Road  
Hamilton, MA 01936

Lessee Address:

Lessee contact for operations and emergencies:

Lessee shall provide notice information with respect to a single point of contact for permitting and construction phases of the project.

16.4 **Address for Rent Payment** All rent payments under this Agreement shall be sent to the Lessor's address as provided in Section 16.3 and shall be sent by regular first class mail postage prepaid or as otherwise agreed by the Parties.

## SECTION 17.

### MISCELLANEOUS

17.1 **Non-interference.** Lessor may construct, reconstruct, modify or make alterations to the Premises so long as such activities do not materially interfere with the operation of the Facility.

17.2 **No Limitation of Regulatory Authority.** The Parties acknowledge that nothing in this Agreement shall be deemed to be an agreement by Lessor to issue or cause the issuance of any approval or permit, or to limit or otherwise affect the ability of the Lessor or any regulatory authority of the Lessor to fulfill its regulatory mandate or execute its regulatory powers consistent with Applicable Legal Requirements.

17.3 **Subordination to Existing Licenses, Easements and Rights of Way.** Lessee acknowledges and understands that this Agreement, and all rights of Lessee are subject and subordinate to all existing leases, easements, rights of way, declarations, restrictions or other matters of record and all existing agreements of the Lessor with respect to the Premises. Lessor reserves the right to grant additional leases, easements, licenses or rights of way, whether recorded or unrecorded, which do not unreasonably interfere with Lessee's use of the Premises and the operation of the Facility. Lessor covenants that it will cause any third party who may in the future obtain an interest in the Lease Area, including any lenders, to execute a commercially reasonable subordination, non-disturbance and attornment agreement with Lessee, providing that each such lien or interest is subordinate to this Agreement, does not and shall not encumber the Facility or other interest of Lessee in the Lease Area. If the Lease Area is mortgaged by Lessor or its successor in title, in the event of any foreclosure, trustee's sale or conveyance in lieu of foreclosure or trustee's sale of such mortgagee's lien, (a) Lessee shall not be named as a defendant therein unless required to be named by applicable law, (b) Lessee's rights and interest under this Agreement shall not be affected or impaired thereby, (c) this Agreement shall continue in effect in accordance with their respective terms and (d) Lessee shall recognize any acquirer of title to the Lease Area by any such process as Lessor hereunder so long as the transferee continues to hold such title.

17.4 **Hazardous Materials.** The Lessee shall not manufacture or dispose in or about the Premises, and shall not direct, suffer or permit any of its agents, contractors, subcontractors, employees, licensees or invitees at any time to manufacture or dispose of in or about the Premises any Hazardous Materials, including but not limited to flammables, explosives, and radioactive materials. Lessee agrees to comply with all Applicable Legal Requirements pertaining to the use, storage and disposal of Hazardous Materials at the Premises. Lessee shall indemnify, defend and hold harmless Lessor and its agents, representatives and employees from any and all liabilities and costs (including any and all sums paid for settlement of claims, litigation, expenses, attorneys' fees, consultant and expert fees) of whatever kind or nature, known, or unknown, resulting from any violation of Environmental Laws caused by Lessee or Lessee's agents, contractors, subcontractors, employees, licensees or invitees at the Premises. In addition, Lessee shall reimburse Lessor for any and all costs related to investigation, clean up and/or fines incurred by Lessor for non-compliance with Environmental Laws, that are caused by Lessee or Lessee's agents, contractors, subcontractors, employees, licensees or invitees at the Premises. Lessor reserves the right to inspect the Lease Area for purposes of verifying compliance with these Hazardous Materials requirements.

17.5 **Limited Effect of Waiver.** The failure of either Party to enforce any of the provisions of this Agreement, or the waiver thereof in any instance, shall not be construed as a general waiver or relinquishment on its part of any such provision, in any other instance or of any other provision in any instance.

17.6 **Amendment and Restatement; Contract Drafting.** The Parties acknowledge that they jointly participated in the drafting of this Agreement, jointly participated in the choice of language used in this Agreement, and have each reviewed all of the terms of this Agreement. This document has not been proffered by one Party to the exclusion of the other Party. If any ambiguous word or phrase is found in this Agreement, the canon of construction requiring that any such word or phrase be construed against the drafter shall not be applied to determine the true meaning of that ambiguous word or phrase.

17.7 **Headings.** The headings of Articles and Sections of this Agreement are for convenience of reference only and are not intended to restrict, affect or be of any weight in the interpretation or construction of the provisions of such Articles or Sections.

17.8 **Entire Agreement; Amendment.** This Agreement and any Exhibits referenced herein shall constitute the entire agreement of the Parties as to the subject matter addressed herein. There are no other agreements between the Parties concerning the subject matter of this Agreement. This Agreement and its Exhibits may not be altered, modified, supplemented, terminated or discharged except by way of an instrument in writing executed by both Parties.

17.9 **Governing Law.** This Agreement shall be interpreted and enforced in accordance with the laws of the Commonwealth of Massachusetts, without resort to any principles of law that would call for the application of the laws of any other jurisdiction. Each of the Parties consents to the jurisdiction of the state or federal courts of the Commonwealth of Massachusetts with respect to all disputes arising under or out of this Agreement.

17.10 **Consent to Service of Process.** Each Party hereby consents to service of process in the Commonwealth of Massachusetts in respect of actions, suits or proceedings arising out of or in connection with this Agreement or the transactions contemplated by this Agreement.

17.11 **Counterparts.** This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument. A signature on a copy of this Agreement received by either Party by facsimile or electronic transmission is binding upon the other Party as an original.

17.12 **Relationship of Parties.** The Parties are independent contractors, and will not be deemed to be partners, joint venturers or agents of each other for any purpose, unless expressly stated otherwise herein. No employee, agent or representative of the Lessee shall be entitled to receive any benefits of employment with the Lessor, including without limitation salary, overtime, vacation pay, holiday pay, sick leave, health insurance, life insurance, pension or deferred compensation.

17.13 **Survival.** In addition to the other provisions of this Agreement that shall survive any expiration or termination hereof in accordance with the explicit terms thereof, the provisions of Section 1 (Definitions), Section 10 (Assignment and Subcontracting), Section 14 (Indemnity), Section 15 (Dispute Resolution), Section 16 (Notices), and Section 17 (Miscellaneous) shall survive the expiration or termination of this Agreement for any reason; provided, that the survival of any particular provision or set of provisions shall be limited in duration if and to the extent such survival is explicitly limited herein or otherwise limited by Applicable Legal Requirements.

17.14 **Severability.** If any term, covenant or condition in this Agreement shall, to any extent, be invalid or unenforceable in any respect under the laws governing this Agreement, the remainder of this Agreement shall not be affected thereby, and each term, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by Applicable Legal Requirements and, if appropriate, such invalid or unenforceable provision shall be modified or replaced to give effect to the underlying intent of the Parties and to the intended economic benefits of the Parties.

17.15 **Nonrecourse.** The obligations of the Lessor and the Lessee under this Lease are not intended to and shall not be personally binding on, nor shall any resort be had to the private properties of, any of the Lessor's officers, employees, agents nor of the Lessee's trustees or board of directors and officers, as the case may be, or any beneficiaries, employees, agents or the like thereof. In no event shall the Lessor ever be liable to the Lessee for any indirect or consequential damages under the provisions of this Agreement, and in no event shall the Lessee ever be liable to the Lessor for any indirect or consequential damages hereunder.

17.16 **Representations.**

(a) **Certificate of Authorization:** If Lessee is a corporation, each person executing this Agreement on behalf of the Lessee hereby covenants, represents and warrants that Lessee is a duly incorporated or duly qualified (if foreign) corporation and is authorized to do business in the Commonwealth of Massachusetts (a copy of

evidence thereof to be supplied to the Lessor upon execution of this Agreement); and that each person executing this Agreement on behalf of the Lessee is an officer of Lessee duly authorized to execute, acknowledge and deliver this Agreement to the Lessor. Lessee shall provide a copy of a corporate resolution to this effect at or prior to execution of this Agreement.

(b) **Tax Compliance Certification:** Pursuant to M.G.L. c. 62C § 49A(b), each person signing this Agreement on behalf of the Lessee hereby certifies, under the penalties of perjury, that to the best of his/her knowledge and belief, the Lessee has complied with any and all applicable state tax laws, reporting of employees and contractors, and withholding and remitting child support.

(c) **Certificate of Non-collusion:** The undersigned certifies under penalties of perjury that this Agreement has been made in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity of group of individuals.

(d) **Foreign Corporation:** Lessee, if a foreign corporation, hereby certifies compliance with M.G.L. c. 181 § 4.

(e) **Covenants:** Lessee covenants that: (1) it presently has no financial interest and shall not acquire any such interest direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement or which would violate M.G.L. c. 268A, as amended from time-to-time, (2) in the performance of this Agreement, no person having such an interest shall be employed by the Lessee.

(f) **Non-Discrimination:** Lessee certifies that it will not discriminate in its employment practices, that it will provide equal employment opportunities for all qualified persons without regard to race, color, religion, sex or national origin; and that it is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices.

17.17 **Authority.** Each Party covenants, warrants and represents that it has full power and authority to enter into this Agreement.

17.18 **Notice of Lease.** The Parties shall execute and record in the land records of the county where the Lease Area is located a notice of lease in the form of Exhibit G hereto.

*[The remainder of this page has been intentionally left blank.]*

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

LESSOR: TOWN OF HAMILTON

By: \_\_\_\_\_  
Name: Michael A. Lombardo  
Title: Town Manager

LESSEE:

By: \_\_\_\_\_  
Name:  
Title:

**EXHIBIT A**  
**SCOPE OF WORK**

Technical Design Process

Compliance with Post Closure Use of Capped Landfills

Permitting

Site Preparation and Construction

Commissioning Protocol and Interconnection

**EXHIBIT B**  
**SCHEDULE**

**EXHIBIT C**

**DESCRIPTION OF FACILITY**

The Facility Description below is based on the proposed Facility. The final Facility Description shall be the Final Drawings.

Proposed Description of Facility

**EXHIBIT D**

**Rent; Host Termination Payment**

**A. Initial Rent:**        \$\_\_\_\_\_/year

**B. Term Rent**

Contract Year	Term Rent (escalating amount)
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

**C. Host Termination Payment**

Contract Year	Early Termination Price
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

**EXHIBIT E**

**DESCRIPTION OF THE PREMISES**

**Address: Chebacco Road, Hamilton, Massachusetts. An aerial view of the landfill is shown on the following page.**

**Legal Description:**

The Premises are located on the former site of the Town of Hamilton, Massachusetts landfill. The Landfill is to be capped in 2013, under the requirements of the Massachusetts Department of Environmental Protection, at the time the cap was constructed. The cap was designed by CDM Smith, Inc., of Cambridge, MA.

Attached is the Deed recorded at Essex South Registry at Book \_\_\_\_\_, Page \_\_\_\_\_ which contains a legal description of the Premises.



**EXHIBIT F**  
**PLAN OF LEASE AREA**

**EXHIBIT G  
NOTICE OF LEASE**

RECORDING REQUESTED BY, PREPARED  
BY AND WHEN RECORDED RETURN TO:

(Space above this line for recorder's use only)

**NOTICE OF LEASE**

This Notice of Lease is made on \_\_\_\_\_, 2014, by and between Town of Hamilton, Massachusetts ("Lessor") and \_\_\_\_\_, a ("Lessee") and together with Lessor, the "Parties").

In accordance with the provisions of Massachusetts General Laws Chapter 183, Section 4, as amended, notice is hereby given of the following described lease:

Date of Lease: \_\_\_\_\_, 2014

Lessor: Town of Hamilton, Massachusetts  
577 Bay Road  
Hamilton, MA 01936

Lessee:

Leased Premises: A portion of the landfill property owned by Lessor located at Chebacco Road, Hamilton, MA, together with the right of access thereto from the public way. A legal description of the Lessor's land upon which the Leased Premises is located is attached hereto as Annex 1. A depiction of the Leased Premises is attached hereto as Annex 2.

Initial Term: From \_\_\_\_\_ until 11:59 p.m. on the day preceding the twentieth anniversary of the Commercial Operation Date (as defined in the Lease dated \_\_\_\_\_) between Lessor and Lessee.

Leasehold

Access Rights: Appurtenant to the Leased Premises is the non-exclusive right and license, subject to the terms of the Lease for ingress and egress over all adjacent property of Lessor.

Ownership of

the Facility: Lessee or Lessee's assigns, will at all times retain title to and be the legal and beneficial owner of the Facility, which will at all times retain the legal status of personal property of Lessee as defined under Article 9 of the Uniform Commercial Code. The Facility will not attach to or be deemed a part of, or a fixture to, the Leased Premises, notwithstanding the manner in which the Facility is or may be affixed to the real property of Lessor.

The term “Facility” means the Source Separated Organic Waste Processing Facility installed at Lessor’s property, including but not limited to the Facility Assets.

“*Facility Assets*” means each and all of the assets of which the Facility is comprised, including structures and equipment installed on Lessor’s premises, electric lines and conduits required to connect such equipment to the Delivery Point and the LDC System (as such terms are defined in the Lease), protective and associated equipment, improvements, metering devices, and other tangible and intangible assets, permits, property rights and contract rights reasonably necessary for the construction, operation, and maintenance of the Facility.

[Signatures begin on following page]

Executed and effective as of the date first set forth above.

**LESSOR: TOWN OF HAMILTON**

**By:** \_\_\_\_\_  
**Name:**  
**Title:**

COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, ss.

On this \_\_\_\_ day of \_\_\_\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was a Massachusetts driver's license, to be the person whose name is signed on the preceding document, and acknowledged to me that he signed it voluntarily for its stated purpose, as \_\_\_\_\_ of Town of Hamilton.

\_\_\_\_\_  
Notary Public  
My commission expires:

**LESSEE:**

**BY:**

**By:** \_\_\_\_\_  
**Name:**  
**Title:**

COMMONWEALTH OF MASSACHUSETTS

\_\_\_\_\_, ss.

On this \_\_\_\_ day of \_\_\_\_\_, before me, the undersigned notary public, personally appeared \_\_\_\_\_, proved to me through satisfactory evidence of identification, which was a Massachusetts driver's license, to be the person whose name is signed on the preceding document, and acknowledged to me that he signed it voluntarily for its stated purpose, as \_\_\_\_\_ of \_\_\_\_\_.

\_\_\_\_\_  
Notary Public  
My commission expires:

**Annex 1 to Notice of Lease**

**DESCRIPTION OF LESSOR'S PROPERTY**

See Quitclaim Deed recorded at Essex South Registry of Deeds at Book \_\_\_\_\_, Page \_\_\_\_\_.

**Annex 2 to Notice of Lease**

**DEPICTION OF LEASED PREMISES**

## EXHIBIT H

### LESSEE'S DUTIES AT PREMISES

1. Lessee's use of the Lease Area shall be subject to full compliance by the Lessee in all respects with the terms and conditions of any and all post-closure use permits or orders granted at any time throughout the Term by the Massachusetts Department of Environmental Protection (DEP) regarding the landfill located on the Premises.
2. Lessor may have continued operation or maintenance responsibilities required pursuant to the terms and conditions of any and all post-closure use permits or orders granted at any time throughout the Term by the Massachusetts Department of Environmental Protection regarding the landfill located on the Premises, to be conducted at the sole expense of the Lessor, and Lessee will use its best efforts to cooperate with Lessor's prosecution and completion of such work.
3. Lessee's access to the Premises shall be through \_\_\_\_\_. The area designated for use as a municipal \_\_\_\_\_ (see Exhibit E) ("***Lessor Use Area***"). Access to portions of the Lease Area traverses the Lessor Use Area. Lessee shall coordinate with Lessor its access across the Lessor Use Area to minimize interference in the activities conducted in the Lessor Use Area.
4. Lessee's construction hours shall be limited to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 8:00 to 5:00 p.m. on Saturdays, provided however that operation of earth-moving vehicles shall not be permitted on weekdays after 5 p.m. and shall not be permitted on Saturday. No construction work (or vehicle delivery) will be conducted on Sunday. The Lessee may request and the Department of Public Works Director may approve extension of these hours for reasonable cause.
5. The landfill is equipped with groundwater monitoring wells, and drainage features. All of these appurtenances are used to monitor or maintain the environmental performance of the landfill and shall not be obstructed or disturbed.
6. Subject to DEP approval, Lessee shall install all proposed utility lines underground between the Lease Area surface, upon completion of grading, and the cap. Lessee shall take care not to penetrate the cap and not to interfere with the Lessor's activities conducted in the Lessor Use Area.
7. The DEP requires regular maintenance of the vegetative cover of the capped landfill. This includes regular mowing to prevent tree growth, long rooted plant growth, and to prevent erosion and damage to the cap. Subject to DEP requirements and unless otherwise directed by DEP, all areas disturbed during construction shall be loamed, seeded and mulched, as soon as practical, and it shall be the Lessee's responsibility throughout the Term to maintain the vegetative cover and prevent erosion within the Lease Area. The Lessee shall submit to Lessor a detailed operations and maintenance plan in compliance with the DEP post-closure permit.
8. All packing material and construction debris will be the responsibility of the Lessee to remove and properly dispose of off-site.

9. Signage instructing visitors and interested citizens who are in proximity to the Facility to refrain from trespassing on the Lease Area and will be provided by the Lessee, to the satisfaction of the Director of the Department of Public Works.
10. Prior to installing Facility equipment in the Lease Area, the Lessee shall install security fencing around the Lease Area to prevent unauthorized access and damage to the Facility. The Lessee shall submit to the Director of the Department of Public Works for approval a schematic plan for the security fencing. Security fencing shall comply with any applicable DEP requirements. The Lessee shall provide to the Director of the Department of Public Works a means of access to the Lease Area at all times.
11. The Lessee is responsible for providing its own utility/sanitary services needs during construction in the Lease Area.
12. The Lessor anticipates no additional snowplowing beyond the customary paths and ways plowed now by Lessor's staff. Lessor shall consider providing minor additional snowplowing at the request of Lessee, but in the event that Lessee's access to the Lease Area requires substantial additional snowplowing, Lessee shall be responsible.

**EXHIBIT I**

**AGREEMENT FOR PAYMENT IN LIEU OF TAXES FOR  
REAL PROPERTY AND PERSONAL PROPERTY**

THIS AGREEMENT FOR PAYMENT IN LIEU OF TAXES FOR REAL PROPERTY AND PERSONAL PROPERTY (this “PILOT Agreement”) is made and entered into as of \_\_\_\_\_, 2014 by and between \_\_\_\_\_, a Delaware limited liability company, (“Developer”), and the TOWN OF HAMILTON, a municipal corporation duly established and located in the Commonwealth of Massachusetts (the “Town”). Developer and the Town are collectively referred to in this PILOT Agreement as the “Parties” and are individually referred to as a “Party”.

**WHEREAS**, Developer plans to build and operate a Source Separated Organic Waste Processing Facility (the “Project”) on approximately a \_\_\_\_ acre parcel of land located at Chebacco Road, Hamilton, Massachusetts, \_\_\_\_\_ as more particularly shown in Exhibit A (the “Property”);

**WHEREAS**, the Parties have entered into a Lease agreement, which serves one or more municipal purposes;

**WHEREAS**, the municipal purposes of the Project include \_\_\_\_\_;

**WHEREAS**, notwithstanding the above, the Parties acknowledge that under General Laws Chapter 59, §2B, the use of Town property in connection with a business conducted for profit or leased or occupied for other than public purposes, shall be valued, classified, assessed and taxed to the lessee in the same manner and to the same extent as if the lessee were the owner thereof in fee, and that therefore the Project and/or the Property may be deemed subject to personal and/or real property taxes;

**WHEREAS**, the Parties wish to avoid uncertainty as to the future real or personal property tax liability attributable to the Project that may be incurred by the Developer;

**WHEREAS**, it is the intention of the Parties that Developer make levelized, annual payments to the Town for the term of this PILOT Agreement in lieu of real and personal property taxes on the Project, in accordance with General Laws Chapter 59, §38H (Acts of 1997 Chapter 164, Section 71(b)), as amended) and the Massachusetts Department of Revenue (DOR) Guidelines published in connection therewith;

**WHEREAS**, because both Developer and the Town need an accurate projection of their respective expenses and revenues with respect to the real and personal property that is taxable under law, the Parties believe that it is in their mutual best interests to enter into this Agreement fixing the

payments that will be made with respect to all taxable real and personal property incorporated within the Project for the term of the Agreement;

**WHEREAS**, the Parties intend that, during the term of the Agreement, Developer will not be assessed for any statutory real and personal property taxes to which it might otherwise be subjected under Massachusetts law, and this Agreement will provide for the exclusive payments in lieu of such real and personal property taxes that Developer (or any successor owner of the Project) will be obligated to make to the Town with respect to the Project during the term hereof, provided, however, that the Parties do not intend for this Agreement to affect any direct payments for services provided by the Town to the Project, including but not limited to, water and sewer services, and similar payment obligations not in the nature of real or personal property taxes or substitutes for such taxes that Developer may otherwise be obligated to pay the Town;

**WHEREAS**, the Town is authorized to enter into this Agreement with Developer, as the culmination of good faith negotiations that anticipate that the payments in lieu of real and personal property taxes over the life of the Agreement will amount to the equivalent, taking into account other benefits to be received by the Town, of the property tax payments that would otherwise be determined under G.L. c.59 based upon the full and fair cash valuation of the Project; and

**WHEREAS**, the Parties intend to execute this Agreement contingent upon approval at the 2014 annual Hamilton Town Meeting;

**NOW THEREFORE**, in exchange for the mutual commitments and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the Parties agree as follows:

1. Payment in Lieu of Real and Personal Property Taxes. Developer agrees to make annual payments to the Town in lieu of real and personal property taxes on and after the Effective Date in an annual fixed amount of \$\_\_\_\_\_ for so long as the Town is required to assess real and personal property taxes with respect to the Lease Area until the termination of the Lease. Each annual payment will be paid to the Town on or before February 1 of each fiscal tax year and the annual payment amount and payment date will be noted on a bill issued by the Town to the Developer at least thirty (30) days prior to the due date. At the time of termination of this PILOT Agreement, the Town shall reimburse the Developer a pro-rated amount of the payment in lieu of taxes for days remaining in the fiscal year after the date of termination. Except to the extent that Paragraphs 2, 3 and 4 of the Agreement provide otherwise, Developer agrees that the payments in lieu of taxes under this Agreement will not be reduced on account of a depreciation factor, revaluation or reduction in the Town's tax rate or assessment percentage and the Town agrees that the payments in lieu of taxes will not be increased on account of an inflation factor, revaluation or increase in the Town's tax rate or assessment percentage.
2. Payment Collection. The provisions of General Laws Chapter 60 and other applicable law will govern the collection of any payments in lieu of taxes provided for in this Agreement as though they were real or personal property taxes due and payable to the Town.
3. Tax Status, Separate Tax Lot. The Town agrees that during the term of this PILOT Agreement, the Town will not assess Developer for any real estate and personal property taxes with respect to the Project or the Property to which Developer might otherwise be

subject under Massachusetts law, and the Town agrees that this Agreement will exclusively govern the payments of all ad valorem real estate and personal property taxes and payments in lieu of such taxes that Developer will be obligated to make to the Town with respect to the Project and the Property, provided, however, that this Agreement is not intended to affect, and will not preclude, other assessments of general applicability by the Town for excise taxes on vehicles due pursuant to General Laws Chapter 60A and for services provided by the Town to the Project, including but not limited to, water and sewer services. The Town agrees that no real or personal property taxes will be due from or assessed to Developer with regard to the Property or the associated real or personal property other than the payments in lieu of taxes described in this PILOT Agreement.

7. Successors and Assigns. This Agreement will be binding upon the successors and assigns of Developer, and the obligations created hereunder will run with the Property and the Project. In the event that Developer sells, transfers, leases or assigns the Property or all or substantially all of its interest in the Project, this Agreement will thereafter be binding on the purchaser, transferee or assignee. A Notice of this Agreement will be recorded in the applicable Registry of Deeds forthwith upon execution.

8. Statement of Good Faith. The Parties agree that the payment obligations established by this Agreement were negotiated in good faith in recognition of and with due consideration of the full and fair cash value of the Project, to the extent that such value is determinable as of the date of this Agreement, and the other benefits to be received by the Town in accordance with General Laws Chapter 59, §38H. Each Party was represented by counsel in the negotiation and preparation of this PILOT Agreement and has entered into this PILOT Agreement after full and due consideration and with the advice of its counsel and its independent consultants. The Parties further acknowledge that this PILOT Agreement is fair and mutually beneficial to them because it reduces the likelihood of future disputes over real and personal property taxes, establishes tax and economic stability at a time of continuing transition and economic uncertainty in Massachusetts and the region, and fixes and maintains mutually acceptable, reasonable and accurate payments in lieu of taxes for the Project that are appropriate and serve their respective interests. The Town acknowledges that this Agreement is beneficial to it because it will result in mutually acceptable, steady, predictable, accurate and reasonable payments in lieu of taxes to the Town. Developer acknowledges that this Agreement is beneficial to it because it ensures that there will be mutually acceptable, steady, predictable, accurate and reasonable payments in lieu of taxes for the Project.

9. Additional Documentation and Actions. Each Party will, from time to time hereafter, execute and deliver or cause to be executed and delivered, such additional instruments, certificates and documents, and take all such actions, as the other Party reasonably requests for the purpose of implementing or effectuating the provisions of this Agreement and, upon the exercise by a Party of any power, right, privilege or remedy pursuant to this Agreement that requires any consent, approval, registration, qualification or authorization of any third party, each Party will execute and deliver all applications, certifications, instruments and other documents and papers that the exercising Party may be so required to obtain.

10. Invalidity. If, for any reason, including a change in applicable law, it is ever determined that

this Agreement is invalid, then this Agreement shall terminate as of the date of such determination, and the Property and Project will thereafter be assessed and taxed as though this Agreement does not exist. The Parties will cooperate with each other, and use reasonable efforts to defend against and contest any challenge to this Agreement by a third party.

12. Notices. All notices, consents, requests, or other communications provided for or permitted to be given hereunder by a Party must be in writing and will be deemed to have been properly given or served upon the personal delivery thereof, via courier delivery service or otherwise. Such notices shall be addressed or delivered to the Parties at their respective addresses shown below.

To Developer:

To Town:

Town Manager  
Town of Hamilton  
577 Bay Road  
Hamilton, MA 01936

Any such addresses for the giving of notices may be changed by either Party by giving written notice as provided above to the other Party. Notice given by counsel to a Party shall be effective as notice from such Party.

13. Applicable Law. This Agreement will be made and interpreted in accordance with the laws of the Commonwealth of Massachusetts. Developer and the Town each consent to the jurisdiction of the Massachusetts courts or other applicable agencies of the Commonwealth of Massachusetts regarding any and all matters, including interpretation or enforcement of this Agreement or any of its provisions.

14. Good Faith. The Town and Developer shall act in good faith to carry out and implement this Agreement.

15. Force Majeure/ Casualty. The Developer and Town both recognize that there is the possibility during the term of this Agreement that all or a portion of the Property or Project may be damaged or destroyed or otherwise rendered unusable due to events beyond the control of either Party on account of "Force Majeure" (as defined in the Lease) or casualty.

In the event an event of Force Majeure or Casualty during the term of this Agreement with respect to any portion of the Property or Project that renders the Property or Project unusable for the customary purpose of the production of electricity, and the Developer requests a reduction in its payment in lieu of taxes under this Agreement, a pro rata adjustment for the number of days of such Force Majeure or Casualty period shall be made in the PILOT bill in the next ensuring fiscal year.

16. Covenants of Developer. During the term of the Agreement, Developer will not voluntarily do any of the following:

- a. seek to invalidate this Agreement, or otherwise take a position adverse to the purpose or validity of this Agreement, except as expressly provided herein; or
- b. convey, without the express consent of the Town, by sale, lease or otherwise any interest in the licensed area to any entity or organization that qualifies as a charitable organization pursuant to General Laws Chapter 59, §5 (Third).

17. Covenants of the Town. So long as Developer is not in breach of this Agreement during its term, the Town will not do any of the following:

- a. seek to invalidate this Agreement or otherwise take a position adverse to the purpose or validity of this Agreement;
- b. seek to collect from Developer any property tax upon the licensed area or the improvements thereon (including the Project) in addition to the amounts herein;
- c. impose any lien or other encumbrance upon the licensed area or the improvements thereon (including the Project) except as is expressly provided herein;

Executed under seal by the undersigned as of the day and year first written above, each of whom represents that it is fully and duly authorized to act on behalf of and bind its principals.

TOWN OF HAMILTON

---

Michael A. Lombardo  
Title: Town Manager

By: \_\_\_\_\_

Name:  
Title:

**Appendix B**  
**Site Plan**  
**Figure 2-2**



# **Appendix C**

## **Recent Environmental Monitoring Report**

# Report

## Town of Hamilton, MA

Fall 2013  
Semiannual Environmental  
Monitoring Report

Hamilton Sanitary Landfill

November 2013

***Weston&Sampson***

Weston & Sampson Engineers, Inc.  
Five Centennial Drive  
Peabody, MA 01960-7985  
[www.westonandsampson.com](http://www.westonandsampson.com)  
Tel: 978-532-1900  
Fax: 978-977-0100

**Town of Hamilton, Massachusetts  
Weston & Sampson Project No. 2130476**

November 25, 2013

Mr. John Carrigan, Section Chief  
Division of Solid Waste Management  
Department of Environmental Protection  
Northeast Regional Office  
205B Lowell Street  
Wilmington, Massachusetts 01887

Re: Hamilton Sanitary Landfill  
Fall 2013 Semiannual Environmental Monitoring

Dear Mr. Carrigan:

Weston & Sampson is pleased to submit the results of the fall 2013 semiannual groundwater, surface water, sediment, and soil gas monitoring at the Hamilton Sanitary Landfill (landfill) located on Chebacco Road in Hamilton, Massachusetts. The purpose of this environmental monitoring program is to evaluate groundwater, surface water and sediment quality at the landfill and to measure the potential for landfill gas migration beyond the property boundary, as required by the Massachusetts Department of Environmental Protection (DEP).

A locus map (Figure 1) shows the location of the landfill, a site plan (Figure 2) shows the groundwater monitoring well and surface water locations, and groundwater flow direction. Groundwater elevations are summarized in Table 1 and groundwater elevations are contoured in Figure 2. The laboratory analytical results are summarized in Tables 2 through 4. Landfill gas monitoring results are summarized in Table 5. Historic data tables are included in Appendix A. The analytical laboratory report is presented in Appendix B.

## **METHODS**

### **Groundwater, Surface Water, and Sediment Sampling**

On September 30, 2013 Weston & Sampson collected water samples from six (6) groundwater monitoring wells (MW-1, MW-3, MW-4S, MW-4D, MW-6S, and MW-6D), two (2) surface water sampling locations (SW-2 and SW-3), and two sediment sampling locations (SED-1 and SED-3). Groundwater monitoring well MW-2 and surface water location SW-1 were dry and therefore not sampled. Groundwater monitoring well MW-5 was destroyed due to possible snow removal activities along Chebacco Road. For quality assurance purposes, a duplicate groundwater sample (DUP-1) was collected at well MW-4D, and a laboratory-supplied trip blank accompanied all volatile organic compound (VOC) samples.

Weston & Sampson first measured the depth to water and total well depths before purging or sampling. The standing volume of water at a well was calculated using these measurements. Five standing volumes of water were purged from each well prior to sampling. Weston & Sampson collected samples using dedicated disposable bailers or the Waterra Hydrolift® inertial pump system with dedicated polyethylene tubing. Weston & Sampson collected surface water samples using dedicated disposable bailers and placed the samples into pre-cleaned bottles provided by the laboratory.

If any non-dedicated sampling equipment was used between water sampling locations, Weston & Sampson decontaminated that non-dedicated equipment between wells using an Alconox wash followed by a rinse using distilled water.

Weston & Sampson measured water temperature, specific conductivity, pH, and dissolved oxygen in the field using water quality meters. Weston & Sampson submitted water samples to TestAmerica Laboratories, Inc. (TAL), a Massachusetts-certified laboratory, for laboratory analyses of the following parameters: metals (RCRA 8 plus calcium, copper, iron, manganese, sodium, and zinc), alkalinity, chemical oxygen demand (COD), chloride, physiologically available cyanide (PAC), nitrate, sulfate, total dissolved solids (TDS), volatile organic compounds (VOCs) by EPA Method 8260 including Tentatively Identified Compounds (TICs) having unknown peaks greater than five times the background intensity, and 1,4-dioxane by EPA Method 8260 SIM. Sediment samples were also submitted to TestAmerica Laboratories, Inc. for the analyses of total metals (RCRA 8 plus calcium, copper, iron, manganese, sodium, and zinc) and VOCs by EPA Method 8260 including Tentatively Identified Compounds (TICs) having unknown peaks greater than five times the background intensity. Groundwater and surface water samples were filtered in the field using a 0.45-micron disposable filter and analyzed for dissolved metals.

All samples were stored on ice after collection and during transport to the laboratory. All samples were handled and relinquished using standard quality assurance and chain-of-custody procedures.

### **Landfill Gas Monitoring**

On November 1, 2013, Weston & Sampson conducted landfill gas monitoring at twenty-one (21) gas monitoring probes (SG-1 through SG-14, SG-16 through SG-19, SG-21, SG-22, and SG-24) for landfill gas parameters listed in 310 CMR 19.132. SG-15 could not be located, and SG-20 and SG-23 are destroyed. Figure 2 shows the location of each monitoring point.

A Landtec GEM 5000 (GEM-5000) was used to measure methane (CH<sub>4</sub>) and oxygen (O<sub>2</sub>) concentrations in percentages by volume (%). If any methane concentrations were present, they were converted to percent lower explosive limit (% LEL). The GEM-5000 is also equipped with an internal gas sensor that measures hydrogen sulfide (H<sub>2</sub>S) concentrations in parts per million (ppm). An Ion Science Tiger photoionization air monitor was used to measure non-methane volatile organic compounds (NMVOCs) in ppm. Both instruments were calibrated prior to monitoring.

The landfill gas monitoring probes were sampled under initial conditions and steady state conditions. The initial condition concentrations were determined by sampling each probe prior to purging. This is representative of landfill gas parameters that might accumulate in a confined space over time. After the initial conditions were recorded, each probe was purged for two minutes using an SKC Model 224 PCXR8 universal air pump at a rate of five liters per minute. After purging, gas concentrations were measured a second time. These concentrations represent the steady state subsurface soil gas

concentration.

### **COMPARABLE STANDARDS**

Groundwater monitoring well results were compared to Massachusetts Drinking Water Standards, published by the DEP in Spring 2012. These standards include Massachusetts Maximum Contaminant Level (MMCL), Secondary Maximum Contaminant Level (SMCL), and Office of Research and Standards Guideline (ORSG) concentrations. If one of these drinking water standards did not exist for an analyte, the result was compared to the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000, revised June 26, 2009) Method 1 standards for GW-1 and GW-3 category groundwater. 1,4-Dioxane was compared to the Method 1 GW-1 Standard. An Area Receptors Map is provided in Figure 3.

Surface water results were compared to Massachusetts Surface Water Standards (MSWS) (314 CMR 4.00). This regulation incorporates, by reference, additional surface water standards including the National Recommended Water Quality Criteria (NRWQC) published by the EPA in 2009. If no MSWS or NRWQC was listed, results were compared to the Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision (ES/ER/TM-96/R2) (Toxicological Benchmarks).

Sediment results were compared to the Threshold Effects Concentrations (TEC) adopted by DEP. TECs are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms are not expected.

Landfill gas results were compared to the reporting threshold requirements of 310 CMR 19.132(4)(h), which require notification to DEP within 24 hours if explosive gases exceed 25% LEL at the landfill property boundary.

Parameters that were detected at concentrations greater than these standards and guidelines are shown as shaded and bold in the results tables.

### **RESULTS AND DISCUSSION**

#### **Groundwater Flow**

The fall 2013 groundwater elevation data presented in Table 1 indicates that groundwater flows northwest towards Gravelly Pond. Based on this flow pattern, well couplet MW-4S/4D and well MW-3 are hydraulically upgradient, MW-1 and MW-2 are hydraulically cross-gradient, and the rest of the monitoring wells are hydraulically downgradient. An upward vertical hydraulic gradient was observed at couplets MW-4S/MW-4D and MW-6S/6D.

#### **Groundwater Quality/Trend Analysis/QAQC**

##### Groundwater Quality

September 2013 groundwater results summarized in Table 2 indicated that the following parameters were detected at concentrations above Massachusetts Drinking Water Standards.

*MMCL:*

- There were no parameters above the MMCL during this monitoring event.

*SMCL:*

- Groundwater pH was below the lower limit of 6.5 in all wells sampled.
- Dissolved iron in all wells sampled, except MW-6S, at concentrations ranging from 1.4 milligrams per liter (mg/L) to 9.5 mg/L.
- Dissolved manganese in all wells sampled at concentrations ranging from 0.098 mg/L to 11 mg/L.

*ORSG:*

- Dissolved sodium in MW-4S and MW-6D at concentrations of 31 mg/L and 21 mg/L, respectively.

Two VOCs, 1,4-dichlorobenzene and chlorobenzene, were detected in site wells during the September 2013 monitoring round. 1,4-Dichlorobenzene was detected in MW-3, MW-4D, and DUP-1 at concentrations of 1.1 micrograms per liter ( $\mu\text{g/L}$ ), 2.2  $\mu\text{g/L}$ , and 2.4  $\mu\text{g/L}$ , respectively. Chlorobenzene was detected in MW-3, MW-4D, DUP-1, and MW-6D at concentrations of 4.2  $\mu\text{g/L}$ , 4.9  $\mu\text{g/L}$ , 5.0  $\mu\text{g/L}$ , and 1.5  $\mu\text{g/L}$ , respectively. The detected concentrations were all below the applicable standards. 1,4-Dioxane was not detected in any groundwater monitoring wells during the September 2013 monitoring round.

Tentatively Identified Compounds (TICs) were detected in site wells during the September 2013 monitoring round. One TIC identified as tert-butyldimethylsilanol was detected in MW-1 at a concentration of 2.9  $\mu\text{g/L}$ . Two TICs identified as chlorodifluormethane and silanol, trimethyl (1,1,2-trimethylpropyl) were detected at MW-3 at concentrations of 6.0  $\mu\text{g/L}$  and 4.1  $\mu\text{g/L}$ , respectively. One TIC identified as chlorodifluormethane was detected in MW-4S at a concentration of 1.3  $\mu\text{g/L}$ . Three TICs identified as chlorodifluormethane, ethyl ether, and silanol, trimethyl were detected in MW-4D at concentrations of 20  $\mu\text{g/L}$ , 5.1  $\mu\text{g/L}$ , and 4.2  $\mu\text{g/L}$ , respectively. One TIC identified as chlorodifluormethane was detected in MW-6D and DUP-1 at concentrations of 1.3  $\mu\text{g/L}$  and 20  $\mu\text{g/L}$ , respectively. One TIC identified as ethyl ether was also detected in MW-6D and DUP-1 at concentrations of 2.2  $\mu\text{g/L}$  and 5.5  $\mu\text{g/L}$ , respectively.

Trend Analysis

The September 2013 round is the fifth round in which groundwater quality has been analyzed by Weston & Sampson. Weston & Sampson has included the June 13, 2011 groundwater, surface water, and sediment results that were provided in the Kleinfelder/SEA Consultants Inc., Post-Comprehensive Site Assessment (Post-CSA) Round 3 Water Quality and Sediment Monitoring Results Report in Appendix A, as well as the four rounds of groundwater, surface water, and sediment results that were provided in the SEA Consultants, Inc., CSA Report. Additionally, trend tables for the fall 2011, spring 2012, fall 2012, spring 2013, and fall 2013 sampling rounds conducted by Weston & Sampson are included in Appendix A. Weston & Sampson compared the September 2013 results to the limited historic data during the Post-CSA time period.

The September 2013 groundwater results were consistent with historic results, with the following exceptions.

- COD was detected for the first time above the laboratory reporting limit (RL) in MW-1.
- TDS was detected at a historic high concentration in MW-1; however, the detected concentration was below the applicable standard.
- Dissolved zinc was detected for the first time above the laboratory reporting limit (RL) in MW-1; however, the RLs were higher during previous rounds and the detected concentration was below the applicable standard.
- Alkalinity, TDS, and dissolved barium were detected at historic high concentrations in MW-3; however, the detected concentrations were below the applicable standards.
- Dissolved iron and manganese were detected at historic high concentrations in MW-3.
- Dissolved zinc was detected for the first time above the laboratory RL in MW-3; however, the RLs were higher during previous rounds and the detected concentration was below the applicable standard.
- 1,4-Dichlorobenzene was detected for the first time above the laboratory RL in MW-3; however, the detected concentration was only marginally above the RL, and the detected concentration was below the applicable standard.
- The September 2013 round is the second time that chlorobenzene has been detected above the Drinking Water Standard in MW-3, and the detected concentration is higher than the first time in which it was detected above the standard in October 2012.
- Alkalinity, COD, TDS, and dissolved calcium were detected at historic high concentrations in MW-4S; however, the detected concentrations were below the applicable standards.
- A gradual increasing trend was observed in chloride concentrations in MW-4S.
- Dissolved iron and manganese were detected at historic high concentrations in MW-4S.
- Chloride, dissolved barium, calcium, and iron were detected at historic low concentrations in MW-4D.
- Dissolved cadmium was detected at a historic high concentration in MW-4D; however, the detected concentration was below the Drinking Water Standard and also was not significantly higher compared to previous results.
- Dissolved sodium, zinc, 1,4-dichlorobenzene, and chlorobenzene were detected at historic low concentrations in MW-4D and the sodium concentrations in this well are showing a gradual decreasing trend over the past five monitoring rounds.
- Chloride was detected at a historic high concentration in MW-6S; however, the detected concentration was below the Drinking Water Standard and also was not significantly higher

compared to previous results.

- Physiologically Available Cyanide (PAC) was detected for the first time above the laboratory RL in MW-6S and MW-6D; however, the detected concentration was below the applicable standard.

#### QA/QC

The September 2013 groundwater sampling and analytical program was performed with adequate QA/QC to support goals for precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) for laboratory analytical data. The QA/QC program provides an assessment of both field sample collection and handling methods and laboratory analysis method selection and analytical procedures. Field quality control includes measures undertaken during collection or handling of samples in the field (i.e., chains of custody, trip blanks, and field duplicates) to support collection of precise, accurate, and representative data. The analytical laboratory performs several internal quality controls to assess the accuracy, precision, and sensitivity of the sample data. These controls include surrogate spikes, matrix spike/matrix spike duplicates (MS/MSD), laboratory control spike and method blanks. QA/QC procedures as required by the analytical methods were achieved and the samples were received in a condition consistent with those described on the chain-of-custody. According to the laboratory results, the laboratory received all samples at approximately 2.7°C to 3.3°C and in good condition.

According to the laboratory narrative report, for Method 8260C, several compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 142451 and 142636. Due to the large number of analytes contained in the CCV, the method allows for 20% analytes to be outside limits under 40%; therefore, the data have been reported. Also for Method 8260C, the laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) for batches 142636 and 142723 exceeded control limits for 2-butanone. Unlike the calibration standards, this is due to the coelution of Ethyl Acetate in the spiking solution. This does not indicate a performance issue with the spike recovery, but rather the laboratory's ability to measure the two analytes together in a combined spiking solution. Through the use of spectral analysis, the two compounds can be distinguished from one another if present in a client sample.

For Method 300.0 (chloride), samples MW-1, MW-3, and DUP-1 were diluted to bring the concentration of target analytes within the calibration range. Elevated reporting limits are provided.

For Method 6010C (metals), the Serial Dilution in batch 480-142205 exhibited results outside the quality control limits for dissolved barium and calcium. However, the Post Digestion Spike was compliant so no corrective action was necessary.

For Method 353.2 (nitrate), the matrix spike recovery for batch 142147 was outside the control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

The results for the duplicate sample (DUP-1) that were collected at well MW-4D were generally similar to the results from the original sample. The Relative Percent Difference (RPD) between the original sample and duplicate sample for all parameters ranged from zero percent (%) to 13.9%. Physiologically Available Cyanide (PAC) was detected in the duplicate sample but not in the original sample. A trip blank sample was submitted for VOC analysis by Method 8260, in which acetone was detected at a concentration of 13 µg/L.

## Surface Water Quality/Trend Analysis

### Surface Water Quality

September 2013 surface water results summarized in Table 3 indicate that the following parameters were detected at concentrations exceeding the MSWS.

- The pH concentration at SW-2 was below the lower limit of 6.5.
- Dissolved barium at SW-2 and SW-3 at concentrations of 0.031 mg/L and 0.014 mg/L, respectively.
- Dissolved iron at SW-2 at a concentration of 6.3 mg/L.
- Dissolved manganese at SW-2 at a concentration of 1.6 mg/L.

VOCs and 1,4-dioxane were not detected at either surface water location sampled during the September 2013 monitoring round. One TIC identified as silanol, trimethyl was detected at SW-2 at an estimated concentration of 2.8 µg/L.

### Trend Analysis

The September 2013 round is the fifth round in which surface water quality has been analyzed by Weston & Sampson. Weston & Sampson has included the June 13, 2011 groundwater, surface water, and sediment results that were provided in the Kleinfelder/SEA Consultants Inc., Post-Comprehensive Site Assessment (Post-CSA) Round 3 Water Quality and Sediment Monitoring Results Report in Appendix A, as well as the four rounds of groundwater, surface water, and sediment results that were provided in the SEA Consultants, Inc., CSA Report. Additionally, trend tables for the fall 2011, spring 2012, fall 2012, spring 2013, and fall 2013 sampling rounds conducted by Weston & Sampson are included in Appendix A. Weston & Sampson compared the September 2013 results to the limited historic data during the Post- CSA time period.

The September 2013 surface water results were consistent with historic results, with the following exceptions.

- Sulfate was detected at a historic low concentration in SW-2.
- Dissolved barium was detected at a historic high concentration in SW-2; however, the detected concentration was not significantly higher compared to previous results.
- The September 2013 round is the first round that dissolved zinc was not detected above the laboratory RL in SW-2.
- Dissolved arsenic was detected for the first time above the laboratory reporting limit (RL) in SW-3; however, the detected concentration was below the applicable standard.
- Dissolved manganese was detected at a historic low concentration in SW-3.

## **Sediment Quality/Trend Analysis**

### Sediment Quality

The September 2013 sediment sampling results are summarized in Table 4. There were no parameters detected at concentrations above the TECs.

VOCs and TICs were not detected at either sediment sampling location during the September 2013 round.

### Trend Analysis

The September 2013 round is the fifth round in which sediment quality has been analyzed by Weston & Sampson. Weston & Sampson has included the June 13, 2011 groundwater, surface water, and sediment results that were provided in the Kleinfelder/SEA Consultants Inc., Post-Comprehensive Site Assessment (Post-CSA) Round 3 Water Quality and Sediment Monitoring Results Report in Appendix A, as well as the four rounds of groundwater, surface water, and sediment results that were provided in the SEA Consultants, Inc., CSA Report. Additionally, trend tables for the fall 2011, spring 2012, fall 2012, spring 2013, and fall 2013 sampling rounds conducted by Weston & Sampson are included in Appendix A. Weston & Sampson compared the September 2013 results to the limited historic data during the Post- CSA time period.

The September 2013 sediment results were generally consistent with historic results.

## **Landfill Soil Gas**

The soil gas results are summarized in Table 5. Methane was not detected in any soil gas monitoring probes sampled during the fall 2013 soil gas monitoring round under either initial or steady state conditions. The ambient methane concentration was recorded at less than 0.1%.

Oxygen was detected at all gas monitoring probes sampled under initial conditions at concentrations ranging from 20.5% to 20.8%. Oxygen was detected at all gas monitoring probes sampled under steady state conditions at concentrations ranging from 20.6% to 20.8%. The ambient oxygen concentration was recorded at 20.8%.

Hydrogen sulfide was not detected at any of the monitoring probes sampled under initial or steady state conditions. The ambient hydrogen sulfide concentration was recorded at less than 1 ppm.

NMVOCs were not detected at any of the monitoring probes sampled under initial or steady state conditions. The ambient NMVOC concentration was recorded at less than 0.1 ppm.

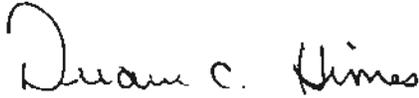
## ***RECOMMENDATIONS***

Weston & Sampson recommends that the Town of Hamilton continue to collect and analyze groundwater, surface water, and sediment samples from the locations and for the parameters listed in this report. Weston & Sampson also recommends the Town continue semiannual soil gas monitoring in accordance with the Environmental Monitoring Plan.

Please contact Weston & Sampson if you have any questions regarding the analyses or to discuss the recommendations provided.

Very truly yours,

WESTON & SAMPSON

A handwritten signature in black ink that reads "Duane C. Himes". The signature is written in a cursive style with a large initial 'D'.

Duane C. Himes, P.E., P.L.S.  
Associate

cc: Mr. Dave Hanlon, Town of Hamilton  
File

LEM

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## FIGURES

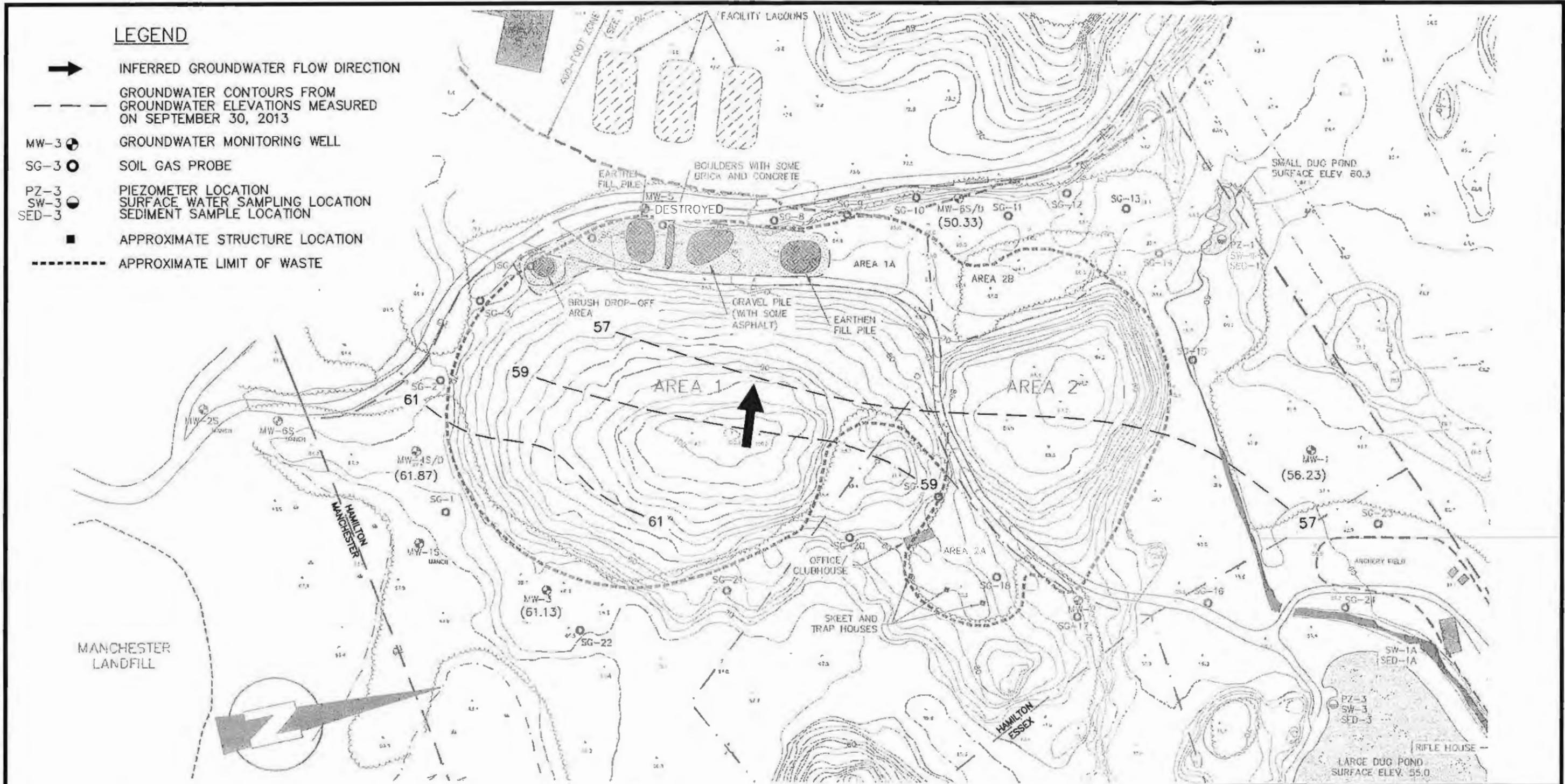


FIGURE 1  
TOWN OF HAMILTON, MASSACHUSETTS  
HAMILTON SANITARY LANDFILL

LOCUS MAP

0 2,000 4,000 Feet

Weston & Sampson



**LEGEND**

- ➔ INFERRED GROUNDWATER FLOW DIRECTION
- GROUNDWATER CONTOURS FROM GROUNDWATER ELEVATIONS MEASURED ON SEPTEMBER 30, 2013
- MW-3 ● GROUNDWATER MONITORING WELL
- SG-3 ○ SOIL GAS PROBE
- PZ-3 ○ PIEZOMETER LOCATION
- SW-3 ○ SURFACE WATER SAMPLING LOCATION
- SED-3 ○ SEDIMENT SAMPLE LOCATION
- APPROXIMATE STRUCTURE LOCATION
- APPROXIMATE LIMIT OF WASTE

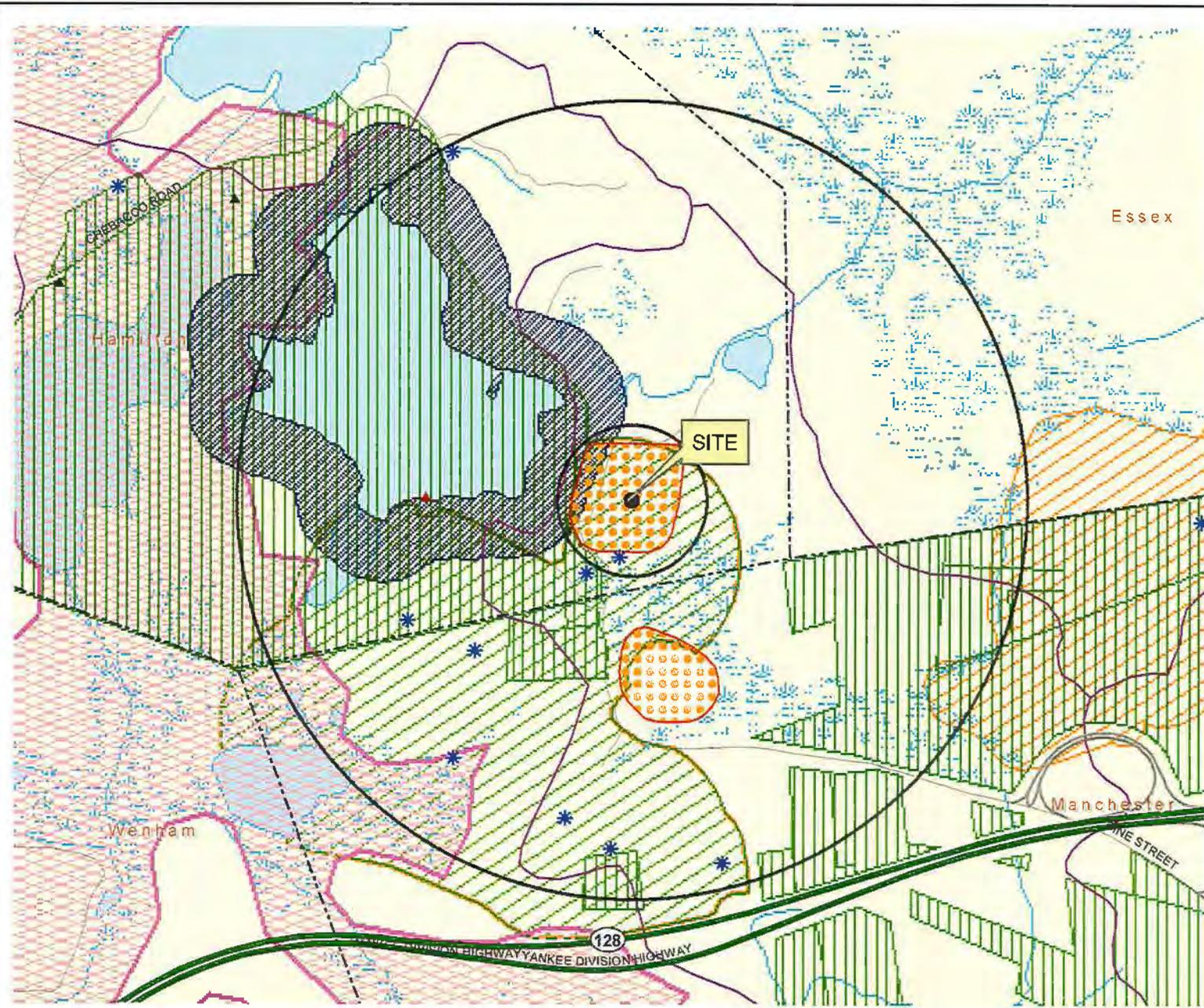
**GENERAL NOTES**

1. AERIAL PHOTOGRAMMETRY CONDUCTED AND COMPILED BY EASTERN TOPOGRAPHICS OF WOLFBORO, NH. PHOTO DATE: APRIL 2, 1989. SOME FEATURES DIGITIZED FROM MASSGIS ORTHOPHOTOS TAKEN APRIL 2001.
2. VERTICAL DATUM: NGVD 1929 (SUBJECT TO CONFIRMATION).
3. PROPERTY LINES ARE APPROXIMATE AND BASED UPON TOWN OF HAMILTON GIS DATA (2005).
4. LIMIT OF LANDFILL IS BASED UPON TEST PITS ADVANCED BY SEA IN SEPTEMBER 2007.
5. MANCHESTER WELLS MW-1S, MW-2S, MW-5S, AND MW-6S WERE INCLUDED IN THE HAMILTON CSA NETWORK AND USED FOR WATER LEVEL GAUGING ONLY.
6. THE ZONE A PROTECTION AREA FOR GRAVELLY POND IS APPROXIMATE AND BASED ON A 400-FOOT OFFSET FROM THE EDGE OF WATER.



FIGURE 2		
HAMILTON SANITARY LANDFILL TOWN OF HAMILTON, MASSACHUSETTS		
ENVIRONMENTAL MONITORING LOCATIONS SITE PLAN		
DESIGNED BY: LEM	CHECKED BY: DCH	DATE: SEPTEMBER 2013
<b>Weston &amp; Sampson</b>		

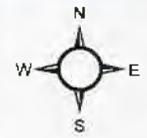
C:\Harrington\_MALF\0614\_2736476\CADD\October 2013 3W Contour\_Mc3.dwg



- Legend**
- - - Town Boundaries
  - - - State Boundary
  - ▲ Ground Water
  - ▲ Surface Water
  - ▲ Non-Community
  - ★ NHESP Certified Vernal Pools
  - Railroads by Ownership
  - Pipeline
  - Pipeline Arbitrary Extension
  - Powerline
  - Powerline Arbitrary Extension
  - Ski Lift/Tramway
  - Substation
  - Landing Strip/Airport
  - ◆ Highway Ext. Locations
- All Roads**
- Road Classification**
- Limited Access Highway
  - Multi-lane Hwy, not limited access
  - Other Numbered Highway
  - Major Road, Collector
  - Minor Road, Arterial
  - Sub-basins
  - Major Basins
  - Solid Waste Facilities
  - Protected Open Space
  - ACÉCs
  - Zone A
  - IWPAs
  - DEP Approved Zone IIs
  - River, Stream, Shoreline
  - Water
  - Wetland
  - Sole Source Aquifers
  - NHESP Estimated Habitats of Rare Wildlife
  - NHESP Priority Habitats of Rare Species
- Non Potential Drinking Water Source Area**
- High Yield
  - Medium Yield
- Aquifers**
- High Yield
  - Medium Yield
- MA Towns (from Survey Points)**
- MA Towns (from Survey Points)

FIGURE 3

Area Receptors Map  
Hamilton Sanitary Landfill  
Hamilton, Massachusetts



Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs  
Radii shown are approximately 500-foot and 1/2-mile from center of Site.

## TABLES

**Table 1  
Groundwater Elevation Data  
Hamilton Sanitary Landfill  
Hamilton, Massachusetts**

Monitoring Well Number	Top of PVC Well Casing Elevation (1,3)	Depth to Groundwater (1,2,4)											
		3/5/07	7/5/07	10/25/07	1/23/08	12/14/09	3/17/11	6/13/11	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
MW-1	62.91	4.38	5.07	7.43	4.58	4.38	4.43	5.02	4.70	5.14	6.70	4.85	6.68
MW-2	68.43	8.34	NA	NA	NA	7.23	5.65	Dry	8.68	Dry	-	7.44	---
MW-3	70.2	6.38	7.87	9.55	6.55	5.32	5.57	6.60	6.21	7.09	8.31	6.35	9.07
MW-4S	69.7	5.93	6.75	8.52	5.95	5.10	4.95	5.72	5.25	6.22	7.37	5.45	7.83
MW-4D	69.80	6.07	6.71	8.46	6.13	5.30	5.22	5.81	5.35	6.30	7.33	5.70	7.83
MW-5	73.80	12.16	12.88	15.79	11.82	11.18	10.94	12.09	11.51	12.54	--	--	--
MW-6S	74.43	19.45	21.22	24.58	21.24	19.79	18.75	21.53	20.73	21.61	24.44	19.81	24.10
MW-6D	74.21	18.83	20.02	23.44	20.00	18.77	18.26	20.48	19.73	20.55	23.20	18.98	22.94

Monitoring Well Number	Top of PVC Well Casing Elevation (1,3)	Groundwater Elevation (1)											
		3/5/07	7/5/07	10/25/07	1/23/08	12/14/09	3/17/11	6/13/11	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
MW-1	62.91	58.53	57.84	55.48	58.33	58.53	58.48	57.89	58.21	57.77	56.21	58.06	56.23
MW-2	68.43	60.09	NA	NA	NA	61.20	62.78	Dry	59.75	Dry	-	60.99	---
MW-3	70.2	63.82	62.33	60.65	63.65	64.88	64.63	63.60	63.99	63.11	61.89	63.85	61.13
MW-4S	69.7	63.77	62.95	61.18	63.75	64.60	64.75	63.98	64.45	63.48	62.33	64.25	61.87
MW-4D	69.80	63.73	63.09	61.34	63.67	64.50	64.58	63.99	64.45	63.50	62.47	64.10	61.97
MW-5	73.80	61.64	60.92	58.01	61.98	62.62	62.86	61.71	62.29	61.26	--	--	--
MW-6S	74.43	54.98	53.21	49.85	53.19	54.64	55.68	52.90	53.70	52.82	49.99	54.62	50.33
MW-6D	74.21	55.38	54.19	50.77	54.21	55.44	55.95	53.73	54.48	53.66	51.01	55.23	51.27

QC by LEM 11/13/13

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**Note:**

- (1) All elevations are in feet relative to mean sea level.
- (2) Depth to groundwater elevations measured from top of PVC riser.
- (3) S E A surveyed well casing elevations on December 4 and 5, 2007.
- (4) Groundwater elevation surveys completed prior to 11/14/11 were done by S E A.
- = unable to locate well
- = well destroyed
- = well dry
- NA = Not Analyzed

**Table 2  
Groundwater Sampling Results  
Hamilton Landfill  
Hamilton, Massachusetts  
September 30, 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 Standard (2)	Method 1 GW-3 Standard (2)	Monitoring Wells								
					MW-1	MW-2	MW-3	MW-4S	MW-4D	DUP-1 (MW-4D)	MW-5	MW-6S	MW-6D
<b>Field Parameters</b>													
Temperature	°C	NS	NS	NS	19.34	-	10.93	11.94	9.86	-	-	9.90	9.23
Specific Conductivity	mS/cm	NS	NS	NS	0.097	-	0.123	0.194	0.240	-	-	0.229	0.312
pH	unitless	6.5-8.5*	NS	NS	5.99	-	5.29	5.68	4.90	-	-	4.48	4.73
Dissolved Oxygen	mg/L	NS	NS	NS	1.79	-	1.75	1.88	2.15	-	-	5.62	5.37
<b>Inorganics</b>													
Alkalinity	mg/L	NS	NS	NS	29	-	67	51	170	170	-	50	140
Chemical Oxygen Demand	mg/L	NS	NS	NS	<10	-	<10	18	<10	<10	-	12	<10
Chloride	mg/L	250*	NS	NS	18	-	8.8	53	15	14	-	35	35
Physiologically Available Cyanide	mg/L	0.2 (3)	NS	NS	<0.010	-	<0.010	<0.010	<0.010	0.022	-	0.014	0.092
Nitrate	mg/L	10	NS	NS	<0.050	-	0.083	<0.050	<0.050	<0.050	-	0.72	<0.050
Sulfate	mg/L	250*	NS	NS	9.9	-	15	6.7	10	8.7	-	62	61
Total Dissolved Solids	mg/L	500*	NS	NS	120	-	120	190	220	210	-	250	320
<b>Dissolved Metals</b>													
Arsenic	mg/L	0.01	0.01	0.9	<0.010	-	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010
Barium	mg/L	2	2	50	0.019	-	0.076	0.072	0.040	0.039	-	0.037	0.050
Cadmium	mg/L	0.005	0.005	0.004	<0.0010	-	<0.0010	<0.0010	0.0015	0.0014	-	<0.0010	0.0013
Calcium	mg/L	NS	NS	NS	5.8	-	17	18	31	30	-	43	43
Chromium	mg/L	0.1	0.1	0.3	<0.0040	-	<0.0040	<0.0040	<0.0040	<0.0040	-	<0.0040	<0.0040
Copper	mg/L	1.3	NS	NS	<0.010	-	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.010
Iron	mg/L	0.3*	NS	NS	9.5	-	2.3	3.1	1.5	1.4	-	<0.050	7.4
Lead	mg/L	0.015	0.015	0.01	<0.0050	-	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050
Manganese	mg/L	0.05*	NS	NS	0.50	-	6.30	0.79	11	11	-	0.098	11
Mercury	mg/L	0.002	0.002	0.02	<0.00020	-	<0.00020	<0.00020	<0.00020	<0.00020	-	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.015	-	<0.015	<0.015	<0.015	<0.015	-	<0.015	<0.015
Silver	mg/L	0.10*	0.100	0.007	<0.0030	-	<0.0030	<0.0030	<0.0030	<0.0030	-	<0.0030	<0.0030
Sodium	mg/L	20**	NS	NS	12	-	6.4	31	19	18	-	12	21
Zinc	mg/L	5*	5	0.9	0.018	-	0.023	<0.010	0.049	0.049	-	0.1	0.041
<b>VOCs (EPA Method 8260 SIM)</b>													
1,4-Dioxane	mg/L	0.3**	3 (4)	50,000	<1.6	-	<1.6	<1.6	<1.6	<1.6	-	<1.6	<1.6
<b>VOCs (EPA Method 8260C)</b>													
1,4-Dichlorobenzene	µg/L	5	5	8,000	<1.0	-	1.1	<1.0	2.2	2.4	-	<1.0	<1.0
Methyl tert butyl ether (MTBE)	µg/L	70**	70	50,000	<1.0	-	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
Chlorobenzene	µg/L	100	100	1,000	<1.0	-	4.2	<1.0	4.9	5.0	-	<1.0	1.5

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**Notes:**

(1) The Comparable Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level

\* SMCL Secondary Maximum Contaminant Level

\*\* ORSG Office of Research Standards Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide to total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< The resulting concentration was below the laboratory detection limit shown.

**BOLD** This resulting concentration was greater than the laboratory method detection limit.

**BOLD** This resulting concentration was greater than the comparable standard.

- = Well was dry

- = Parameters not recorded

- = Monitoring well is destroyed.

**Abbreviations:**

EPA - Environmental Protection Agency

mS/cm - millisiemens per centimeter

mg/L - milligrams per liter

µg/L - micrograms per liter

NS - No Standard

NA - Not Analyzed

VOCs - Volatile Organic Compounds

**Table 3  
Surface Water Sampling Results  
Hamilton, Massachusetts  
September 30, 2013**

Parameter	Units	Massachusetts Surface Water Quality Standards (1)	Method 1 GW-3 Standard	Sample ID		
				SW-1	SW-2	SW-3
<b>Field Parameters</b>						
Temperature	degrees C	NS	NS	Dry	<b>10.79</b>	17.3
pH	unitless	6.5 - 8.3 (2)	NS	Dry	<b>5.43</b>	7.59
Specific Conductivity	mS/cm	NS	NS	Dry	<b>0.150</b>	0.200
Dissolved Oxygen	mg/L	NS	NS	Dry	<b>0.44</b>	3.22
<b>Inorganics</b>						
Alkalinity as CaCO <sub>3</sub>	mg/L	20 (3)	NS	Dry	<b>71</b>	67
Chemical Oxygen Demand	mg/L	NS	NS	Dry	<b>41</b>	<10
Chloride	mg/L	230	NS	Dry	<b>16</b>	9.8
Physiologically Available Cyanide	mg/L	0.0052 (4)	0.03	Dry	<0.010	<0.010
Nitrate as Nitrogen	mg/L	NS	NS	Dry	<0.050	<0.050
Sulfate	mg/L	NS	NS	Dry	<b>12</b>	43
Total Dissolved Solids	mg/L	NS	NS	Dry	<b>150</b>	170
<b>Dissolved Metals</b>						
Arsenic	mg/L	0.15	0.9	Dry	<b>0.0031</b>	<b>0.0012</b>
Barium	mg/L	0.004 (5)	50	Dry	<b>0.031</b>	<b>0.014</b>
Cadmium	mg/L	0.00025	0.004	Dry	<0.00050	<0.00050
Calcium	mg/L	116 (5)	NS	Dry	<b>20</b>	31
Chromium	mg/L	0.011 (6)	0.3	Dry	<0.0015	<0.0015
Copper	mg/L	0.009	NS	Dry	<0.0010	<0.0010
Iron	mg/L	1.0	NS	Dry	<b>6.3</b>	<0.050
Lead	mg/L	0.0025	0.01	Dry	<0.0010	<0.0010
Manganese	mg/L	0.12 (5)	NS	Dry	<b>1.6</b>	<b>0.046</b>
Mercury	mg/L	0.00077	0.02	Dry	<0.00020	<0.00020
Selenium	mg/L	0.00461	0.1	Dry	<0.00050	<0.0010
Silver	mg/L	0.00036 (5)	0.007	Dry	<0.00050	<0.00050
Sodium	mg/L	680 (5)	NS	Dry	<b>11</b>	<b>6.8</b>
Zinc	mg/L	0.12	0.9	Dry	<0.010	<0.010
<b>VOCs (EPA Method 8260 SIM)</b>						
1,4-Dioxane	µg/L	NS	50,000	Dry	<1.6	<1.6
<b>VOCs (EPA Method 8260C)</b>						
Toluene	µg/L	9.8 (5)	40,000	Dry	<1.0	<1.0

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**Notes**

- (1) Criteria are taken from the "National Recommended Water Quality Criteria," (USEPA Office of Water, Office of Science and Technology, 2009) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.
- (2) The pH standard listed in 314 CMR 4.05(3)(b)(3) is the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the background range. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters.
- (3) The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July, 1976). The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% of the natural level.
- (4) No standard exists for physiologically available cyanide. The cyanide standard listed is the criterion continuous concentration for dissolved cyanide.
- (5) The listed standard is published in the "Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision," (ES/ER/TM-98/R2).
- (6) No standard exists for unspiciated chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

**BOLD** The resulting concentration was greater than the laboratory method detection limit

**BOLD** The resulting concentration is greater than the MA Surface Water Standards

**Abbreviations**

- < not detected above method detection limit, shown
- mS/cm milliSiemens per centimeter
- mg/L milligrams per liter
- µg/L micrograms per liter
- mS/cm microSiemens per centimeter
- NA Not Analyzed
- NS No Standard
- ND Not Detected
- VOCs Volatile Organic Compounds
- Well was dry

**Table 4**  
**Sediment Sampling Results**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**September 30, 2013**

Parameter	Units	Concentration (1)	Sample ID	
			SED-1	SED-3
<b>Total Metals</b>				
Arsenic	mg/kg	9.79	<2.1	<b>6.1</b>
Barium	mg/kg	NS	<b>8.9</b>	<b>32</b>
Cadmium	mg/kg	0.99	<b>0.31</b>	<0.23
Calcium	mg/kg	NS	<b>1,300</b>	<b>1,700</b>
Chromium	mg/kg	43.4	<b>13</b>	<b>14</b>
Copper	mg/kg	31.6	<b>11</b>	<b>8.4</b>
Iron	mg/kg	NS	<b>8,500</b>	<b>11,000</b>
Lead	mg/kg	35.8	<b>10.0</b>	<b>7.2</b>
Manganese	mg/kg	NS	<b>96</b>	<b>320</b>
Mercury	mg/kg	0.18	<0.023	<0.025
Selenium	mg/kg	NS	<4.3	<4.7
Silver	mg/kg	NS	<0.53	<0.59
Sodium	mg/kg	NS	<150	<160
Zinc	mg/kg	121	<b>46</b>	<b>41</b>
<b>VOCs (EPA Method 8260C)</b>				
Acetone	µg/kg	NS	<25	<21

QC by LEM 11/13/13

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**Notes:**

(1) Threshold Effects Concentrations (TECs) : DEP adopted the consensus-based TECs for use in screening freshwater sediment for risk to benthic organisms. The threshold effect concentrations are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms are not expected.

mg/kg milligrams per kilogram

µg/kg micrograms per kilogram

NA Not Analyzed

NS No Standard

**BOLD** The concentration exceeded the laboratory method detection limits.

**BOLD** The concentration exceeded the comparable standard.

**Table 5**  
**Soil Gas Well Monitoring Results**  
**November 1, 2013**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**

Soil Gas Well Number	Initial Condition					Steady State Condition				
	Methane		Oxygen	Hydrogen Sulfide	NMVOCs	Methane		Oxygen	Hydrogen Sulfide	NMVOCs
	(%)	(%LEL)	(%)	(ppm)	(ppm)	(%)	(%LEL)	(%)	(ppm)	(ppm)
SG-1	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-2	<0.1	0%	<b>20.5</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-3	<0.1	0%	<b>20.6</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-4	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-5	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-6	<0.1	0%	<b>20.7</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-7	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-8	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-9	<0.1	0%	<b>20.7</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-10	<0.1	0%	<b>20.5</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-11	<0.1	0%	<b>20.6</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-12	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-13	<0.1	0%	<b>20.7</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-14	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-15	*	*	*	*	*	*	*	*	*	*
SG-16	<0.1	0%	<b>20.6</b>	<1	<0.1	<0.1	0%	<b>20.6</b>	<1	<0.1
SG-17	<0.1	0%	<b>20.7</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-18	<0.1	0%	<b>20.6</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-19	<0.1	0%	<b>20.6</b>	<1	<0.1	<0.1	0%	<b>20.6</b>	<1	<0.1
SG-20	**	**	**	**	**	**	**	**	**	**
SG-21	<0.1	0%	<b>20.5</b>	<1	<0.1	<0.1	0%	<b>20.7</b>	<1	<0.1
SG-22	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
SG-23	**	**	**	**	**	**	**	**	**	**
SG-24	<0.1	0%	<b>20.5</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1
Ambient	<0.1	0%	<b>20.8</b>	<1	<0.1	<0.1	0%	<b>20.8</b>	<1	<0.1

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QC by LEM 11/13/13

**Notes:**

- BOLD** = Parameter detected above instrument detection limit.
- BOLD** = Properly boundary well greater than 25% LEL, requires 24-hour DEP notification.
- \* Well could not be located. Could not collect parameters.
- \*\* Well destroyed. Could not collect parameters.

**Abbreviations:**

- < = Parameter not detected above instrument detection limit, noted.
- % LEL = percent lower explosive limit
- % = percent by volume
- ppm = parts per million
- NMVOCs = non-methane volatile organic compounds

**Onsite Weather Conditions:** Windy, 60 degrees F

0730: 67.7 degrees F; relative humidity = 57.4%; barometric pressure = 29.55" Hg.  
 0830: 70.1 degrees F; relative humidity = 59.5%; barometric pressure = 29.54" Hg.  
 0930: 70.2 degrees F; relative humidity = 59.8%; barometric pressure = 29.53" Hg.  
 1030: 70.5 degrees F; relative humidity = 63.4%; barometric pressure = 29.52" Hg.  
 1130: 70.5 degrees F; relative humidity = 67.9%; barometric pressure = 29.50" Hg.  
 1230: 71.0 degrees F; relative humidity = 68.4%; barometric pressure = 29.49" Hg.

**Ground conditions:** Damp and Dry

## **APPENDIX A**

### Historic Data Tables



**Table 1a**  
**Groundwater Sampling Results, Monitoring Well MW-2**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	***	Dry	Dry	-	Dry
Specific Conductivity	umhos/cm	NS	NS	NS	***	Dry	Dry	-	Dry
pH	unitless	6.5-8.5*	NS	NS	***	Dry	Dry	-	Dry
Dissolved Oxygen	mg/L	NS	NS	NS	***	Dry	Dry	-	Dry
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	***	Dry	Dry	9.5	Dry
Chemical Oxygen Demand	mg/L	NS	NS	NS	***	Dry	Dry	24	Dry
Chloride	mg/L	250 *	NS	NS	***	Dry	Dry	13	Dry
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	Dry	Dry	<0.010	Dry
Nitrate as Nitrogen	mg/L	10	NS	NS	***	Dry	Dry	0.14	Dry
Sulfate	mg/L	250 *	NS	NS	***	Dry	Dry	21	Dry
Total Dissolved Solids	mg/L	500 *	NS	NS	***	Dry	Dry	79	Dry
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	***	Dry	Dry	<0.010	Dry
Barium	mg/L	2	2	50	***	Dry	Dry	0.057	Dry
Cadmium	mg/L	0.005	0.005	0.004	***	Dry	Dry	<0.0010	Dry
Calcium	mg/L	NS	NS	NS	***	Dry	Dry	11	Dry
Chromium	mg/L	0.1	0.1	0.3	***	Dry	Dry	<0.0040	Dry
Copper	mg/L	1.3	NS	NS	***	Dry	Dry	0.017	Dry
Iron	mg/L	0.3 *	NS	NS	***	Dry	Dry	0.09	Dry
Lead	mg/L	0.015	0.015	0.01	***	Dry	Dry	<0.0050	Dry
Manganese	mg/L	0.05 *	NS	NS	***	Dry	Dry	0.34	Dry
Mercury	mg/L	0.002	0.002	0.02	***	Dry	Dry	<0.00020	Dry
Selenium	mg/L	0.05	0.05	0.1	***	Dry	Dry	<0.015	Dry
Silver	mg/L	0.1 *	0.1	0.007	***	Dry	Dry	<0.0030	Dry
Sodium	mg/L	20 **	NS	NS	***	Dry	Dry	6.0	Dry
Zinc	mg/L	5 *	5	0.9	***	Dry	Dry	0.095	Dry
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	ug/L	0.3**	3 (4)	50.000	<3.0	Dry	Dry	<1.6	Dry
<b>VOCs (EPA Method 8260B)</b>									
1,4-Dichlorobenzene	ug/L	5	5	8,000	<1.0	Dry	Dry	<1.0	Dry
Chlorobenzene	ug/L	100	100	1,000	<1.0	Dry	Dry	<1.0	Dry

\*Hamilton, MA\Hamilton LF Historic Data\Hamilton LF Historic GW Inu 0913.xls\MW-6S

**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level concentration

\*SMCL Secondary Maximum Contaminant Level concentration

\*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

\*\*\* Field parameters, dissolved metals, and inorganics (except physiologically available cyanide) were not obtained due to insufficient well recharge.

- Insufficient recharge to measure field parameters.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

ug/L micrograms per liter (parts per billion)

mg/L milligrams per liter (parts per million)

mS/cm millisiemens per centimeter

VOCs Volatile Organic Compounds

NS No Standard

ND Not Detected

NA Not Analyzed

B Compound detected in method blank

J Estimated concentration

Table 1a  
**Groundwater Sampling Results, Monitoring Well MW-3**  
 Hamilton Landfill  
 Hamilton, Massachusetts  
 November 2011 through September 2013

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	11.12	7.41	11.09	4.72	10.93
Specific Conductivity	umhos/cm	NS	NS	NS	0.061	0.072	0.133	0.039	0.123
pH	unitless	6.5-8.5*	NS	NS	1.95	6.05	5.56	5.26	5.29
Dissolved Oxygen	mg/L	NS	NS	NS	9.85	4.75	2.69	6.40	3.75
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	9.6	20	64	<5.0	67
Chemical Oxygen Demand	mg/L	NS	NS	NS	<20	<20	<20	<10	<10
Chloride	mg/L	250 *	NS	NS	8.4	7.3	7.1	10	8.6
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	mg/L	10	NS	NS	<0.050	<0.050	<0.050	0.11	0.083
Sulfate	mg/L	250 *	NS	NS	8.4	10	15	9.3	15
Total Dissolved Solids	mg/L	500 *	NS	NS	47	<10	100	33	120
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	<0.010	<0.010	<0.010	<0.010	<0.010
Barium	mg/L	2	2	50	0.042	0.035	0.048	0.032	0.076
Cadmium	mg/L	0.005	0.005	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Calcium	mg/L	NS	NS	NS	6.3	9.0	17	3.6	17
Chromium	mg/L	0.1	0.1	0.3	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040
Copper	mg/L	1.3	NS	NS	<0.010	<0.010	<0.010	<0.010	<0.010
Iron	mg/L	0.3 *	NS	NS	<0.10	<0.10	0.38	<0.050	2.3
Lead	mg/L	0.015	0.015	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	mg/L	0.05 *	NS	NS	0.41	1.20	3.1	0.064	6.30
Mercury	mg/L	0.002	0.002	0.02	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.010	<0.010	<0.010	<0.015	<0.015
Silver	mg/L	0.1 *	0.1	0.007	<0.0050	<0.0050	<0.0050	<0.0030	<0.0030
Sodium	mg/L	20 **	NS	NS	6.2	6.4	6.9	5.9	6.0
Zinc	mg/L	5 *	5	0.9	<0.050	<0.050	<0.050	<0.010	0.023
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	ug/L	0.3**	3 (4)	50,000	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8260B)</b>									
1,4-Dichlorobenzene	ug/L	5	5	8,000	<1.0	<1.0	<1.0	<1.0	1.1
Chlorobenzene	ug/L	100	100	1,000	<1.0	<1.0	3.4	<1.0	4.2

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**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level concentration

\*SMCL Secondary Maximum Contaminant Level concentration

\*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0090 (June 26, 2003)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances

shown are for the existing standards at the time of sampling).

**Abbreviations:**

- ug/L micrograms per liter (parts per billion)
- mg/L milligrams per liter (parts per million)
- mS/cm millisiemens per centimeter
- VOCs Volatile Organic Compounds
- NS No Standard
- ND Not Detected
- NA Not Analyzed
- B Compound detected in method blank
- J Estimated concentration

**Table 1a**  
**Groundwater Sampling Results, Monitoring Well MW-4S**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	11.75	8.46	12.89	6.29	11.94
Specific Conductivity	umhos/cm	NS	NS	NS	0.132	0.133	0.182	0.122	0.194
pH	unitless	6.5-8.5*	NS	NS	2.05	5.84	5.67	5.38	5.68
Dissolved Oxygen	mg/L	NS	NS	NS	2.78	11.64	3.80	5.89	1.88
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	15	12	34	<5.0	51
Chemical Oxygen Demand	mg/L	NS	NS	NS	<20	<20	<20	<10	18
Chloride	mg/L	250 *	NS	NS	30	33	47	48	53
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate as Nitrogen	mg/L	10	NS	NS	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	250 *	NS	NS	6.9	9.7	8.7	14	6.7
Total Dissolved Solids	mg/L	500 *	NS	NS	85	78	130	83	190
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	<0.010	<0.010	<0.010	<0.010	<0.010
Barium	mg/L	2	2	50	0.068	0.071	0.051	0.099	0.072
Cadmium	mg/L	0.005	0.005	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Calcium	mg/L	NS	NS	NS	11	17	14	6.1	18
Chromium	mg/L	0.1	0.1	0.3	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040
Copper	mg/L	1.3	NS	NS	<0.010	<0.010	<0.010	<0.010	<0.010
Iron	mg/L	0.3 *	NS	NS	1.1	0.30	1.4	<0.050	3.1
Lead	mg/L	0.015	0.015	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	mg/L	0.05 *	NS	NS	0.19	0.37	0.61	0.24	0.79
Mercury	mg/L	0.002	0.002	0.02	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.010	<0.010	<0.010	<0.015	<0.015
Silver	mg/L	0.1 *	0.1	0.007	<0.0050	<0.0050	<0.0050	<0.0030	<0.0030
Sodium	mg/L	20 **	NS	NS	18	21	28	27	31
Zinc	mg/L	5 *	5	0.9	<0.050	<0.050	<0.050	<0.010	<0.010
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	µg/L	0.3**	3 (4)	50,000	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8260B)</b>									
1,4-Dichlorobenzene	µg/L	5	5	8,000	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	µg/L	100	100	1,000	<1.0	<1.0	<1.0	<1.0	<1.0

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**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level concentration

\*SMCL Secondary Maximum Contaminant Level concentration

\*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances

shown are for the existing standards at the time of sampling).

**Abbreviations:**

- µg/L micrograms per liter (parts per billion)
- mg/L milligrams per liter (parts per million)
- mS/cm milliSiemens per centimeter
- VOCs Volatile Organic Compounds
- NS No Standard
- ND Not Detected
- NA Not Analyzed
- B Compound detected in method blank
- J Estimated concentration



**Table 1a**  
**Groundwater Sampling Results, Monitoring Well MW-5**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/13/2013
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	13.98	9.38	*	*	*
Specific Conductivity	umhos/cm	NS	NS	NS	0.606	0.518	*	*	*
pH	unitless	6.5-8.5*	NS	NS	4.51	6.74	*	*	*
Dissolved Oxygen	mg/L	NS	NS	NS	5.41	3.03	*	*	*
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	300	290	*	*	*
Chemical Oxygen Demand	mg/L	NS	NS	NS	30	39	*	*	*
Chloride	mg/L	250 *	NS	NS	54	45	*	*	*
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	<0.010	*	*	*
Nitrate as Nitrogen	mg/L	10	NS	NS	<0.050	1.70	*	*	*
Sulfate	mg/L	250 *	NS	NS	<2.0	<2.0	*	*	*
Total Dissolved Solids	mg/L	500 *	NS	NS	370	310	*	*	*
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	<0.010	<0.010	*	*	*
Barium	mg/L	2	2	50	0.76	0.80	*	*	*
Cadmium	mg/L	0.005	0.005	0.004	<0.0010	<0.0010	*	*	*
Calcium	mg/L	NS	NS	NS	100	100	*	*	*
Chromium	mg/L	0.1	0.1	0.3	<0.0050	<0.0050	*	*	*
Copper	mg/L	1.3	NS	NS	<0.010	<0.010	*	*	*
Iron	mg/L	0.3 *	NS	NS	10	5.8	*	*	*
Lead	mg/L	0.015	0.015	0.01	<0.0050	<0.0050	*	*	*
Manganese	mg/L	0.05 *	NS	NS	5.3	6.6	*	*	*
Mercury	mg/L	0.002	0.002	0.02	<0.00020	<0.00020	*	*	*
Selenium	mg/L	0.05	0.05	0.1	<0.0050	<0.0050	*	*	*
Silver	mg/L	0.1 *	0.1	0.007	<0.0050	<0.0050	*	*	*
Sodium	mg/L	20 **	NS	NS	4.7	28	*	*	*
Zinc	mg/L	5 *	5	0.9	<0.050	<0.050	*	*	*
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	µg/L	0.3**	3 (4)	50,000	<3.0	<3.0	*	*	*
<b>VOCs (EPA Method 8260B)</b>									
1,4-Dichlorobenzene	µg/L	5	5	8,000	<1.0	<1.0	*	*	*
Chlorobenzene	µg/L	100	100	1,000	<1.0	<1.0	*	*	*

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**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

- MMCL Massachusetts Maximum Contaminant Level concentration
- \*SMCL Secondary Maximum Contaminant Level concentration
- \*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

- µg/L micrograms per liter (parts per billion)
- mg/L milligrams per liter (parts per million)
- mS/cm milliSiemens per centimeter
- VOCs Volatile Organic Compounds
- NS No Standard
- ND Not Detected
- NA Not Analyzed
- B Compound detected in method blank
- J Estimated concentration

**Table 1a**  
**Groundwater Sampling Results, Monitoring Well MW-6S**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	12.99	8.02	11.15	3.77	9.80
Specific Conductivity	umhos/cm	NS	NS	NS	0.328	0.265	0.233	0.173	0.229
pH	unitless	6.5-8.5*	NS	NS	3.52	6.47	7.25	6.01	4.48
Dissolved Oxygen	mg/L	NS	NS	NS	9.65	7.13	4.46	7.33	5.62
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	86	70	45	58	50
Chemical Oxygen Demand	mg/L	NS	NS	NS	<20	30	<20	<10	12
Chloride	mg/L	250 *	NS	NS	32	18	33	19	35
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	<0.010	<0.010	<0.010	0.014
Nitrate as Nitrogen	mg/L	10	NS	NS	7.2	5.0	0.17	5.6	0.72
Sulfate	mg/L	250 *	NS	NS	56	61	67	39	62
Total Dissolved Solids	mg/L	500 *	NS	NS	280	200	200	170	250
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	<0.010	<0.010	<0.010	<0.010	<0.010
Barium	mg/L	2	2	50	0.061	0.040	0.033	0.036	0.037
Cadmium	mg/L	0.005	0.005	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Calcium	mg/L	NS	NS	NS	71	61	34	46	43
Chromium	mg/L	0.1	0.1	0.3	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040
Copper	mg/L	1.3	NS	NS	<0.010	<0.010	<0.010	<0.010	<0.010
Iron	mg/L	0.3 *	NS	NS	<0.10	<0.10	<0.10	<0.050	<0.050
Lead	mg/L	0.015	0.015	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	mg/L	0.05 *	NS	NS	<0.010	<0.010	0.15	0.0036	0.098
Mercury	mg/L	0.002	0.002	0.02	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.010	<0.010	<0.010	<0.015	<0.015
Silver	mg/L	0.1 *	0.1	0.007	<0.0050	<0.0050	<0.0050	<0.0030	<0.0030
Sodium	mg/L	20 **	NS	NS	16	10	16	7.1	12
Zinc	mg/L	5 *	5	0.9	0.27	0.13	0.097	0.260	0.10
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	µg/L	0.3**	3 (4)	50,000	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8260B)</b>									
1,4-Dichlorobenzene	µg/L	5	5	8,000	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	µg/L	100	100	1,000	<1.0	<1.0	<1.0	<1.0	<1.0

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**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level concentration

\*SMCL Secondary Maximum Contaminant Level concentration

\*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40 0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances

shown are for the existing standards at the time of sampling).

**Abbreviations:**

µg/L micrograms per liter (parts per billion)

mg/L milligrams per liter (parts per million)

mS/cm milliSiemens per centimeter

VOCs Volatile Organic Compounds

NS No Standard

ND Not Detected

NA Not Analyzed

B Compound detected in method blank

J Estimated concentration

**Table 1a**  
**Groundwater Sampling Results, Monitoring Well MW-6D**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Comparable Standard (1)	Method 1 GW-1 (2)	Method 1 GW-3 (2)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>									
Temperature	degrees C	NS	NS	NS	9.61	9.69	10.20	7.51	9.23
Specific Conductivity	umhos/cm	NS	NS	NS	0.395	0.360	0.291	0.372	0.312
pH	unitless	6.5-8.5*	NS	NS	3.19	6.43	6.17	6.35	4.73
Dissolved Oxygen	mg/L	NS	NS	NS	3.24	3.35	3.86	4.94	5.37
<b>Inorganics</b>									
Alkalinity as CaCO <sub>3</sub>	mg/L	NS	NS	NS	150	140	100	210	140
Chemical Oxygen Demand	mg/L	NS	NS	NS	23	26	<20	<10	<10
Chloride	mg/L	250 *	NS	NS	17	36	45	20	35
Physiologically Available Cyanide (PAC)	mg/L	0.2 (3)	0.2	0.03	<0.010	<0.010	<0.010	<0.010	0.092
Nitrate as Nitrogen	mg/L	10	NS	NS	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	250 *	NS	NS	69	55	42	83	61
Total Dissolved Solids	mg/L	500 *	NS	NS	320	290	250	330	320
<b>Dissolved Metals:</b>									
Arsenic	mg/L	0.01	0.01	0.9	<0.010	<0.010	<0.010	<0.010	<0.010
Barium	mg/L	2	2	50	0.055	0.050	0.045	0.063	0.050
Cadmium	mg/L	0.005	0.005	0.004	0.0015	0.0010	<0.0010	0.0019	0.0013
Calcium	mg/L	NS	NS	NS	63	48	33	63	43
Chromium	mg/L	0.1	0.1	0.3	<0.0050	<0.0050	<0.0050	<0.0040	<0.0040
Copper	mg/L	1.3	NS	NS	<0.010	<0.010	<0.010	<0.010	<0.010
Iron	mg/L	0.3 *	NS	NS	3.9	7.2	11	2.9	7.4
Lead	mg/L	0.015	0.015	0.01	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Manganese	mg/L	0.05 *	NS	NS	15	11	6.7	20	11
Mercury	mg/L	0.002	0.002	0.02	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.05	0.05	0.1	<0.010	<0.010	<0.010	<0.015	<0.015
Silver	mg/L	0.1 *	0.1	0.007	<0.0050	<0.0050	<0.0050	0.0038	<0.0030
Sodium	mg/L	20 **	NS	NS	23	22	21	19	21
Zinc	mg/L	5 *	5	0.9	0.054	<0.050	<0.050	0.062	0.041
<b>VOCs (EPA Method 8260 SIM)</b>									
1,4-Dioxane	µg/L	0.3**	3 (4)	50,000	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8250B)</b>									
1,4-Dichlorobenzene	µg/L	5	5	8,000	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl tert butyl ether (MTBE)	µg/L	70	70	50,000	<1.0	<1.0	1.0	<1.0	<1.0
Chlorobenzene	µg/L	100	100	1,000	3.0	<1.0	<1.0	3.2	1.5

© Hamilton, MA Hamilton LF Station Data (Hamilton LF Station GW thru 0913) MW-6D

**Notes:**

(1) The Standard is from "Drinking Water Standards & Guidelines for Chemicals in Massachusetts Drinking Water," dated Spring 2012.

MMCL Massachusetts Maximum Contaminant Level concentration

SMCL Secondary Maximum Contaminant Level concentration

\*\* ORSG Office of Research and Standard Drinking Water Guideline

(2) Method 1 GW-1 and GW-3 standards taken from the Massachusetts Contingency Plan 310 CMR 40.0000 (June 26, 2009)

(3) Standard is for free cyanide. Massachusetts does not publish a standard for physiologically available cyanide or total cyanide.

(4) 1,4-Dioxane compared to Method 1 GW-1 Standard.

< = The resulting concentration was below the laboratory detection limit, shown.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

- µg/L micrograms per liter (parts per billion)
- mg/L milligrams per liter (parts per million)
- mS/cm milliSiemens per centimeter
- VOCs Volatile Organic Compounds
- NS No Standard
- ND Not Detected
- NA Not Analyzed
- B Compound detected in method blank
- J Estimated concentration

**Table 1b**  
**Surface Water Sampling Results, Surface Water Location SW-1**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Massachusetts Surface Water Quality Standards (1)	Sampling Dates				
			11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>							
Temperature	degrees C	NS	<b>9.68</b>	<b>10.14</b>	DRY	<b>3.14</b>	DRY
pH	unitless	6.5-8.3 (2)	<b>1.54</b>	<b>5.60</b>	DRY	<b>3.86</b>	DRY
Specific Conductivity	umhos/cm	mS/cm	<b>0.119</b>	<b>0.111</b>	DRY	<b>0.072</b>	DRY
Dissolved Oxygen	mg/L	NS	<b>7.27</b>	<b>4.11</b>	DRY	<b>7.58</b>	DRY
<b>Inorganics</b>							
Alkalinity as CaCO <sub>3</sub>	mg/L	20 (3)	<b>3.2</b>	<b>3.7</b>	DRY	<b>&lt;5.0</b>	DRY
Chemical Oxygen Demand	mg/L	NS	<b>38</b>	<b>45</b>	DRY	<b>37</b>	DRY
Chloride	mg/L	230	<b>28</b>	<b>25</b>	DRY	<b>21</b>	DRY
Physiologically Available Cyanide (PAC)	mg/L	0.0052 (4)	<0.010	<0.010	DRY	<0.010	DRY
Nitrate as Nitrogen	mg/L	NS	<0.050	<0.050	DRY	<b>0.27</b>	DRY
Sulfate	mg/L	NS	<b>15</b>	<b>15</b>	DRY	<b>16</b>	DRY
Total Dissolved Solids	mg/L	NS	<b>100</b>	<b>93</b>	DRY	<b>100</b>	DRY
<b>Dissolved Metals:</b>							
Arsenic	mg/L	0.15	<0.0010	<0.0010	DRY	<0.0010	DRY
Barium	mg/L	0.004 (5)	<b>0.022</b>	<b>0.020</b>	DRY	<b>0.013</b>	DRY
Cadmium	mg/L	0.00025	<0.0010	<0.0010	DRY	<0.00050	DRY
Calcium	mg/L	116 (5)	<b>5.2</b>	<b>4.8</b>	DRY	<b>3.60</b>	DRY
Chromium	mg/L	0.011 (6)	<b>0.0038</b>	<b>0.0037</b>	DRY	<0.0015	DRY
Copper	mg/L	0.0090	<0.0010	<0.0010	DRY	<b>0.0012</b>	DRY
Iron	mg/L	1.0	<b>3.7</b>	<b>0.2</b>	DRY	<b>0.22</b>	DRY
Lead	mg/L	0.0025	<0.0010	<0.0010	DRY	<b>0.0014</b>	DRY
Manganese	mg/L	0.12 (5)	<b>0.16</b>	<b>0.083</b>	DRY	<b>0.061</b>	DRY
Mercury	mg/L	0.00077	<0.00020	<0.00020	DRY	<0.00020	DRY
Selenium	mg/L	0.0046	<0.0010	<0.0010	DRY	<0.0010	DRY
Silver	mg/L	0.00036 (5)	<0.0010	<0.0010	DRY	<0.00050	DRY
Sodium	mg/L	680 (5)	<b>20</b>	<b>16</b>	DRY	<b>11</b>	DRY
Zinc	mg/L	0.12	<b>0.023</b>	<b>0.030</b>	DRY	<b>0.021</b>	DRY
<b>VOCs (EPA Method 8260 SIM)</b>							
1,4-Dioxane	µg/L	NS	<3.0	<3.0	DRY	<1.6	DRY
<b>VOCs (EPA Method 8260B)</b>							
Toluene	µg/L	varies	ND	ND	DRY	<1.0	DRY

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**Notes:**

- (1) The standard listed is defined in 314 CMR 4.00. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters. Criteria taken from the National Recommended Water Quality Criteria (USEPA, 2004) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.
- (2) The pH standard listed in 314 CMR 4.05(3)(b)(3.) is the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the background range.
- (3) The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July, 1976). The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% of the natural level.
- (4) No standard exists for physiologically available cyanide. The cyanide standard standard listed is the criterion continuous concentration for dissolved cyanide.
- (5) The listed standard is published in the "Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision," (ES/ER/TM-96/R2).
- (6) No standard exists for unspicuated chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

**BOLD** The resulting concentration was greater than the laboratory detection limit.  
**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

mS/cm	milliSiemens per centimeter
mg/L	milligrams per liter (parts per million)
µg/L	micrograms per liter (parts per billion)
VOCs	Volatile Organic Compounds
EPA	Environmental Protection Agency
NS	No Standard
ND	Not Detected
NA	Not Analyzed

**Table 1b**  
**Surface Water Sampling Results, Surface Water Location SW-2**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Massachusetts Surface Water Quality Standards (1)					
			11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>							
Temperature	degrees C	NS	11.55	9.45	15.44	3.73	10.79
pH	unitless	6.5-8.3 (2)	3.70	6.82	8.12	5.80	5.43
Specific Conductivity	umhos/cm	mS/cm	0.144	0.168	0.249	0.103	0.150
Dissolved Oxygen	mg/L	NS	6.24	6.71	0.17	7.11	0.44
<b>Inorganics</b>							
Alkalinity as CaCO <sub>3</sub>	mg/L	20 (3)	39	51	62	26	71
Chemical Oxygen Demand	mg/L	NS	45	21	34	16	41
Chloride	mg/L	230	17	16	18	18	16
Physiologically Available Cyanide (PAC)	mg/L	0.0052 (4)	<0.010	<0.010	<0.0050	<0.010	<0.010
Nitrate as Nitrogen	mg/L	NS	<0.050	<0.050	<0.050	0.20	<0.050
Sulfate	mg/L	NS	27	25	13	28	12
Total Dissolved Solids	mg/L	NS	140	120	150	130	150
<b>Dissolved Metals:</b>							
Arsenic	mg/L	0.15	0.0034	0.0037	0.0029	0.0026	0.0031
Barium	mg/L	0.004 (5)	0.027	0.027	0.028	0.024	0.031
Cadmium	mg/L	0.00025	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050
Calcium	mg/L	116 (5)	19	20	18	13	20
Chromium	mg/L	0.011 (6)	0.0053	0.0076	0.0026	<0.0015	<0.0015
Copper	mg/L	0.0090	<0.0010	<0.0010	<0.0010	0.0010	<0.0010
Iron	mg/L	1.0	4.8	4.8	3.1	3.6	6.3
Lead	mg/L	0.0025	<0.0010	<0.0010	<0.0010	0.0016	<0.0010
Manganese	mg/L	0.12 (5)	0.62	0.93	1.6	0.57	1.6
Mercury	mg/L	0.00077	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.0046	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	mg/L	0.00036 (5)	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050
Sodium	mg/L	680 (5)	13	13	13	10	11
Zinc	mg/L	0.12	0.010	0.0040	0.0027	0.022	<0.010
<b>VOCs (EPA Method 8260 SIM)</b>							
1,4-Dioxane	µg/L	NS	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8260B)</b>							
Toluene	µg/L	9.8 (5)	ND	ND	1.3	<1.0	<1.0

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**Notes:**

(1) The standard listed is defined in 314 CMR 4.00. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters. Criteria taken from the National Recommended Water Quality Criteria (USEPA, 2004) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.

(2) The pH standard listed in 314 CMR 4.05(3)(b)(3.) is the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the background range.

(3) The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July, 1976). The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% of the natural level.

(4) No standard exists for physiologically available cyanide. The cyanide standard listed is the criterion continuous concentration for dissolved cyanide.

(5) The listed standard is published in the "Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision," (ES/ER/TM-96/R2).

(6) No standard exists for unspeciated chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard

(exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

mS/cm	millisiemens per centimeter
mg/L	milligrams per liter (parts per million)
µg/L	micrograms per liter (parts per billion)
VOCs	Volatile Organic Compounds
EPA	Environmental Protection Agency
NS	No Standard
ND	Not Detected
NA	Not Analyzed

**Table 1b**  
**Surface Water Sampling Results, Surface Water Location SW-3**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Massachusetts Surface Water Quality Standards (1)					
			11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Field Parameters</b>							
Temperature	degrees C	NS	9.04	9.94	16.89	4.83	17.3
pH	unitless	6.5-8.3 (2)	1.58	7.50	7.48	6.88	7.59
Specific Conductivity	umhos/cm	mS/cm	0.188	0.171	0.195	0.168	0.200
Dissolved Oxygen	mg/L	NS	9.21	7.59	4.51	7.99	3.22
<b>Inorganics</b>							
Alkalinity as CaCO <sub>3</sub>	mg/L	20 (3)	37	38	71	35	67
Chemical Oxygen Demand	mg/L	NS	<20	<20	<20	<10	<10
Chloride	mg/L	230	8.0	7.1	9.3	9.9	9.8
Physiologically Available Cyanide (PAC)	mg/L	0.0052 (4)	<0.010	<0.010	<0.0050	<0.010	<0.010
Nitrate as Nitrogen	mg/L	NS	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	NS	72	54	33	87	43
Total Dissolved Solids	mg/L	NS	170	130	140	180	170
<b>Dissolved Metals:</b>							
Arsenic	mg/L	0.15	<0.0010	<0.0010	<0.0010	<0.0010	0.0012
Barium	mg/L	0.004 (5)	0.025	0.018	0.013	0.029	0.014
Cadmium	mg/L	0.00025	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050
Calcium	mg/L	116 (5)	35	28	27	35	31
Chromium	mg/L	0.011 (6)	0.0024	0.0028	0.0029	<0.0015	<0.0015
Copper	mg/L	0.0090	0.0013	<0.0010	<0.0010	0.0019	<0.0010
Iron	mg/L	1.0	<0.10	0.29	<0.10	0.050	<0.050
Lead	mg/L	0.0025	0.0024	0.0038	<0.0010	0.0038	<0.0010
Manganese	mg/L	0.12 (5)	0.15	0.17	0.090	1.1	0.046
Mercury	mg/L	0.00077	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	0.0046	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Silver	mg/L	0.00036 (5)	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050
Sodium	mg/L	680 (5)	7.1	7.1	6.4	6.4	6.8
Zinc	mg/L	0.12	0.012	0.0044	0.0034	0.032	<0.010
<b>VOCs (EPA Method 8260 SIM)</b>							
1,4-Dioxane	ug/L	NS	<3.0	<3.0	<3.0	<1.6	<1.6
<b>VOCs (EPA Method 8260B)</b>							
	ug/L	varies	ND	ND	<1.0	<1.0	<1.0

**Notes:**

(1) The standard listed is defined in 314 CMR 4.00. Surface waters at the site, namely wetlands, are considered Unlisted waters, and are classified as Class B, High Quality Waters. Criteria taken from the National Recommended Water Quality Criteria (USEPA, 2004) unless otherwise specified, are Criteria Continuous (chronic) Concentrations.

(2) The pH standard listed in 314 CMR 4.05(3)(b)(3.) is the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the background range.

(3) The derivation of this value is presented in the Red Book (EPA 440/9-76-023, July, 1976). The CCC of 20 mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% of the natural level.

(4) No standard exists for physiologically available cyanide. The cyanide standard listed is the criterion continuous concentration for dissolved cyanide.

(5) The listed standard is published in the "Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision," (ES/ER/TM-96/R2).

(6) No standard exists for unspiciated chromium. The chromium standard listed is the criterion continuous concentration for hexavalent chromium (Cr+6).

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard

(exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

mS/cm	milliSiemens per centimeter
mg/L	milligrams per liter (parts per million)
ug/L	micrograms per liter (parts per billion)
VOCs	Volatile Organic Compounds
EPA	Environmental Protection Agency
NS	No Standard
ND	Not Detected
NA	Not Analyzed

**Table 1c**  
**Sediment Sampling Results, Sediment Location SED-1**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Threshold effect Concentration (1)					
			11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Total Metals:</b>							
Arsenic	mg/kg	9.79	2.2	1.9	2.3	<2.7	<2.1
Barium	mg/kg	NS	7.0	7.8	8.4	7.9	8.9
Cadmium	mg/kg	0.99	<0.29	<0.33	0.43	<0.27	0.31
Calcium	mg/kg	NS	1,300	600	1,300	1,400	1,300
Chromium	mg/kg	43.4	9.6	6.8	13	8.3	13
Copper	mg/kg	31.6	14	9.9	9.9	12	11
Iron	mg/kg	NS	11000	7400	7,900	9,000	8,500
Lead	mg/kg	35.8	6.4	9.7	7.0	6.3	10.0
Manganese	mg/kg	NS	160	72	110	120	96
Mercury	mg/kg	0.18	<0.11	<0.095	<0.10	<0.022	<0.023
Nickel	mg/kg	22.7	<0.11	<0.095	8.9	NA	NA
Selenium	mg/kg	NS	<0.73	<0.82	<0.75	<5.5	<4.3
Silver	mg/kg	NS	<0.73	<0.82	<0.75	<0.69	<0.53
Sodium	mg/kg	NS	<150	<160	<150	<190	<150
Zinc	mg/kg	121	44	58	60	42	45
<b>VOCs (EPA Method 8260B)</b>							
Acetone	mg/kg	NS	<270	<180	<320	<25	<25
2-Butanone (MEK)	mg/kg	NS	<27	<18	<32	ND	ND
Toluene	mg/kg	NS	<2.7	<1.80	<3.2	ND	ND
4-Isopropyltoluene	mg/kg	NS	<2.7	<1.80	<3.2	ND	ND

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**Notes:**

(1) Threshold Effects Concentrations (TECs) : DEP adopted the consensus-based TECs for use in screening freshwater sediment for risk to benthic organisms. The threshold effect concentrations are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms are not expected.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

µg/l	micrograms per liter (parts per billion)
mg/l	milligrams per liter (parts per million)
mS/cm	milliSiemens per centimeter
VOCs	Volatile Organic Compounds
SVOCs	Semi-Volatile Organic Compounds
NS	No Standard
ND	Not Detected
NA	Not Analyzed

**Table 1c**  
**Sediment Sampling Results, Sediment Location SED-3**  
**Hamilton Landfill**  
**Hamilton, Massachusetts**  
**November 2011 through September 2013**

Parameter	Units	Threshold effect Concentration (1)	11/14/11	4/4/12	10/5/12	3/18/13	9/30/13
<b>Total Metals:</b>							
Arsenic	mg/kg	9.79	<b>13</b>	<b>19</b>	<b>7.1</b>	<b>4.4</b>	<b>6.1</b>
Barium	mg/kg	NS	<b>69</b>	<b>70</b>	<b>31</b>	<b>30</b>	<b>32</b>
Cadmium	mg/kg	0.99	<0.70	<0.69	<0.27	<0.25	<0.23
Calcium	mg/kg	NS	<b>2,300</b>	<b>3,000</b>	<b>2,300</b>	<b>1,600</b>	<b>1,700</b>
Chromium	mg/kg	43.4	<b>15</b>	<b>14</b>	<b>12</b>	<b>12</b>	<b>14</b>
Copper	mg/kg	31.6	<b>16</b>	<b>18</b>	<b>9.9</b>	<b>11</b>	<b>8.4</b>
Iron	mg/kg	NS	<b>20000</b>	<b>21000</b>	<b>14,000</b>	<b>11,000</b>	<b>11,000</b>
Lead	mg/kg	35.8	<b>76</b>	<b>180</b>	<b>5.1</b>	<b>10</b>	<b>7.2</b>
Manganese	mg/kg	NS	<b>660</b>	<b>520</b>	<b>380</b>	<b>210</b>	<b>320</b>
Mercury	mg/kg	0.18	<0.25	<0.22	<0.085	<0.020	<0.025
Nickel	mg/kg	22.7	<0.25	<0.22	<b>10</b>	NA	NA
Selenium	mg/kg	NS	<1.8	<1.7	<0.68	<4.9	<4.7
Silver	mg/kg	NS	<1.8	<1.7	<0.68	<0.62	<0.59
Sodium	mg/kg	NS	<350	<340	<b>170</b>	<170	<160
Zinc	mg/kg	121	<b>58</b>	<b>59</b>	<b>45</b>	<b>42</b>	<b>41</b>
<b>VOCs (EPA Method 8260B)</b>							
Acetone	mg/kg	NS	<b>870</b>	<570	<240	<b>110</b>	<21
2-Butanone (MEK)	mg/kg	NS	<b>160</b>	<b>78</b>	<24	ND	ND
Toluene	mg/kg	NS	<b>50</b>	<b>220</b>	<2.4	ND	ND
4-Isopropyltoluene	mg/kg	NS	<b>15</b>	<5.7	<2.4	ND	ND

O:\Hamilton, MA\Hamilton LF Historic Data\[Hamilton LF Historic SED thru 0313.xls]SED-3

**Notes:**

(1) Threshold Effects Concentrations (TECs) : DEP adopted the consensus-based TECs for use in screening freshwater sediment for risk to benthic organisms. The threshold effect concentrations are intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms are not expected.

**BOLD** The resulting concentration was greater than the laboratory detection limit.

**BOLD** The resulting concentration was greater than the Comparable Standard (exceedances shown are for the existing standards at the time of sampling).

**Abbreviations:**

µg/l	micrograms per liter (parts per billion)
mg/l	milligrams per liter (parts per million)
mS/cm	milliSiemens per centimeter
VOCs	Volatile Organic Compounds
SVOCs	Semi-Volatile Organic Compounds
NS	No Standard
ND	Not Detected
NA	Not Analyzed

**Table 3**  
**Summary of Groundwater Analytical Results**  
**Hamilton Sanitary Landfill**  
**Post-CSA Round 3**

LOCATION	WATER QUALITY				MW-1	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D	MW-2
SAMPLING DATE	STANDARDS GUIDELINES				13-Jun-11							
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L1108474.01	L1108474.02	L1108474.03	L1108474.04	L1108474.05	L1108474.06	L1108474.07	
<b>General Chemistry</b>												
Alkalinity, Total				mg CaCO <sub>3</sub> /L	25	7.8	3	200	340	80	120	
Solids, Total Dissolved			500	mg/l	83	18	36	260	360	260	270	
Cyanide, Physiologically Available	0.2	0.03		mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
Chloride			250	mg/l	16	7.7	15	19	13	20	39	
Nitrogen, Nitrate	10			mg/l	0.12	0.14	< 0.1	< 0.1	0.3	3.4	< 0.1	
Sulfate			250	mg/l	12	< 10	< 10	< 10	< 10	74	48	
Chemical Oxygen Demand				mg/l	33	< 20	< 20	< 20	21	< 20	< 20	
<b>Dissolved Metals by MCP 6000/7000 series</b>												
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	
Barium, Dissolved	2	2		mg/l	0.015	0.032	0.048	0.051	0.743	0.045	0.046	
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	
Calcium, Dissolved				mg/l	6.4	4.1	2	39	89	59	37	
Chromium, Dissolved	0.1	0.1		mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Copper, Dissolved	1.3	10	1	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Iron, Dissolved			0.3	mg/l	9.5	< 0.05	0.18	5.7	2.5	< 0.05	8	
Lead, Dissolved	0.015	0.01		mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Manganese, Dissolved			0.05	mg/l	0.471	0.176	0.034	10.9	7.46	< 0.01	7.99	
Mercury, Dissolved	0.002	0.002		mg/l	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	
Selenium, Dissolved	0.05	0.05		mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Silver, Dissolved		0.007	0.1	mg/l	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	< 0.007	
Sodium, Dissolved	20*			mg/l	13	5.1	8.9	24	17	9.4	21	
Zinc, Dissolved		0.9	5	mg/l	< 0.05	< 0.05	< 0.05	0.062	< 0.05	0.175	< 0.05	
<b>Volatile Organics by MCP 8260B</b> (Results Above Detection Limits Only)												
1,4-Dichlorobenzene	5	5		ug/l	< 1	< 1	< 1	2.4	< 1	< 1	< 1	
Chlorobenzene	100	100		ug/l	< 1	< 1	< 1	5	< 1	< 1	< 1	
Chloroform		50		ug/l	< 1	< 1	3.7	< 1	< 1	< 1	< 1	
Ethyl ether		1000		ug/l	< 2	< 2	< 2	17	11	< 2	3.2	

WELL DRY

**Notes:**

1. MMCL = Massachusetts DEP Maximum Contaminant Level for Drinking Water (Spring 2007).
2. RCGW-1 = Massachusetts Groundwater Category RCGW-1 Standards-310 CMR 40.1600 (MCP). Enforceable in GW-1 areas.
3. SMCL = Massachusetts DEP Secondary Maximum Contaminant Level for Drinking Water (Spring 2007). SMCLs are non-enforceable standards; however, these limits have been developed to protect the aesthetic quality of drinking water (i.e. odor and taste).

**Bolded and shaded values indicate analytical results which meet or exceed Water Quality Standards.**

**Bolded values indicate analytical results which exceed the laboratory detection limit.**

***Bold and italic* detection limits denote detection limits that exceed the water quality standards.**

\* Sodium water quality standard based

**Table 4  
Summary of Surface Water Analytical Results  
Hamilton Sanitary Landfill**

LOCATION	EPA WATER QUALITY CRITERIA (1)			SW-1 17-Mar-11 L1103524-09	SW-2 13-Jun-11 L1108474-08	SW-3 13-Jun-11 L1108474-09	
SAMPLING DATE							
LAB SAMPLE ID	ACUTE (CMC)*	CHRONIC (CCC)**					
			Units				
<b>General Chemistry</b>							
Alkalinity, Total		20	mg CaCO3/L	<b>DRY</b>	50	37	
Solids, Total Dissolved			mg/l		110	130	
Cyanide, Physiologically Available	0.022	0.0052	mg/l		< 0.005	< 0.005	
Chloride	860	230	mg/l		14	7.6	
Nitrogen, Nitrate			mg/l		< 0.1	< 0.1	
Sulfate			mg/l		27	63	
Chemical Oxygen Demand			mg/l		2000	< 20	
<b>Dissolved Metals by MCP 6000/7000 series</b>							
Arsenic, Dissolved	0.34	0.15	mg/l		< 0.005	< 0.005	
Barium, Dissolved			mg/l		0.025	0.02	
Cadmium, Dissolved	0.002	0.00025	mg/l		< 0.0005	< 0.0005	
Calcium, Dissolved			mg/l		16	28	
Chromium, Dissolved	0.57	0.074	mg/l		< 0.01	< 0.01	
Copper, Dissolved	0.013	0.009	mg/l		< 0.01	< 0.01	
Iron, Dissolved		1	mg/l		8.4	0.07	
Lead, Dissolved	0.065	0.0025	mg/l		< 0.0005	0.0008	
Manganese, Dissolved			mg/l	1.04	0.062		
Mercury, Dissolved	0.0014	0.00077	mg/l	< 0.0002	< 0.0002		
Selenium, Dissolved		0.005	mg/l	< 0.01	< 0.01		
Silver, Dissolved	0.0032		mg/l	< 0.0005	< 0.0005		
Sodium, Dissolved			mg/l	9.9	6.4		
Zinc, Dissolved	0.12	0.12	mg/l	0.0117	0.0144		
<b>Volatile Organics by MCP 8260B (Results Above Detection Limits Only)</b>							
TOTAL VOCs			ug/l	ND	ND	ND	

**Notes:**

- In accordance with DEP requirements, surface water quality analytical results are to be compared to the most recent version of the EPA National Recommended Water Quality Criteria.
  - \*- Criteria Maximum Concentration (CMC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect.
  - \*\* - Criterion Continuous Concentration (CCC) is an estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed indefinitely without resulting in an unacceptable effect.
  3. CCC(FW) = Criterion Continuous Concentration in Freshwater (Chronic Ambient Water Quality Criterion)
  4. CCC(SW) = Criterion Continuous Concentration in Saltwater (Chronic Ambient Water Quality Criterion)
  5. CMC(FW)/10 = Criterion Maximum Chronic Concentration in Freshwater (Acute Ambient Water Quality Criterion)
  6. C-LOEC = Lowest Observed Effects Level for Chronic Exposure
  7. A-LOEC/10 = Lowest Observed Effects Level for Acute Exposure divided by 10 to estimate a Chronic LOEC
  8. A-LC50/10 = Lethal Concentration for 50 percent of the population following an acute exposure, divided by 10 to estimate a Chronic
  9. A-EC50/10 = Concentration at which 50 percent of a population would experience effects following a chronic exposure.
  10. The detection limits for total cyanide and dissolved cadmium, copper, lead, silver and zinc were above the MCP or EPA standards.
- ND - No analyte detected above laboratory detection limit.  
**Bolded and shaded** values indicate analytical results which exceed the EPA Water Quality Criteria.  
**Bolded** values indicate analytical results which exceed the laboratory detection limit.  
**Bold and italic** detection limits denote detection limits that exceed the water quality standards.

**Table 5  
Summary of Sediment Analytical Results  
Hamilton Sanitary Landfill**

LOCATION	RECOMMENDED FRESHWATER			SED-1	SED-2	SED-3
	SEDIMENT SCREENING VALUES*			13-Jun-11	13-Jun-11	13-Jun-11
SAMPLING DATE				L1108516-01	L1108516-02	L1108516-03
LAB SAMPLE ID	TEC	PEC	Units			
MCP Total Metals						
Arsenic, Total		33	mg/kg	2.5	<b>120</b>	12
Barium, Total			mg/kg	12	64	74
Cadmium, Total		5	mg/kg	< 0.65	< 2.8	< 1.7
Calcium, Total			mg/kg	720	<b>3800</b>	<b>3900</b>
Chromium, Total		110	mg/kg	5.3	10	20
Copper, Total		150	mg/kg	2.5	17	18
Iron, Total			mg/kg	3400	<b>100000</b>	<b>18000</b>
Lead, Total		130	mg/kg	12	77	47
Manganese, Total			mg/kg	42	520	<b>720</b>
Mercury, Total	<b>0.18</b>		mg/kg	< 0.12	< 0.26	< 0.14
Selenium, Total			mg/kg	< 3.2	< 14	< 8.5
Silver, Total			mg/kg	< 0.65	< 2.8	< 1.7
Sodium, Total			mg/kg	< 130	< 570	< 340
Zinc, Total		460	mg/kg	14	95	80
MCP Volatile Organics by 5035 High (Results Above Detection Limits Only)						
2-Butanone			mg/kg	< 0.012	<b>0.16</b>	<b>0.062</b>
Acetone			mg/kg	< 0.042	<b>0.46</b>	<b>0.16</b>
Toluene			mg/kg	< 0.0017	< 0.0046	<b>0.13</b>

**Notes:**

TEC = Threshold Effect Concentration (i.e. concentrations below which harmful effects are unlikely to be observed)

PEC = Probable Effect Concentration (i.e. concentrations above which adverse effects are expected to occur more often than not)

TEC and PEC sediment screening criteria are from DEP's January 2006 Technical Update entitled: "Revised Sediment Screening Values"

ND - no analyte detected above detection limit.

**Bolded** values indicate analytical results which exceed the laboratory detection limit.

**Bolded and Shaded** values indicate analytical results which exceed the TEC or PEC.



Table 5.2  
Summary of Groundwater Analytical Results  
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	STANDARDS/GUIDELINES MMLCL / RC/GV-1 / SMC/1	UNITS	MW-4S			MW-4D			MW-5		
			06-MAR-07 L0703015-03	05-JUL-07 L0703015-03	25-OCT-07 L0703015-04	06-MAR-07 L0703015-04	05-JUL-07 L0703015-04	25-OCT-07 L0703015-04	06-MAR-07 L0703015-05	05-JUL-07 L0703015-05	25-OCT-07 L0703015-05
pH	6.5-8.5	S.U.	8.7	8.3	8.29	7.06	6.83	7.12	5.36	6.6	6.18
Specific Conductance		ms/cm	0.029	0.053	0.209	0.077	0.52	0.57	0.52	0.64	0.67
Temperature		°C	4.38	9.94	10.89	6.63	7.87	8.3	12.98	12.48	8.76
Dissolved Oxygen		mg/L	8.03	1.69	1.39	4.85	13.95	1.13	0.25	0.25	6.16
Alkalinity, Total		mg/L CaCO <sub>3</sub>	42	2.1	2.0	3.7	109	200	270	280	210
Sulfate, Total Dissolved		mg/L	31	47	318	36	149	250	300	360	370
Chloride, Total	0.2	mg/L	<0.005	<0.005	0.009	<0.005	0.006	<0.005	<0.005	<0.005	<0.005
Chemical Oxygen Demand	10	mg/L	7.9	6.4	42	10	15	34	57	48	67
Dissolved Metals by MCL/600/7000 series		mg/L	<0.05	<0.05	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05
Arsenic, Dissolved	0.01	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Barium, Dissolved	2	mg/L	0.029	0.026	0.03	0.03	0.03	0.03	0.31	0.32	0.13
Cadmium, Dissolved	0.005	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Calcium, Dissolved		mg/L	1.2	1.2	42	3.6	3.6	3.6	89	73	74
Chromium, Dissolved	0.1	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper, Dissolved	0.1	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron, Dissolved	0.3	mg/L	<0.01	0.11	4.5	0.05	0.05	0.05	0.05	0.05	0.05
Lead, Dissolved	0.015	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese, Dissolved	0.05	mg/L	0.029	0.021	0.3	0.25	0.25	0.25	0.25	0.25	0.25
Mercury, Dissolved	0.002	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium, Dissolved	0.05	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Strontium, Dissolved	0.07	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sulfate, Dissolved	200	mg/L	5.1	4.3	44	8	17	33	48	43	43
Zinc, Dissolved	0.9	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Volatile Organics by MCL/600/7000 Results Above Detection Limits Only		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
1,1,1-Trichloroethane	0.1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Benzene	0.005	mg/L	<0.005	<0.005	0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005
Chlorobenzene	0.1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
1,2-Dichloroethane	0.07	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Ethyl ether	1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	0.7	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Isopropylbenzene	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Methyl tert-butyl ether	0.07	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Butylbenzene	1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Propylbenzene	1	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Pentylbenzene	0.14	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Hexane	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Heptane	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Octane	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Nonane	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
n-Decane	10	mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Semi-volatile Organics by MCL/600/7000 Results Above Detection Limits Only		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
SVOCs		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Polychlorinated Biphenyls by MCL/600/7000 Results Above Detection Limits Only		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
PCBs		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Organochlorine Pesticides by MCL/600/7000 Results Above Detection Limits Only		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025
Pesticides		mg/L	<0.025	<0.025	0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025

Notes:  
 1. MCL = Maximum Contaminant Level for Drinking Water (pH 6.5-8.5)  
 2. RC/GV-1 = Resource Conservation and Recovery Act (RCRA) Groundwater Protection Standards (GWPS)  
 3. SMC/1 = Maximum Contaminant Level for Surface Water (MCL) for Surface Water (SMC/1)  
 4. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 5. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 6. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 7. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 8. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 9. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)  
 10. MCL/600/7000 = Maximum Contaminant Level for Groundwater (MCL) for Groundwater (MCL/600/7000)

Hamilton Landfill Comprehensive Site Assessment

Table 5.2

Summary of Groundwater Analytical Results  
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	WATER QUALITY STANDARDS GUIDELINES		MW-45		MW-4D		MW-4C		MW-4B		MW-4A	
	MHCL	RCGW-1 SMCL	06-MAR-07 1.070315-06	05-JUL-07 1.070315-06	23-JAN-08 1.070315-06	25-OCT-07 1.070315-06	06-MAR-07 1.070315-06	05-JUL-07 1.070315-06	25-OCT-07 1.070315-06	23-JAN-08 1.070315-06	06-MAR-07 1.070315-06	05-JUL-07 1.070315-06
pH		6.5-8.5	6.71	5.38	5.61	6.22	6.26	6.23	6.51	6.12	6.26	6.23
Specific Conductance			1.445	0.239	0.531	0.165	0.165	0.165	0.347	0.601	0.165	0.165
Temperature			15.7	9.45	9.78	7.35	6.47	10.19	10.09	8.38	6.47	6.47
Dissolved Oxygen			17.33	1.82	6.45	10.19	0.79	1.32	6.45	1.14	0.79	0.79
Alkalinity, Total			58	44	43	75	79	75	56	94	75	75
Sulfide, Total Dissolved	0.2	0.03	0.0005	<0.0005	0.007	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005
Chloride	10	250	9.8	33	33	57	40	43	46	40	40	40
Nitrogen, Nitrate			31	69	54	60	35	34	35	35	34	35
Sulfate			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Chemical Oxygen Demand			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chemical Metals by MCP 6007000 series												
Arsenic, Dissolved	0.01		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Barium, Dissolved	2		0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Cadmium, Dissolved	0.005	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Calcium, Dissolved			21	24	21	49	25	25	36	20	25	25
Chromium, Dissolved	0.1	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper, Dissolved	1.5	10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron, Dissolved	0.3		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead, Dissolved	0.015	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese, Dissolved	0.05		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mercury, Dissolved	0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium, Dissolved	0.05	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silver, Dissolved	0.07	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sodium, Dissolved	200		12	15	16	35	19	20	20	20	20	20
Zinc, Dissolved	0.9	5	0.09	0.116	0.068	0.103	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Volatiles Organics by MCP 60200 (Results Above Detection Limits Only)												
1,2,4-Trinitrobenzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
1,3,5-Trinitrobenzene	0.06	0.05	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Benzene	0.1	0.1	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Chlorobenzene	0.1	0.1	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Chloroform	0.07	0.07	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
1,2-Dichloroethane	0.7	0.7	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Ethyl ether	0.7	0.7	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Diethyl ether	0.7	0.7	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Isopropyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Methyl tert butyl ether	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
n-Propyl Benzene	10		<0.0025	<0.0								

Table 5.3  
Summary of Surface Water Analytical Results  
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	EPA AMBIENT WATER QUALITY CRITERIA			SW-1		SW-2		SW-3	
	ACUTE (CMC)	CHRONIC (CCC)	Units	05-MAR-07	25-OCT-07	05-MAR-07	25-OCT-07	05-MAR-07	25-OCT-07
				L0703070-03		L0703070-04	L0716044-03	L0703070-05	L0716044-09
pH				5.33		6.2	6.04	8.87	6.73
Specific Conductance				0.145		0.17	0.29	0.114	0.219
Temperature				1.73		3.57	13.81	1.18	15.32
Dissolved Oxygen				3.91		3.96	5.24	9.77	5.73
Alkalinity, Total		20	mg CaCO <sub>3</sub> /l	< 2		18	62	21	
Solids, Total Dissolved			mg/l	120		120	130	82	120
Cyanide, Total	0.022	0.0052	mg/l	< 0.005		< 0.005	0.006	< 0.005	< 0.005
Chloride	860	230	mg/l	24		22	15	6.6	10
Nitrogen, Nitrate			mg/l	0.28		0.17	0.1	0.1	< 0.1
Sulfate			mg/l	11		20	21	18	30
Chemical Oxygen Demand			mg/l	< 20		< 20	23	< 20	< 20
<b>Dissolved Metals by MCP 6000/7000 series</b>									
Arsenic, Dissolved	0.34	0.15	mg/l	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005
Barium, Dissolved			mg/l	0.014		0.053	0.019	0.014	0.017
Cadmium, Dissolved	0.002	0.00025	mg/l	< 0.005		< 0.005	< 0.0032	< 0.0005	< 0.0002
Calcium, Dissolved			mg/l	3.5		16	23	10	26
Chromium, Dissolved	0.57	0.074	mg/l	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Copper, Dissolved	0.013	0.009	mg/l	< 0.01		< 0.01	< 0.01	< 0.01	< 0.01
Iron, Dissolved		1	mg/l	0.64		3.5	0.28	0.36	0.16
Lead, Dissolved	0.065	0.0025	mg/l	0.0011		< 0.0005	< 0.0005	< 0.0005	< 0.0005
Manganese, Dissolved			mg/l	0.135		0.53	0.366	0.462	0.293
Mercury, Dissolved	0.0014	0.00077	mg/l	< 0.0002		< 0.0002	< 0.0002	< 0.0002	< 0.0002
Selenium, Dissolved		0.005	mg/l	< 0.005		< 0.005	< 0.01	< 0.005	< 0.01
Silver, Dissolved	0.0032		mg/l	< 0.0005		< 0.0005	< 0.0005	< 0.0005	< 0.0005
Sodium, Dissolved			mg/l	12		15	10	4.6	7.6
Zinc, Dissolved	0.12	0.12	mg/l	0.0148		0.0137	0.0076	0.0086	< 0.005
<b>Volatile Organics by MCP 8260B (Results Above Detection Limits Only)</b>									
VOCs			mg/l	ND		ND	ND	ND	ND
<b>Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)</b>									
SVOCs			mg/l	ND		ND	ND	ND	ND
<b>Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)</b>									
PCBs			mg/l	ND		ND	ND	ND	ND
<b>Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)</b>									
Pesticides			mg/l	ND		ND	ND	ND	ND

**Notes:**

CCC = Criterion Continuous Concentration in Freshwater is estimate of highest concentration an aquatic community can be exposed to indefinitely without resulting in an unacceptable effect (Chronic Ambient Water Quality Criterion).

CMC = Criterion Maximum Concentration in Freshwater is estimate of highest concentration an aquatic community can be exposed to briefly without resulting in an unacceptable effect (Acute Ambient Water Quality Criterion).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which exceed the EPA Water Quality Criteria.

Bolded values indicate analytical results which exceed the laboratory detection limit.

Italic denotes detection limits that exceed the water quality standards.

**Table 5.4  
Summary of Sediment Analytical Results  
Hamilton Landfill Comprehensive Site Assessment**

PARAMETER	RECOMMENDED FRESHWATER SEDIMENT SCREENING VALUES*			SED-1		SED-2		SED-3	
	TEC	PEC	Units	5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07
				0703022-01	L0716044-10	0703022-02	L0716044-11	0703022-03	L0716044-12
<b>Metals</b>									
Arsenic	9.79	33	mg/Kg	0.97	1.6	40	22	6.2	3.7
Barium			mg/Kg	8.6	7.3	23	33	34	29
Cadmium	0.99	5	mg/Kg	0.12	<0.46	0.26	<0.76	0.10	<0.53
Calcium			mg/Kg	920	600	1300	2100	1700	1600
Chromium	43.4	110	mg/Kg	13	9.1	10	11	12	15
Copper	31.6	150	mg/Kg	8.8	11	10	14	16	7.1
Iron			mg/Kg	8100	6900	24000	26000	17000	10000
Lead	35.8	130	mg/Kg	6.0	6.1	33	43	8.6	18
Manganese			mg/Kg	190	120	210	310	310	400
Mercury	0.18		mg/Kg	0.014	<0.085	0.025	<0.16	0.0088	<0.11
Selenium			mg/Kg	< 0.44	<2.3	< 0.52	<3.8	< 0.41	<2.6
Silver			mg/Kg	< 0.043	<0.46	< 0.052	<0.76	< 0.039	<0.53
Sodium			mg/Kg	31	450	88	820	60	560
Zinc	121	460	mg/Kg	36	41	54	100	54	40
<b>Pesticides by 8081 (Results Above Detection Limits Only)</b>									
4,4'-DDD	4.9		µg/Kg	< 0.13	<19.2	0.25	<32	< 0.12	<4.44
4,4'-DDE	3.2		µg/Kg	< 0.13	<19.2	0.53	<32	< 0.12	<4.44
4,4'-DDT	4.2		µg/Kg	< 0.13	<19.2	0.95	<32	< 0.12	<4.44
<b>Polychlorinated Biphenyls by 8082 (Results Above Detection Limits Only)</b>									
PCBs	60		µg/Kg	ND	ND	ND	ND	ND	ND
<b>Volatile Organics by 8260 (Results Above Detection Limits Only)</b>									
Acetone			µg/Kg	< 510	<1200	1200	<2800	830	<1300
Methylene chloride			µg/Kg	580	<1200	1300	<2800	< 720	<1300
<b>Semi-Volatile Organics by 8270 (Results Above Detection Limits Only)</b>									
SVOCs	compound specific		µg/Kg	ND	ND	ND	ND	ND	ND

**Notes:**

Italicized TECs are values from DEP's May 2002 Technical Update entitled *Freshwater Sediment Screening Benchmarks for Use Under the MCP*. All other values are from DEP's January 2006

Technical Update entitled *Revised Sediment Screening Values*. The May 2002 values are provided to contrast the TEC metals standards with the presently recommended PEC metals standards.

TEC = Threshold Effect Concentration (i.e. concentrations below which harmful effects are unlikely to be observed)

PEC = Probable Effect Concentration (i.e. concentrations above which adverse effects are expected to occur more often than not)

ND - no analyte detected above detection limit

Bolded values indicate analytical results which exceed the laboratory detection limit.

Bolded and Shaded values indicate analytical results which exceed the TEC or PEC.

## **APPENDIX B**

Laboratory Analytical Results

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-46836-1

Client Project/Site: Hamilton Landfill

Sampling Event: Hamilton Landfill

Revision: 1

For:

Weston & Sampson Engineers

Attn: Accounts Payable

5 Centennial Drive

Peabody, Massachusetts 01960

Attn: Duane Himes



Authorized for release by:

11/22/2013 11:24:00 AM

Steve Hartmann, Service Center Manager

(413)572-4000

[steve.hartmann@testamericainc.com](mailto:steve.hartmann@testamericainc.com)

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Definitions/Glossary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Qualifiers

#### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

#### GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Case Narrative

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Job ID: 480-46836-1

#### Laboratory: TestAmerica Buffalo

##### Narrative

**Revision 1:** This report was revised on 11/22/13 to remove case narrative text that not applicable to the sample set related to this report. This final report replaces the final report issued on 10/9/13.

##### Receipt

The samples were received on 10/1/2013 at 2:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.7° C, 3.0° C and 3.3° C.

##### Receipt Exceptions

The following samples were preserved via freezing on 10/1/2013 at 0605: SED-1 (480-46836-10) and SED-3 (480-46836-11) . This is within the 48 hour timeframe required by the method.

The Chain of Custody form has several cross-outs that were made without accompanying date and initials of the person making the cross-outs.

##### GC/MS VOA

Method 8260C: Several compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 142451 and 142636. Due to the large number of analytes contained in the CCV, the method allows for 20% analytes to be outside limits under 40%; therefore, the data have been reported.

Method 8260C: The laboratory control sample (LCS) and / or the laboratory control sample duplicate (LCSD) for batches 142636 and 142723 exceeded control limits for the following analyte: 2-Butanone. Unlike the calibration standards, this is due to the coelution with Ethyl Acetate in the spiking solution. This does not indicate a performance issue with the spike recovery, but rather the laboratory's ability to measure the two analytes together in a combined spiking solution. Through the use of spectral analysis, the two compounds can be distinguished from one another if present in a client sample.

No other analytical or quality issues were noted.

##### HPLC

Method 300.0: The following samples were diluted to bring the concentration of target analytes within the calibration range: DUP-1 (480-46836-7), MW-1 (480-46836-1) and MW-3 (480-46836-2). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

##### Metals

Method 6010C: The Serial Dilution (480-46836-1 SD) in batch 480-142205, exhibited results outside the quality control limits for dissolved barium and calcium. However, the Post Digestion Spike was compliant so no corrective action was necessary

No other analytical or quality issues were noted.

##### General Chemistry

Method 353.2: The matrix spike (480-46836-7 MS) recovery for batch 142147 was outside the control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

## Detection Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Client Sample ID: MW-1

Lab Sample ID: 480-46836-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.019		0.0020		mg/L	1		6010C	Dissolved
Calcium	5.8		0.50		mg/L	1		6010C	Dissolved
Iron	9.5		0.050		mg/L	1		6010C	Dissolved
Manganese	0.50		0.0030		mg/L	1		6010C	Dissolved
Sodium	12		1.0		mg/L	1		6010C	Dissolved
Zinc	0.018		0.010		mg/L	1		6010C	Dissolved
Chloride	16		2.5		mg/L	5		300.0	Total/NA
Sulfate	9.9		2.0		mg/L	1		300.0	Total/NA
Alkalinity, Total	29		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	120		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: MW-3

Lab Sample ID: 480-46836-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	1.1		1.0		ug/L	1		8260C	Total/NA
Chlorobenzene	4.2		1.0		ug/L	1		8260C	Total/NA
Barium	0.076		0.0020		mg/L	1		6010C	Dissolved
Calcium	17		0.50		mg/L	1		6010C	Dissolved
Iron	2.3		0.050		mg/L	1		6010C	Dissolved
Manganese	6.3		0.0030		mg/L	1		6010C	Dissolved
Sodium	6.0		1.0		mg/L	1		6010C	Dissolved
Zinc	0.023		0.010		mg/L	1		6010C	Dissolved
Chloride	8.8		1.0		mg/L	2		300.0	Total/NA
Sulfate	15		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.083		0.050		mg/L	1		353.2	Total/NA
Alkalinity, Total	67		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	120		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: MW-4S

Lab Sample ID: 480-46836-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.072		0.0020		mg/L	1		6010C	Dissolved
Calcium	18		0.50		mg/L	1		6010C	Dissolved
Iron	3.1		0.050		mg/L	1		6010C	Dissolved
Manganese	0.79		0.0030		mg/L	1		6010C	Dissolved
Sodium	31		1.0		mg/L	1		6010C	Dissolved
Chloride	53		0.50		mg/L	1		300.0	Total/NA
Sulfate	6.7		2.0		mg/L	1		300.0	Total/NA
Chemical Oxygen Demand	18		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	51		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	190		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: MW-4D

Lab Sample ID: 480-46836-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	2.2		1.0		ug/L	1		8260C	Total/NA
Chlorobenzene	4.9		1.0		ug/L	1		8260C	Total/NA
Barium	0.040		0.0020		mg/L	1		6010C	Dissolved
Cadmium	0.0015		0.0010		mg/L	1		6010C	Dissolved
Calcium	31		0.50		mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Client Sample ID: MW-4D (Continued)

Lab Sample ID: 480-46836-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1.5		0.050		mg/L	1		6010C	Dissolved
Manganese	11		0.0030		mg/L	1		6010C	Dissolved
Sodium	19		1.0		mg/L	1		6010C	Dissolved
Zinc	0.049		0.010		mg/L	1		6010C	Dissolved
Chloride	15		0.50		mg/L	1		300.0	Total/NA
Sulfate	10		2.0		mg/L	1		300.0	Total/NA
Alkalinity, Total	170		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	220		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: MW-6S

Lab Sample ID: 480-46836-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.037		0.0020		mg/L	1		6010C	Dissolved
Calcium	43		0.50		mg/L	1		6010C	Dissolved
Manganese	0.098		0.0030		mg/L	1		6010C	Dissolved
Sodium	12		1.0		mg/L	1		6010C	Dissolved
Zinc	0.10		0.010		mg/L	1		6010C	Dissolved
Chloride	35		0.50		mg/L	1		300.0	Total/NA
Sulfate	62		2.0		mg/L	1		300.0	Total/NA
Nitrate as N	0.72		0.050		mg/L	1		353.2	Total/NA
Chemical Oxygen Demand	12		10		mg/L	1		410.4	Total/NA
Physiologically Available Cyanide	0.014		0.010		mg/L	1		9012	Total/NA
Alkalinity, Total	50		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	250		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: MW-6D

Lab Sample ID: 480-46836-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1.5		1.0		ug/L	1		8260C	Total/NA
Barium	0.050		0.0020		mg/L	1		6010C	Dissolved
Cadmium	0.0013		0.0010		mg/L	1		6010C	Dissolved
Calcium	43		0.50		mg/L	1		6010C	Dissolved
Iron	7.4		0.050		mg/L	1		6010C	Dissolved
Manganese	11		0.0030		mg/L	1		6010C	Dissolved
Sodium	21		1.0		mg/L	1		6010C	Dissolved
Zinc	0.041		0.010		mg/L	1		6010C	Dissolved
Chloride	35		0.50		mg/L	1		300.0	Total/NA
Sulfate	61		2.0		mg/L	1		300.0	Total/NA
Physiologically Available Cyanide	0.092		0.010		mg/L	1		9012	Total/NA
Alkalinity, Total	140		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	320		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: DUP-1

Lab Sample ID: 480-46836-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	2.4		1.0		ug/L	1		8260C	Total/NA
Chlorobenzene	5.0		1.0		ug/L	1		8260C	Total/NA
Barium	0.039		0.0020		mg/L	1		6010C	Dissolved
Cadmium	0.0014		0.0010		mg/L	1		6010C	Dissolved
Calcium	30		0.50		mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Client Sample ID: DUP-1 (Continued)

Lab Sample ID: 480-46836-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	1.4		0.050		mg/L	1		6010C	Dissolved
Manganese	11		0.0030		mg/L	1		6010C	Dissolved
Sodium	18		1.0		mg/L	1		6010C	Dissolved
Zinc	0.049		0.010		mg/L	1		6010C	Dissolved
Chloride	14		2.5		mg/L	5		300.0	Total/NA
Sulfate	8.7		2.0		mg/L	1		300.0	Total/NA
Physiologically Available Cyanide	0.022		0.010		mg/L	1		9012	Total/NA
Alkalinity, Total	170		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	210		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: SW-2

Lab Sample ID: 480-46836-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	20		0.50		mg/L	1		6010C	Dissolved
Iron	6.3		0.050		mg/L	1		6010C	Dissolved
Manganese	1.6		0.0030		mg/L	1		6010C	Dissolved
Sodium	11		1.0		mg/L	1		6010C	Dissolved
Arsenic	3.1		1.0		ug/L	1		6020A	Dissolved
Barium	31		1.0		ug/L	1		6020A	Dissolved
Chloride	16		0.50		mg/L	1		300.0	Total/NA
Sulfate	12		2.0		mg/L	1		300.0	Total/NA
Chemical Oxygen Demand	41		10		mg/L	1		410.4	Total/NA
Alkalinity, Total	71		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	150		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: SW-3

Lab Sample ID: 480-46836-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	31		0.50		mg/L	1		6010C	Dissolved
Manganese	0.046		0.0030		mg/L	1		6010C	Dissolved
Sodium	6.8		1.0		mg/L	1		6010C	Dissolved
Arsenic	1.2		1.0		ug/L	1		6020A	Dissolved
Barium	14		1.0		ug/L	1		6020A	Dissolved
Chloride	9.8		0.50		mg/L	1		300.0	Total/NA
Sulfate	43		2.0		mg/L	1		300.0	Total/NA
Alkalinity, Total	67		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	170		10		mg/L	1		SM 2540C	Total/NA

### Client Sample ID: SED-1

Lab Sample ID: 480-46836-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	8.9		0.53		mg/Kg	1	*	6010C	Total/NA
Cadmium	0.31		0.21		mg/Kg	1	*	6010C	Total/NA
Calcium	1300		53		mg/Kg	1	*	6010C	Total/NA
Chromium	13		0.53		mg/Kg	1	u	6010C	Total/NA
Copper	11		1.1		mg/Kg	1	*	6010C	Total/NA
Iron	8500		11		mg/Kg	1	u	6010C	Total/NA
Lead	10		1.1		mg/Kg	1	*	6010C	Total/NA
Manganese	96		0.21		mg/Kg	1	*	6010C	Total/NA
Zinc	46		2.1		mg/Kg	1	*	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Client Sample ID: SED-3

### Lab Sample ID: 480-46836-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Arsenic	6.1		2.3		mg/Kg	1		*	6010C	Total/NA
Barium	32		0.59		mg/Kg	1		*	6010C	Total/NA
Calcium	1700		59		mg/Kg	1		*	6010C	Total/NA
Chromium	14		0.59		mg/Kg	1		*	6010C	Total/NA
Copper	8.4		1.2		mg/Kg	1		*	6010C	Total/NA
Iron	11000		12		mg/Kg	1		*	6010C	Total/NA
Lead	7.2		1.2		mg/Kg	1		*	6010C	Total/NA
Manganese	320		0.23		mg/Kg	1		*	6010C	Total/NA
Zinc	41		2.3		mg/Kg	1		*	6010C	Total/NA

### Client Sample ID: TRIP BLANK

### Lab Sample ID: 480-46836-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Acetone	13		10		ug/L	1			8260C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-1**

**Lab Sample ID: 480-46836-1**

Date Collected: 09/30/13 11:35

Matrix: Water

Date Received: 10/01/13 02:00

**Method: 8260C SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 10:51	1
<b>Surrogate</b>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
TBA-d9 (Surr)	88		50 - 150					10/02/13 10:51	1
Dibromofluoromethane (Surr)	101		50 - 150					10/02/13 10:51	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 16:16	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 16:16	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 16:16	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 16:16	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 16:16	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 16:16	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 16:16	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 16:16	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 16:16	1
2-Hexanone	ND		5.0		ug/L			10/03/13 16:16	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 16:16	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 16:16	1
Acetone	ND		10		ug/L			10/03/13 16:16	1
Benzene	ND		1.0		ug/L			10/03/13 16:16	1
Bromobenzene	ND		1.0		ug/L			10/03/13 16:16	1
Bromoform	ND		1.0		ug/L			10/03/13 16:16	1
Bromomethane	ND		1.0		ug/L			10/03/13 16:16	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 16:16	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 16:16	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 16:16	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 16:16	1
Chloroethane	ND		1.0		ug/L			10/03/13 16:16	1
Chloroform	ND		1.0		ug/L			10/03/13 16:16	1
Chloromethane	ND		1.0		ug/L			10/03/13 16:16	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 16:16	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 16:16	1
Dibromomethane	ND		1.0		ug/L			10/03/13 16:16	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 16:16	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 16:16	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-1**

**Lab Sample ID: 480-46836-1**

**Date Collected: 09/30/13 11:35**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 16:16	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 16:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 16:16	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 16:16	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 16:16	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 16:16	1
Naphthalene	ND		1.0		ug/L			10/03/13 16:16	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
o-Xylene	ND		1.0		ug/L			10/03/13 16:16	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
Styrene	ND		1.0		ug/L			10/03/13 16:16	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 16:16	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 16:16	1
Toluene	ND		1.0		ug/L			10/03/13 16:16	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 16:16	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 16:16	1
Trichloroethene	ND		1.0		ug/L			10/03/13 16:16	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 16:16	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 16:16	1

**Tentatively Identified Compound**

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>tert-Butyldimethylsilanol</i>	2.9	T J N	ug/L		3.59	18173-64-3		10/03/13 16:16	1

**Surrogate**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>1,2-Dichloroethane-d4 (Surr)</i>	96		66 - 137		10/03/13 16:16	1
<i>Toluene-d8 (Surr)</i>	95		71 - 126		10/03/13 16:16	1
<i>4-Bromofluorobenzene (Surr)</i>	106		73 - 120		10/03/13 16:16	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Barium</b>	<b>0.019</b>		0.0020		mg/L		10/02/13 08:35	10/02/13 16:54	1
Cadmium	ND		0.0010		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Calcium</b>	<b>5.8</b>		0.50		mg/L		10/02/13 08:35	10/02/13 16:54	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 16:54	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Iron</b>	<b>9.5</b>		0.050		mg/L		10/02/13 08:35	10/02/13 16:54	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Manganese</b>	<b>0.50</b>		0.0030		mg/L		10/02/13 08:35	10/02/13 16:54	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 16:54	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Sodium</b>	<b>12</b>		1.0		mg/L		10/02/13 08:35	10/02/13 16:54	1
<b>Zinc</b>	<b>0.018</b>		0.010		mg/L		10/02/13 08:35	10/02/13 16:54	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:34	1

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-1**

**Lab Sample ID: 480-46836-1**

Date Collected: 09/30/13 11:35

Matrix: Water

Date Received: 10/01/13 02:00

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		2.5		mg/L			10/02/13 17:31	5
Sulfate	9.9		2.0		mg/L			10/03/13 14:17	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:05	1
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:23	1
Alkalinity, Total	29		5.0		mg/L			10/01/13 18:42	1
Total Dissolved Solids	120		10		mg/L			10/01/13 17:13	1

**Client Sample ID: MW-3**

**Lab Sample ID: 480-46836-2**

Date Collected: 09/30/13 13:00

Matrix: Water

Date Received: 10/01/13 02:00

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 11:15	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
TBA-d9 (Surr)	92		50 - 150					10/02/13 11:15	1
Dibromofluoromethane (Surr)	99		50 - 150					10/02/13 11:15	1

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 16:39	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 16:39	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 16:39	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 16:39	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 16:39	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 16:39	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 16:39	1
<b>1,4-Dichlorobenzene</b>	<b>1.1</b>		1.0		ug/L			10/03/13 16:39	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 16:39	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 16:39	1
2-Hexanone	ND		5.0		ug/L			10/03/13 16:39	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 16:39	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 16:39	1
Acetone	ND		10		ug/L			10/03/13 16:39	1
Benzene	ND		1.0		ug/L			10/03/13 16:39	1
Bromobenzene	ND		1.0		ug/L			10/03/13 16:39	1
Bromoform	ND		1.0		ug/L			10/03/13 16:39	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-3**

**Lab Sample ID: 480-46836-2**

Date Collected: 09/30/13 13:00

Matrix: Water

Date Received: 10/01/13 02:00

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0		ug/L			10/03/13 16:39	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 16:39	1
<b>Chlorobenzene</b>	<b>4.2</b>		1.0		ug/L			10/03/13 16:39	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 16:39	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 16:39	1
Chloroethane	ND		1.0		ug/L			10/03/13 16:39	1
Chloroform	ND		1.0		ug/L			10/03/13 16:39	1
Chloromethane	ND		1.0		ug/L			10/03/13 16:39	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 16:39	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 16:39	1
Dibromomethane	ND		1.0		ug/L			10/03/13 16:39	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 16:39	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 16:39	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 16:39	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 16:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 16:39	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 16:39	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 16:39	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 16:39	1
Naphthalene	ND		1.0		ug/L			10/03/13 16:39	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
o-Xylene	ND		1.0		ug/L			10/03/13 16:39	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
Styrene	ND		1.0		ug/L			10/03/13 16:39	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 16:39	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 16:39	1
Toluene	ND		1.0		ug/L			10/03/13 16:39	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 16:39	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 16:39	1
Trichloroethene	ND		1.0		ug/L			10/03/13 16:39	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 16:39	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 16:39	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Chlorodifluoromethane	6.0		ug/L		0.95	75-45-6		10/03/13 16:39	1
Silanol, dimethyl(1,1,2-trimethylpropyl)	4.1	T J N	ug/L		3.59	55644-10-5		10/03/13 16:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		66 - 137		10/03/13 16:39	1
Toluene-d8 (Surr)	93		71 - 126		10/03/13 16:39	1
4-Bromofluorobenzene (Surr)	107		73 - 120		10/03/13 16:39	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:06	1
Barium	0.076		0.0020		mg/L		10/02/13 08:35	10/02/13 17:06	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-3**

**Lab Sample ID: 480-46836-2**

**Date Collected: 09/30/13 13:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 6010C - Metals (ICP) - Dissolved (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.0010		mg/L		10/02/13 08:35	10/02/13 17:06	1
Calcium	17		0.50		mg/L		10/02/13 08:35	10/02/13 17:06	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:06	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:06	1
Iron	2.3		0.050		mg/L		10/02/13 08:35	10/02/13 17:06	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:06	1
Manganese	6.3		0.0030		mg/L		10/02/13 08:35	10/02/13 17:06	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:06	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:06	1
Sodium	6.0		1.0		mg/L		10/02/13 08:35	10/02/13 17:06	1
Zinc	0.023		0.010		mg/L		10/02/13 08:35	10/02/13 17:06	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:35	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.8		1.0		mg/L			10/02/13 17:41	2
Sulfate	15		2.0		mg/L			10/03/13 14:27	1
Nitrate as N	0.083		0.050		mg/L			10/01/13 18:39	1
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:25	1
Alkalinity, Total	67		5.0		mg/L			10/01/13 18:53	1
Total Dissolved Solids	120		10		mg/L			10/01/13 17:15	1

**Client Sample ID: MW-4S**

**Lab Sample ID: 480-46836-3**

**Date Collected: 09/30/13 13:15**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 11:39	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
TBA-d9 (Surr)	93		50 - 150					10/02/13 11:39	1
Dibromofluoromethane (Surr)	98		50 - 150					10/02/13 11:39	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 17:02	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 17:02	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 17:02	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:02	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4S**

**Lab Sample ID: 480-46836-3**

**Date Collected: 09/30/13 13:15**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 17:02	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 17:02	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:02	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 17:02	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:02	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:02	1
2-Hexanone	ND		5.0		ug/L			10/03/13 17:02	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:02	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 17:02	1
Acetone	ND		10		ug/L			10/03/13 17:02	1
Benzene	ND		1.0		ug/L			10/03/13 17:02	1
Bromobenzene	ND		1.0		ug/L			10/03/13 17:02	1
Bromoform	ND		1.0		ug/L			10/03/13 17:02	1
Bromomethane	ND		1.0		ug/L			10/03/13 17:02	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 17:02	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 17:02	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 17:02	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 17:02	1
Chloroethane	ND		1.0		ug/L			10/03/13 17:02	1
Chloroform	ND		1.0		ug/L			10/03/13 17:02	1
Chloromethane	ND		1.0		ug/L			10/03/13 17:02	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:02	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:02	1
Dibromomethane	ND		1.0		ug/L			10/03/13 17:02	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 17:02	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 17:02	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 17:02	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 17:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 17:02	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 17:02	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 17:02	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 17:02	1
Naphthalene	ND		1.0		ug/L			10/03/13 17:02	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
o-Xylene	ND		1.0		ug/L			10/03/13 17:02	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
Styrene	ND		1.0		ug/L			10/03/13 17:02	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 17:02	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 17:02	1
Toluene	ND		1.0		ug/L			10/03/13 17:02	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:02	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:02	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4S**

**Lab Sample ID: 480-46836-3**

Date Collected: 09/30/13 13:15

Matrix: Water

Date Received: 10/01/13 02:00

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0		ug/L			10/03/13 17:02	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 17:02	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 17:02	1
<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Chlorodifluoromethane	1.3		ug/L		0.96	75-45-6		10/03/13 17:02	1
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>					10/03/13 17:02	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,2-Dichloroethane-d4 (Surr)	92		66 - 137					10/03/13 17:02	1
Toluene-d8 (Surr)	92		71 - 126					10/03/13 17:02	1
4-Bromofluorobenzene (Surr)	99		73 - 120					10/03/13 17:02	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:08	1
Barium	0.072		0.0020		mg/L		10/02/13 08:35	10/02/13 17:08	1
Cadmium	ND		0.0010		mg/L		10/02/13 08:35	10/02/13 17:08	1
Calcium	18		0.50		mg/L		10/02/13 08:35	10/02/13 17:08	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:08	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:08	1
Iron	3.1		0.050		mg/L		10/02/13 08:35	10/02/13 17:08	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:08	1
Manganese	0.79		0.0030		mg/L		10/02/13 08:35	10/02/13 17:08	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:08	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:08	1
Sodium	31		1.0		mg/L		10/02/13 08:35	10/02/13 17:08	1
Zinc	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:08	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:42	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53		0.50		mg/L			10/02/13 17:51	1
Sulfate	6.7		2.0		mg/L			10/03/13 15:07	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:07	1
Chemical Oxygen Demand	18		10		mg/L			10/03/13 19:10	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:27	1
Alkalinity, Total	51		5.0		mg/L			10/01/13 19:21	1
Total Dissolved Solids	190		10		mg/L			10/01/13 17:16	1

**Client Sample ID: MW-4D**

**Lab Sample ID: 480-46836-4**

Date Collected: 09/30/13 13:10

Matrix: Water

Date Received: 10/01/13 02:00

**Method: 8260C SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 12:03	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4D**

**Lab Sample ID: 480-46836-4**

**Date Collected: 09/30/13 13:10**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
TBA-d9 (Surr)	97		50 - 150		10/02/13 12:03	1
Dibromofluoromethane (Surr)	101		50 - 150		10/02/13 12:03	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 17:27	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 17:27	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 17:27	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 17:27	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 17:27	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:27	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 17:27	1
<b>1,4-Dichlorobenzene</b>	<b>2.2</b>		1.0		ug/L			10/03/13 17:27	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:27	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:27	1
2-Hexanone	ND		5.0		ug/L			10/03/13 17:27	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:27	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 17:27	1
Acetone	ND		10		ug/L			10/03/13 17:27	1
Benzene	ND		1.0		ug/L			10/03/13 17:27	1
Bromobenzene	ND		1.0		ug/L			10/03/13 17:27	1
Bromoform	ND		1.0		ug/L			10/03/13 17:27	1
Bromomethane	ND		1.0		ug/L			10/03/13 17:27	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 17:27	1
<b>Chlorobenzene</b>	<b>4.9</b>		1.0		ug/L			10/03/13 17:27	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 17:27	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 17:27	1
Chloroethane	ND		1.0		ug/L			10/03/13 17:27	1
Chloroform	ND		1.0		ug/L			10/03/13 17:27	1
Chloromethane	ND		1.0		ug/L			10/03/13 17:27	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:27	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:27	1
Dibromomethane	ND		1.0		ug/L			10/03/13 17:27	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 17:27	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 17:27	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 17:27	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 17:27	1

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## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4D**

**Lab Sample ID: 480-46836-4**

**Date Collected: 09/30/13 13:10**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 17:27	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 17:27	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 17:27	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 17:27	1
Naphthalene	ND		1.0		ug/L			10/03/13 17:27	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
o-Xylene	ND		1.0		ug/L			10/03/13 17:27	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
Styrene	ND		1.0		ug/L			10/03/13 17:27	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 17:27	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 17:27	1
Toluene	ND		1.0		ug/L			10/03/13 17:27	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:27	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:27	1
Trichloroethene	ND		1.0		ug/L			10/03/13 17:27	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 17:27	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 17:27	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Chlorodifluoromethane	20		ug/L		0.95	75-45-6		10/03/13 17:27	1
Ethyl ether	5.1		ug/L		1.84	60-29-7		10/03/13 17:27	1
Silanol, trimethyl-	4.2	T J N	ug/L		3.59	1066-40-6		10/03/13 17:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 137		10/03/13 17:27	1
Toluene-d8 (Surr)	94		71 - 126		10/03/13 17:27	1
4-Bromofluorobenzene (Surr)	98		73 - 120		10/03/13 17:27	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:18	1
Barium	0.040		0.0020		mg/L		10/02/13 08:35	10/02/13 17:18	1
Cadmium	0.0015		0.0010		mg/L		10/02/13 08:35	10/02/13 17:18	1
Calcium	31		0.50		mg/L		10/02/13 08:35	10/02/13 17:18	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:18	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:18	1
Iron	1.5		0.050		mg/L		10/02/13 08:35	10/02/13 17:18	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:18	1
Manganese	11		0.0030		mg/L		10/02/13 08:35	10/02/13 17:18	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:18	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:18	1
Sodium	19		1.0		mg/L		10/02/13 08:35	10/02/13 17:18	1
Zinc	0.049		0.010		mg/L		10/02/13 08:35	10/02/13 17:18	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:44	1

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## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4D**

**Lab Sample ID: 480-46836-4**

**Date Collected: 09/30/13 13:10**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		0.50		mg/L			10/02/13 18:01	1
Sulfate	10		2.0		mg/L			10/03/13 15:17	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:08	1
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:06	10/04/13 12:28	1
Alkalinity, Total	170		5.0		mg/L			10/01/13 19:26	1
Total Dissolved Solids	220		10		mg/L			10/01/13 17:17	1

**Client Sample ID: MW-6S**

**Lab Sample ID: 480-46836-5**

**Date Collected: 09/30/13 08:30**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 12:27	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
TBA-d9 (Surr)	99		50 - 150					10/02/13 12:27	1
Dibromofluoromethane (Surr)	101		50 - 150					10/02/13 12:27	1

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 17:50	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 17:50	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 17:50	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 17:50	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 17:50	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:50	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 17:50	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 17:50	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:50	1
2-Hexanone	ND		5.0		ug/L			10/03/13 17:50	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 17:50	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 17:50	1
Acetone	ND		10		ug/L			10/03/13 17:50	1
Benzene	ND		1.0		ug/L			10/03/13 17:50	1
Bromobenzene	ND		1.0		ug/L			10/03/13 17:50	1
Bromoform	ND		1.0		ug/L			10/03/13 17:50	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-6S**

**Lab Sample ID: 480-46836-5**

Date Collected: 09/30/13 08:30

Matrix: Water

Date Received: 10/01/13 02:00

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0		ug/L			10/03/13 17:50	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 17:50	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 17:50	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 17:50	1
Dibromochloromethane	NU		1.0		ug/L			10/03/13 17:50	1
Chloroethane	ND		1.0		ug/L			10/03/13 17:50	1
Chloroform	ND		1.0		ug/L			10/03/13 17:50	1
Chloromethane	ND		1.0		ug/L			10/03/13 17:50	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:50	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:50	1
Dibromomethane	ND		1.0		ug/L			10/03/13 17:50	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 17:50	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 17:50	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 17:50	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 17:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 17:50	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 17:50	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 17:50	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 17:50	1
Naphthalene	ND		1.0		ug/L			10/03/13 17:50	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
n-Propylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
o-Xylene	ND		1.0		ug/L			10/03/13 17:50	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
Styrene	ND		1.0		ug/L			10/03/13 17:50	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 17:50	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 17:50	1
Toluene	ND		1.0		ug/L			10/03/13 17:50	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 17:50	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 17:50	1
Trichloroethene	ND		1.0		ug/L			10/03/13 17:50	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 17:50	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 17:50	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively identified Compound	None		ug/L					10/03/13 17:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		66 - 137		10/03/13 17:50	1
Toluene-d8 (Surr)	94		71 - 126		10/03/13 17:50	1
4-Bromofluorobenzene (Surr)	105		73 - 120		10/03/13 17:50	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:20	1
Barium	0.037		0.0020		mg/L		10/02/13 08:35	10/02/13 17:20	1
Cadmium	ND		0.0010		mg/L		10/02/13 08:35	10/02/13 17:20	1
Calcium	43		0.50		mg/L		10/02/13 08:35	10/02/13 17:20	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-6S**

**Lab Sample ID: 480-46836-5**

**Date Collected: 09/30/13 08:30**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 6010C - Metals (ICP) - Dissolved (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:20	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:20	1
Iron	ND		0.050		mg/L		10/02/13 08:35	10/02/13 17:20	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:20	1
<b>Manganese</b>	<b>0.098</b>		0.0030		mg/L		10/02/13 08:35	10/02/13 17:20	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:20	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:20	1
<b>Sodium</b>	<b>12</b>		1.0		mg/L		10/02/13 08:35	10/02/13 17:20	1
<b>Zinc</b>	<b>0.10</b>		0.010		mg/L		10/02/13 08:35	10/02/13 17:20	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:46	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35		0.50		mg/L			10/03/13 19:20	1
Sulfate	62		2.0		mg/L			10/04/13 12:59	1
Nitrate as N	0.72		0.050		mg/L			10/01/13 18:40	1
Chemical Oxygen Demand	12		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	0.014		0.010		mg/L		10/04/13 06:08	10/04/13 12:30	1
Alkalinity, Total	50		5.0		mg/L			10/02/13 17:10	1
Total Dissolved Solids	250		10		mg/L			10/03/13 00:37	1

**Client Sample ID: MW-6D**

**Lab Sample ID: 480-46836-6**

**Date Collected: 09/30/13 08:45**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 12:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
TBA-d9 (Surr)	105		50 - 150					10/02/13 12:51	1
Dibromofluoromethane (Surr)	101		50 - 150					10/02/13 12:51	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 18:14	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 18:14	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 18:14	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 18:14	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 18:14	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-6D**

**Lab Sample ID: 480-46836-6**

**Date Collected: 09/30/13 08:45**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 18:14	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 18:14	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 18:14	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 18:14	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 18:14	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 18:14	1
2-Hexanone	ND		5.0		ug/L			10/03/13 18:14	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 18:14	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 18:14	1
Acetone	ND		10		ug/L			10/03/13 18:14	1
Benzene	ND		1.0		ug/L			10/03/13 18:14	1
Bromobenzene	ND		1.0		ug/L			10/03/13 18:14	1
Bromoform	ND		1.0		ug/L			10/03/13 18:14	1
Bromomethane	ND		1.0		ug/L			10/03/13 18:14	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 18:14	1
<b>Chlorobenzene</b>	<b>1.5</b>		1.0		ug/L			10/03/13 18:14	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 18:14	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 18:14	1
Chloroethane	ND		1.0		ug/L			10/03/13 18:14	1
Chloroform	ND		1.0		ug/L			10/03/13 18:14	1
Chloromethane	ND		1.0		ug/L			10/03/13 18:14	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 18:14	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 18:14	1
Dibromomethane	ND		1.0		ug/L			10/03/13 18:14	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 18:14	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 18:14	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 18:14	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 18:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 18:14	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 18:14	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 18:14	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 18:14	1
Naphthalene	ND		1.0		ug/L			10/03/13 18:14	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
o-Xylene	ND		1.0		ug/L			10/03/13 18:14	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
Styrene	ND		1.0		ug/L			10/03/13 18:14	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 18:14	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 18:14	1
Toluene	ND		1.0		ug/L			10/03/13 18:14	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 18:14	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 18:14	1
Trichloroethene	ND		1.0		ug/L			10/03/13 18:14	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 18:14	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-6D**

**Lab Sample ID: 480-46836-6**

Date Collected: 09/30/13 08:45

Matrix: Water

Date Received: 10/01/13 02:00

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Vinyl chloride	ND		1.0		ug/L			10/03/13 18:14	1	
<b>Tentatively Identified Compound</b>										
Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac	
Chlorodifluoromethane	1.3		ug/L		0.95	75-45-6		10/03/13 18:14	1	
Ethyl ether	2.2		ug/L		1.84	60-29-7		10/03/13 18:14	1	
Tentatively Identified Compound	None		ug/L					10/03/13 18:14	1	
<b>Surrogate</b>										
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	107		66 - 137					10/03/13 18:14	1	
Toluene-d8 (Surr)	97		71 - 126					10/03/13 18:14	1	
4-Bromofluorobenzene (Surr)	103		73 - 120					10/03/13 18:14	1	

### Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:23	1
Barium	0.050		0.0020		mg/L		10/02/13 08:35	10/02/13 17:23	1
Cadmium	0.0013		0.0010		mg/L		10/02/13 08:35	10/02/13 17:23	1
Calcium	43		0.50		mg/L		10/02/13 08:35	10/02/13 17:23	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:23	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:23	1
Iron	7.4		0.050		mg/L		10/02/13 08:35	10/02/13 17:23	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:23	1
Manganese	11		0.0030		mg/L		10/02/13 08:35	10/02/13 17:23	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:23	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:23	1
Sodium	21		1.0		mg/L		10/02/13 08:35	10/02/13 17:23	1
Zinc	0.041		0.010		mg/L		10/02/13 08:35	10/02/13 17:23	1

### Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:52	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	35		0.50		mg/L			10/03/13 19:30	1
Sulfate	61		2.0		mg/L			10/03/13 19:30	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:11	1
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	0.092		0.010		mg/L		10/04/13 06:08	10/04/13 12:31	1
Alkalinity, Total	140		5.0		mg/L			10/02/13 17:15	1
Total Dissolved Solids	320		10		mg/L			10/01/13 17:20	1

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

Date Collected: 09/30/13 00:00

Matrix: Water

Date Received: 10/01/13 02:00

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 13:15	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
TBA-d9 (Surr)	92		50 - 150		10/02/13 13:15	1
Dibromofluoromethane (Surr)	101		50 - 150		10/02/13 13:15	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 18:37	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 18:37	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 18:37	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 18:37	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 18:37	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 18:37	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 18:37	1
<b>1,4-Dichlorobenzene</b>	<b>2.4</b>		1.0		ug/L			10/03/13 18:37	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 18:37	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 18:37	1
2-Hexanone	ND		5.0		ug/L			10/03/13 18:37	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 18:37	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 18:37	1
Acetone	ND		10		ug/L			10/03/13 18:37	1
Benzene	ND		1.0		ug/L			10/03/13 18:37	1
Bromobenzene	ND		1.0		ug/L			10/03/13 18:37	1
Bromoform	ND		1.0		ug/L			10/03/13 18:37	1
Bromomethane	ND		1.0		ug/L			10/03/13 18:37	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 18:37	1
<b>Chlorobenzene</b>	<b>5.0</b>		1.0		ug/L			10/03/13 18:37	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 18:37	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 18:37	1
Chloroethane	ND		1.0		ug/L			10/03/13 18:37	1
Chloroform	ND		1.0		ug/L			10/03/13 18:37	1
Chloromethane	ND		1.0		ug/L			10/03/13 18:37	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 18:37	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 18:37	1
Dibromomethane	ND		1.0		ug/L			10/03/13 18:37	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 18:37	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 18:37	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 18:37	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 18:37	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 18:37	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 18:37	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 18:37	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 18:37	1
Naphthalene	ND		1.0		ug/L			10/03/13 18:37	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
o-Xylene	ND		1.0		ug/L			10/03/13 18:37	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
Styrene	ND		1.0		ug/L			10/03/13 18:37	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 18:37	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 18:37	1
Toluene	ND		1.0		ug/L			10/03/13 18:37	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 18:37	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 18:37	1
Trichloroethene	ND		1.0		ug/L			10/03/13 18:37	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 18:37	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 18:37	1

### Tentatively Identified Compound

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Chlorodifluoromethane	20		ug/L		0.95	75-45-6		10/03/13 18:37	1
Ethyl ether	5.5		ug/L		1.84	60-29-7		10/03/13 18:37	1
Tentatively Identified Compound	None		ug/L					10/03/13 18:37	1

### Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		66 - 137		10/03/13 18:37	1
Toluene-d8 (Surr)	94		71 - 126		10/03/13 18:37	1
4-Bromofluorobenzene (Surr)	105		73 - 120		10/03/13 18:37	1

### Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:25	1
Barium	0.039		0.0020		mg/L		10/02/13 08:35	10/02/13 17:25	1
Cadmium	0.0014		0.0010		mg/L		10/02/13 08:35	10/02/13 17:25	1
Calcium	30		0.50		mg/L		10/02/13 08:35	10/02/13 17:25	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 17:25	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 17:25	1
Iron	1.4		0.050		mg/L		10/02/13 08:35	10/02/13 17:25	1
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 17:25	1
Manganese	11		0.0030		mg/L		10/02/13 08:35	10/02/13 17:25	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 17:25	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 17:25	1
Sodium	18		1.0		mg/L		10/02/13 08:35	10/02/13 17:25	1
Zinc	0.049		0.010		mg/L		10/02/13 08:35	10/02/13 17:25	1

### Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:54	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

<b>General Chemistry</b>									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14		2.5		mg/L			10/03/13 19:40	5
Sulfate	3.7		2.0		mg/L			10/04/13 13:08	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:14	1
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1
Physiologically Available Cyanide	0.022		0.010		mg/L		10/04/13 06:08	10/04/13 12:32	1
Alkalinity, Total	170		5.0		mg/L			10/02/13 17:21	1
Total Dissolved Solids	210		10		mg/L			10/01/13 17:22	1

**Client Sample ID: SW-2**

**Lab Sample ID: 480-46836-8**

**Date Collected: 09/30/13 10:45**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

<b>Method: 8260C SIM - Volatile Organic Compounds (GC/MS)</b>									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 13:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
TBA-d9 (Surr)	101		50 - 150					10/02/13 13:39	1
Dibromofluoromethane (Surr)	102		50 - 150					10/02/13 13:39	1

<b>Method: 8260C - Volatile Organic Compounds by GC/MS</b>									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 19:01	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 19:01	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 19:01	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 19:01	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 19:01	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 19:01	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 19:01	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 19:01	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 19:01	1
2-Hexanone	ND		5.0		ug/L			10/03/13 19:01	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 19:01	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 19:01	1
Acetone	ND		10		ug/L			10/03/13 19:01	1
Benzene	ND		1.0		ug/L			10/03/13 19:01	1
Bromobenzene	ND		1.0		ug/L			10/03/13 19:01	1
Bromoform	ND		1.0		ug/L			10/03/13 19:01	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SW-2**

**Lab Sample ID: 480-46836-8**

**Date Collected: 09/30/13 10:45**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0		ug/L			10/03/13 19:01	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 19:01	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 19:01	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 19:01	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 19:01	1
Chloroethane	ND		1.0		ug/L			10/03/13 19:01	1
Chloroform	ND		1.0		ug/L			10/03/13 19:01	1
Chloromethane	ND		1.0		ug/L			10/03/13 19:01	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 19:01	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 19:01	1
Dibromomethane	ND		1.0		ug/L			10/03/13 19:01	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 19:01	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 19:01	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 19:01	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
2-Butanone (MEK)	ND		1.0		ug/L			10/03/13 19:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 19:01	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 19:01	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 19:01	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 19:01	1
Naphthalene	ND		1.0		ug/L			10/03/13 19:01	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
o-Xylene	ND		1.0		ug/L			10/03/13 19:01	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
Styrene	ND		1.0		ug/L			10/03/13 19:01	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 19:01	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 19:01	1
Toluene	ND		1.0		ug/L			10/03/13 19:01	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 19:01	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 19:01	1
Trichloroethene	ND		1.0		ug/L			10/03/13 19:01	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 19:01	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 19:01	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Silanol, trimethyl-	2.8	T J N	ug/L		3.59	1066-40-6		10/03/13 19:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 137		10/03/13 19:01	1
Toluene-d8 (Surr)	95		71 - 126		10/03/13 19:01	1
4-Bromofluorobenzene (Surr)	103		73 - 120		10/03/13 19:01	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	20		0.50		mg/L		10/02/13 08:35	10/02/13 17:27	1
Iron	6.3		0.050		mg/L		10/02/13 08:35	10/02/13 17:27	1
Manganese	1.6		0.0030		mg/L		10/02/13 08:35	10/02/13 17:27	1
Sodium	11		1.0		mg/L		10/02/13 08:35	10/02/13 17:27	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SW-2**

**Lab Sample ID: 480-46836-8**

Date Collected: 09/30/13 10:45

Matrix: Water

Date Received: 10/01/13 02:00

### Method: 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.1		1.0		ug/L		10/02/13 11:55	10/02/13 21:24	1
Barium	31		1.0		ug/L		10/02/13 11:55	10/02/13 21:24	1
Cadmium	ND		0.50		ug/L		10/02/13 11:55	10/02/13 21:24	1
Chromium	ND		1.5		ug/L		10/02/13 11:55	10/02/13 21:24	1
Copper	ND		1.0		ug/L		10/02/13 11:55	10/02/13 21:24	1
Lead	ND		1.0		ug/L		10/02/13 11:55	10/02/13 21:24	1
Selenium	ND		1.0		ug/L		10/02/13 11:55	10/03/13 19:22	1
Silver	ND		0.50		ug/L		10/02/13 11:55	10/02/13 21:24	1
Zinc	ND		10		ug/L		10/02/13 11:55	10/03/13 19:22	1

### Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:56	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		0.50		mg/L			10/03/13 19:51	1
Sulfate	12		2.0		mg/L			10/03/13 19:51	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:18	1
Chemical Oxygen Demand	41		10		mg/L			10/03/13 19:10	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:33	1
Alkalinity, Total	71		5.0		mg/L			10/02/13 17:27	1
Total Dissolved Solids	150		10		mg/L			10/01/13 17:23	1

**Client Sample ID: SW-3**

**Lab Sample ID: 480-46836-9**

Date Collected: 09/30/13 09:50

Matrix: Water

Date Received: 10/01/13 02:00

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.6		ug/L			10/02/13 14:03	1
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
TBA-d9 (Surr)	98		50 - 150					10/02/13 14:03	1
Dibromofluoromethane (Surr)	101		50 - 150					10/02/13 14:03	1

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,1-Dichloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,1-Dichloroethene	ND		1.0		ug/L			10/04/13 05:27	1
1,1-Dichloropropene	ND		1.0		ug/L			10/04/13 05:27	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/04/13 05:27	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/04/13 05:27	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SW-3**

**Lab Sample ID: 480-46836-9**

**Date Collected: 09/30/13 09:50**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	ND		1.0		ug/L			10/04/13 05:27	1
1,2-Dichloropropane	ND		1.0		ug/L			10/04/13 05:27	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,3-Dichloropropane	ND		1.0		ug/L			10/04/13 05:27	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1
2,2-Dichloropropane	ND		1.0		ug/L			10/04/13 05:27	1
2-Chlorotoluene	ND		1.0		ug/L			10/04/13 05:27	1
2-Hexanone	ND		5.0		ug/L			10/04/13 05:27	1
4-Chlorotoluene	ND		1.0		ug/L			10/04/13 05:27	1
4-Isopropyltoluene	ND		1.0		ug/L			10/04/13 05:27	1
Acetone	ND		10		ug/L			10/04/13 05:27	1
Benzene	ND		1.0		ug/L			10/04/13 05:27	1
Bromobenzene	ND		1.0		ug/L			10/04/13 05:27	1
Bromoform	ND		1.0		ug/L			10/04/13 05:27	1
Bromomethane	ND		1.0		ug/L			10/04/13 05:27	1
Carbon tetrachloride	ND		1.0		ug/L			10/04/13 05:27	1
Chlorobenzene	ND		1.0		ug/L			10/04/13 05:27	1
Bromochloromethane	ND		1.0		ug/L			10/04/13 05:27	1
Dibromochloromethane	ND		1.0		ug/L			10/04/13 05:27	1
Chloroethane	ND		1.0		ug/L			10/04/13 05:27	1
Chloroform	ND		1.0		ug/L			10/04/13 05:27	1
Chloromethane	ND		1.0		ug/L			10/04/13 05:27	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 05:27	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 05:27	1
Dibromomethane	ND		1.0		ug/L			10/04/13 05:27	1
Bromodichloromethane	ND		1.0		ug/L			10/04/13 05:27	1
Ethylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
1,2-Dibromoethane	ND		1.0		ug/L			10/04/13 05:27	1
Hexachlorobutadiene	ND		1.0		ug/L			10/04/13 05:27	1
Isopropylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
2-Butanone (MEK)	ND	*	10		ug/L			10/04/13 05:27	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/04/13 05:27	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/04/13 05:27	1
Methylene Chloride	ND		1.0		ug/L			10/04/13 05:27	1
m,p-Xylene	ND		2.0		ug/L			10/04/13 05:27	1
Naphthalene	ND		1.0		ug/L			10/04/13 05:27	1
n-Butylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
N-Propylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
o-Xylene	ND		1.0		ug/L			10/04/13 05:27	1
sec-Butylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
Styrene	ND		1.0		ug/L			10/04/13 05:27	1
tert-Butylbenzene	ND		1.0		ug/L			10/04/13 05:27	1
Tetrachloroethene	ND		1.0		ug/L			10/04/13 05:27	1
Toluene	ND		1.0		ug/L			10/04/13 05:27	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 05:27	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 05:27	1
Trichloroethene	ND		1.0		ug/L			10/04/13 05:27	1
Trichlorofluoromethane	ND		1.0		ug/L			10/04/13 05:27	1

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SW-3**

**Lab Sample ID: 480-46836-9**

**Date Collected: 09/30/13 09:50**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		1.0		ug/L			10/04/13 05:27	1
<i>Tentatively Identified Compound</i>	<i>Est. Result</i>	<i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>RT</i>	<i>CAS No.</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Tentatively Identified Compound</i>	<i>None</i>		<i>ug/L</i>					10/04/13 05:27	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	114		66 - 137					10/04/13 05:27	1
Toluene-d8 (Surr)	94		71 - 126					10/04/13 05:27	1
4-Bromofluorobenzene (Surr)	103		73 - 120					10/04/13 05:27	1

**Method: 6010C - Metals (ICP) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	31		0.50		mg/L		10/02/13 08:35	10/02/13 17:30	1
Iron	ND		0.050		mg/L		10/02/13 08:35	10/02/13 17:30	1
Manganese	0.046		0.0030		mg/L		10/02/13 08:35	10/02/13 17:30	1
Sodium	6.8		1.0		mg/L		10/02/13 08:35	10/02/13 17:30	1

**Method: 6020A - Metals (ICP/MS) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.2		1.0		ug/L		10/02/13 11:55	10/02/13 21:30	1
Barium	14		1.0		ug/L		10/02/13 11:55	10/02/13 21:30	1
Cadmium	ND		0.50		ug/L		10/02/13 11:55	10/02/13 21:30	1
Chromium	ND		1.5		ug/L		10/02/13 11:55	10/02/13 21:30	1
Copper	ND		1.0		ug/L		10/02/13 11:55	10/02/13 21:30	1
Lead	ND		1.0		ug/L		10/02/13 11:55	10/02/13 21:30	1
Selenium	ND		1.0		ug/L		10/02/13 11:55	10/03/13 19:27	1
Silver	ND		0.50		ug/L		10/02/13 11:55	10/02/13 21:30	1
Zinc	ND		10		ug/L		10/02/13 11:55	10/03/13 19:27	1

**Method: 7470A - Mercury (CVAA) - Dissolved**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:58	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.8		0.50		mg/L			10/03/13 20:01	1
Sulfate	43		2.0		mg/L			10/03/13 20:01	1
Nitrate as N	ND		0.050		mg/L			10/01/13 17:19	1
Chemical Oxygen Demand	ND		10		mg/L			10/05/13 12:40	1
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:34	1
Alkalinity, Total	67		5.0		mg/L			10/02/13 17:33	1
Total Dissolved Solids	170		10		mg/L			10/01/13 18:03	1

**Client Sample ID: SED-1**

**Lab Sample ID: 480-46836-10**

**Date Collected: 09/30/13 12:00**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 89.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.1		ug/Kg	☼	10/03/13 11:23	10/03/13 16:17	1
1,1,1-Trichloroethane	ND		5.1		ug/Kg	☼	10/03/13 11:23	10/03/13 16:17	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SED-1**

**Lab Sample ID: 480-46836-10**

**Date Collected: 09/30/13 12:00**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 89.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,1,2-Trichloroethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,1-Dichloroethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,1-Dichloroethene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,1-Dichloropropene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2,3-Trichlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2,3-Trichloropropane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2,4-Trichlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2,4-Trimethylbenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2-Dibromo-3-Chloropropane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2-Dichlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2-Dichloroethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2-Dichloropropane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,3,5-Trimethylbenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,3-Dichlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,3-Dichloropropane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,4-Dichlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
2,2-Dichloropropane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
2-Chlorotoluene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
2-Hexanone	ND		25		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
4-Chlorotoluene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
4-Isopropyltoluene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Acetone	ND		25		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Benzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Bromobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Bromoform	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Bromomethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Carbon tetrachloride	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Chlorobenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Bromochloromethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Dibromochloromethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Chloroethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Chloroform	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Chloromethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
cis-1,2-Dichloroethene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
cis-1,3-Dichloropropene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Dibromomethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Bromodichloromethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Ethylbenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
1,2-Dibromoethane	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Hexachlorobutadiene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Isopropylbenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
2-Butanone (MEK)	ND		25		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
4-Methyl-2-pentanone (MIBK)	ND		25		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Methyl tert-butyl ether	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Methylene Chloride	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
m,p-Xylene	ND		10		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
Naphthalene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1
n-Butylbenzene	ND		5.1		ug/Kg	*	10/03/13 11:23	10/03/13 16:17	1

## Client Sample Results

Client: Weston & Sempson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SED-1**

**Lab Sample ID: 480-46836-10**

**Date Collected: 09/30/13 12:00**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 89.3**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
o-Xylene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
sec-Butylbenzene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Styrene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
tert-Butylbenzene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Tetrachloroethene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Toluene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
trans-1,2-Dichloroethene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
trans-1,3-Dichloropropene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Trichloroethene	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Trichlorofluoromethane	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1
Vinyl chloride	ND		5.1		ug/Kg	✖	10/03/13 11:23	10/03/13 16:17	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/Kg	✖			10/03/13 11:23	10/03/13 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		64 - 126	10/03/13 11:23	10/03/13 16:17	1
Toluene-d8 (Surr)	100		71 - 125	10/03/13 11:23	10/03/13 16:17	1
4-Bromofluorobenzene (Surr)	99		72 - 126	10/03/13 11:23	10/03/13 16:17	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.1		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Barium	8.9		0.53		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Cadmium	0.31		0.21		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Calcium	1300		53		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Chromium	13		0.53		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Copper	11		1.1		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Iron	8500		11		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Lead	10		1.1		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Manganese	96		0.21		mg/Kg	✖	10/02/13 12:30	10/03/13 21:13	1
Selenium	ND		4.3		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Silver	ND		0.53		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Sodium	ND		150		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1
Zinc	46		2.1		mg/Kg	✖	10/02/13 12:30	10/02/13 23:47	1

**Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.023		mg/Kg	✖	10/02/13 11:00	10/02/13 14:19	1

**Client Sample ID: SED-3**

**Lab Sample ID: 480-46836-11**

**Date Collected: 09/30/13 10:15**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 79.5**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.2		ug/Kg	✖	10/03/13 11:23	10/03/13 16:42	1
1,1,1-Trichloroethane	ND		4.2		ug/Kg	✖	10/03/13 11:23	10/03/13 16:42	1
1,1,2,2-Tetrachloroethane	ND		4.2		ug/Kg	✖	10/03/13 11:23	10/03/13 16:42	1
1,1,2-Trichloroethane	ND		4.2		ug/Kg	✖	10/03/13 11:23	10/03/13 16:42	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SED-3**

**Date Collected: 09/30/13 10:15**

**Date Received: 10/01/13 02:00**

**Lab Sample ID: 480-46836-11**

**Matrix: Solid**

**Percent Solids: 79.5**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,1-Dichloroethene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,1-Dichloropropene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2,3-Trichlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2,3-Trichloropropane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2,4-Trichlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2,4-Trimethylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2-Dibromo-3-Chloropropane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2-Dichlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2-Dichloroethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2-Dichloropropane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,3,5-Trimethylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,3-Dichlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,3-Dichloropropane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,4-Dichlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
2,2-Dichloropropane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
2-Chlorotoluene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
2-Hexanone	ND		21		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
4-Chlorotoluene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
4-Isopropyltoluene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Acetone	ND		21		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Benzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Bromobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Bromoform	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Bromomethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Carbon tetrachloride	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Chlorobenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Bromochloromethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Dibromochloromethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Chloroethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Chloroform	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Chloromethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
cis-1,2-Dichloroethene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
cis-1,3-Dichloropropene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Dibromomethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Bromodichloromethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Ethylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
1,2-Dibromoethane	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Hexachlorobutadiene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Isopropylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
2-Butanone (MEK)	ND		21		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
4-Methyl-2-pentanone (MIBK)	ND		21		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Methyl tert-butyl ether	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Methylene Chloride	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
m,p-Xylene	ND		8.4		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
Naphthalene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
n-Butylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
N-Propylbenzene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1
o-Xylene	ND		4.2		ug/Kg	☒	10/03/13 11:23	10/03/13 16:42	1

TestAmerica Buffalo

## Client Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SED-3**

**Lab Sample ID: 480-46836-11**

**Date Collected: 09/30/13 10:15**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 79.5**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Styrene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
tert-Butylbenzene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Tetrachloroethene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Toluene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
trans-1,2-Dichloroethene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
trans-1,3-Dichloropropene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Trichloroethene	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Trichlorofluoromethane	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1
Vinyl chloride	ND		4.2		ug/Kg	☼	10/03/13 11:23	10/03/13 16:42	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/Kg	☼			10/03/13 11:23	10/03/13 16:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		64 - 126	10/03/13 11:23	10/03/13 16:42	1
Toluene-d8 (Surr)	98		71 - 125	10/03/13 11:23	10/03/13 16:42	1
4-Bromofluorobenzene (Surr)	99		72 - 126	10/03/13 11:23	10/03/13 16:42	1

**Method: 6010C - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.1		2.3		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Barium	32		0.59		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Cadmium	ND		0.23		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Calcium	1700		59		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Chromium	14		0.59		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Copper	8.4		1.2		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Iron	11000		12		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Lead	7.2		1.2		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Manganese	320		0.23		mg/Kg	☼	10/02/13 12:30	10/03/13 21:15	1
Selenium	ND		4.7		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Silver	ND		0.59		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Sodium	ND		160		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1
Zinc	41		2.3		mg/Kg	☼	10/02/13 12:30	10/02/13 23:50	1

**Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.025		mg/Kg	☼	10/02/13 11:00	10/02/13 14:20	1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 480-46836-12**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,1-Dichloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,1-Dichloroethene	ND		1.0		ug/L			10/04/13 13:21	1

TestAmerica Buffalo

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: TRIP BLANK**

**Date Collected: 09/30/13 00:00**

**Date Received: 10/01/13 02:00**

**Lab Sample ID: 480-46836-12**

**Matrix: Water**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	ND		1.0		ug/L			10/04/13 13:21	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/04/13 13:21	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/04/13 13:21	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,2-Dichloroethane	ND		1.0		ug/L			10/04/13 13:21	1
1,2-Dichloropropane	ND		1.0		ug/L			10/04/13 13:21	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,3-Dichloropropane	ND		1.0		ug/L			10/04/13 13:21	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
2,2-Dichloropropane	ND		1.0		ug/L			10/04/13 13:21	1
2-Chlorotoluene	ND		1.0		ug/L			10/04/13 13:21	1
2-Hexanone	ND		5.0		ug/L			10/04/13 13:21	1
4-Chlorotoluene	ND		1.0		ug/L			10/04/13 13:21	1
4-Isopropyltoluene	ND		1.0		ug/L			10/04/13 13:21	1
<b>Acetone</b>	<b>13</b>		<b>10</b>		<b>ug/L</b>			<b>10/04/13 13:21</b>	<b>1</b>
Benzene	ND		1.0		ug/L			10/04/13 13:21	1
Bromobenzene	ND		1.0		ug/L			10/04/13 13:21	1
Bromotorm	ND		1.0		ug/L			10/04/13 13:21	1
Bromomethane	ND		1.0		ug/L			10/04/13 13:21	1
Carbon tetrachloride	ND		1.0		ug/L			10/04/13 13:21	1
Chlorobenzene	ND		1.0		ug/L			10/04/13 13:21	1
Bromochloromethane	ND		1.0		ug/L			10/04/13 13:21	1
Dibromochloromethane	ND		1.0		ug/L			10/04/13 13:21	1
Chloroethane	ND		1.0		ug/L			10/04/13 13:21	1
Chloroform	ND		1.0		ug/L			10/04/13 13:21	1
Chloromethane	ND		1.0		ug/L			10/04/13 13:21	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 13:21	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 13:21	1
Dibromomethane	ND		1.0		ug/L			10/04/13 13:21	1
Bromodichloromethane	ND		1.0		ug/L			10/04/13 13:21	1
Ethylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
1,2-Dibromoethane	ND		1.0		ug/L			10/04/13 13:21	1
Hexachlorobutadiene	ND		1.0		ug/L			10/04/13 13:21	1
Isopropylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
2-Butanone (MEK)	ND *		10		ug/L			10/04/13 13:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/04/13 13:21	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/04/13 13:21	1
Methylene Chloride	ND		1.0		ug/L			10/04/13 13:21	1
m,p-Xylene	ND		2.0		ug/L			10/04/13 13:21	1
Naphthalene	ND		1.0		ug/L			10/04/13 13:21	1
n-Butylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
n-Propylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
o-Xylene	ND		1.0		ug/L			10/04/13 13:21	1
sec-Butylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
Styrene	ND		1.0		ug/L			10/04/13 13:21	1

# Client Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 480-46836-12**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

**Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		1.0		ug/L			10/04/13 13:21	1
Tetrachloroethene	ND		1.0		ug/L			10/04/13 13:21	1
Toluene	ND		1.0		ug/L			10/04/13 13:21	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 13:21	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 13:21	1
Trichloroethene	ND		1.0		ug/L			10/04/13 13:21	1
Trichlorofluoromethane	ND		1.0		ug/L			10/04/13 13:21	1
Vinyl chloride	ND		1.0		ug/L			10/04/13 13:21	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
<i>Silanol, trimethyl-</i>	4.5	T J N	ug/L		3.59	1066-40-6		10/04/13 13:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>1,2-Dichloroethane-d4 (Surr)</i>	108		66 - 137		10/04/13 13:21	1
<i>Toluene-d8 (Surr)</i>	97		71 - 126		10/04/13 13:21	1
<i>4-Bromofluorobenzene (Surr)</i>	101		73 - 120		10/04/13 13:21	1

## Surrogate Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		12DCE (64-126)	TOL (71-125)	BFB (72-126)
480-46836-10	SED-1	100	100	99
480-46836-11	SED-3	99	98	99
LCS 480-142541/5	Lab Control Sample	98	101	100
LCSD 480-142541/6	Lab Control Sample Dup	96	100	102
MB 480-142541/7	Method Blank	95	99	98

**Surrogate Legend**

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

### Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		12DCE (66-137)	TOL (71-126)	BFB (73-120)
480-46836-1	MW-1	96	95	106
480-46836-2	MW-3	111	93	107
480-46836-3	MW-4S	92	92	99
480-46836-4	MW-4D	91	94	98
480-46836-5	MW-6S	90	94	105
480-46836-6	MW-6D	107	97	103
480-46836-7	DUP-1	94	94	105
480-46836-8	SW-2	93	95	103
480-46836-9	SW-3	114	94	103
480-46836-12	TRIP BLANK	108	97	101
LCS 480-142444/5	Lab Control Sample	102	99	109
LCS 480-142636/5	Lab Control Sample	107	99	105
LCS 480-142723/5	Lab Control Sample	108	96	110
MB 480-142444/8	Method Blank	112	97	100
MB 480-142636/7	Method Blank	112	98	101
MB 480-142723/7	Method Blank	107	96	101

**Surrogate Legend**

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		BA-d9 (Sur) (50-150)	DBFM (50-150)
480-46836-1	MW-1	88	101
480-46836-2	MW-3	92	99
480-46836-3	MW-4S	93	98
480-46836-4	MW-4D	97	101
480-46836-5	MW-6S	99	101

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# Surrogate Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

## Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BA-d9 (Sur	DBFM
		(50-150)	(50-150)
480-46836-6	MW-6D	105	101
480-46836-7	DUP-1	92	101
480-46836-8	SW-2	101	102
480-46836-9	SW-3	98	101
LCS 480-142226/4	Lab Control Sample	92	104
MB 480-142226/5	Method Blank	95	98

### Surrogate Legend

TBA-d9 (Surr) = TBA-d9 (Surr)

DBFM = Dibromofluoromethane (Surr)

# QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-142444/8

Matrix: Water

Analysis Batch: 142444

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 10:55	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 10:55	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 10:55	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 10:55	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 10:55	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 10:55	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 10:55	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 10:55	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 10:55	1
2-Hexanone	ND		5.0		ug/L			10/03/13 10:55	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 10:55	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 10:55	1
Acetone	ND		1.0		ug/L			10/03/13 10:55	1
Benzene	ND		1.0		ug/L			10/03/13 10:55	1
Bromobenzene	ND		1.0		ug/L			10/03/13 10:55	1
Bromoform	ND		1.0		ug/L			10/03/13 10:55	1
Bromomethane	ND		1.0		ug/L			10/03/13 10:55	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 10:55	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 10:55	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 10:55	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 10:55	1
Chloroethane	ND		1.0		ug/L			10/03/13 10:55	1
Chloroform	ND		1.0		ug/L			10/03/13 10:55	1
Chloromethane	ND		1.0		ug/L			10/03/13 10:55	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 10:55	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 10:55	1
Dibromomethane	ND		1.0		ug/L			10/03/13 10:55	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 10:55	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 10:55	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 10:55	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
2-Butanone (MEK)	ND		1.0		ug/L			10/03/13 10:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 10:55	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 10:55	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 10:55	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142444/8

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 142444

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		2.0		ug/L			10/03/13 10:55	1
Naphthalene	ND		1.0		ug/L			10/03/13 10:55	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
N-Propylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
o-Xylene	ND		1.0		ug/L			10/03/13 10:55	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
Styrene	ND		1.0		ug/L			10/03/13 10:55	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 10:55	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 10:55	1
Toluene	ND		1.0		ug/L			10/03/13 10:55	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 10:55	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 10:55	1
Trichloroethene	ND		1.0		ug/L			10/03/13 10:55	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 10:55	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 10:55	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					10/03/13 10:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		66 - 137		10/03/13 10:55	1
Toluene-d8 (Surr)	97		71 - 128		10/03/13 10:55	1
4-Bromofluorobenzene (Surr)	100		73 - 120		10/03/13 10:55	1

Lab Sample ID: LCS 480-142444/5

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 142444

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	24.9		ug/L		99	71 - 129
1,1-Dichloroethene	25.0	26.5		ug/L		106	58 - 121
1,2,4-Trimethylbenzene	25.0	25.1		ug/L		100	76 - 121
1,2-Dichlorobenzene	25.0	25.4		ug/L		102	80 - 124
1,2-Dichloroethane	25.0	26.8		ug/L		107	75 - 127
Benzene	25.0	27.3		ug/L		109	71 - 124
Chlorobenzene	25.0	25.6		ug/L		102	72 - 120
cis-1,2-Dichloroethene	25.0	25.7		ug/L		103	74 - 124
Ethylbenzene	25.0	25.8		ug/L		103	77 - 123
Methyl tert-butyl ether	25.0	26.9		ug/L		108	64 - 127
m,p-Xylene	50.0	53.0		ug/L		106	76 - 122
o-Xylene	25.0	25.9		ug/L		104	76 - 122
Tetrachloroethene	25.0	30.0		ug/L		120	74 - 122
Toluene	25.0	26.3		ug/L		105	80 - 122
trans-1,2-Dichloroethene	25.0	26.3		ug/L		105	73 - 127
Trichloroethene	25.0	26.1		ug/L		104	74 - 123

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## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-142444/5

Matrix: Water

Analysis Batch: 142444

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	109		73 - 120

Lab Sample ID: MB 480-142541/7

Matrix: Solid

Analysis Batch: 142541

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1,1-Trichloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1,2,2-Tetrachloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1,2-Trichloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1-Dichloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1-Dichloroethene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,1-Dichloropropene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2,3-Trichlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2,3-Trichloropropane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2,4-Trichlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2,4-Trimethylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2-Dichlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2-Dichloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2-Dichloropropane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,3,5-Trimethylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,3-Dichlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,3-Dichloropropane	ND		5.0		ug/Kg			10/03/13 13:31	1
1,4-Dichlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
2,2-Dichloropropane	ND		5.0		ug/Kg			10/03/13 13:31	1
2-Chlorotoluene	ND		5.0		ug/Kg			10/03/13 13:31	1
2-Hexanone	ND		25		ug/Kg			10/03/13 13:31	1
4-Chlorotoluene	ND		5.0		ug/Kg			10/03/13 13:31	1
4-Isopropyltoluene	ND		5.0		ug/Kg			10/03/13 13:31	1
Acetone	ND		25		ug/Kg			10/03/13 13:31	1
Benzene	ND		5.0		ug/Kg			10/03/13 13:31	1
Bromobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
Bromoform	ND		5.0		ug/Kg			10/03/13 13:31	1
Bromomethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Carbon tetrachloride	ND		5.0		ug/Kg			10/03/13 13:31	1
Chlorobenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
Bromochloromethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Dibromochloromethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Chloroethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Chloroform	ND		5.0		ug/Kg			10/03/13 13:31	1
Chloromethane	ND		5.0		ug/Kg			10/03/13 13:31	1
cis-1,2-Dichloroethene	ND		5.0		ug/Kg			10/03/13 13:31	1
cis-1,3-Dichloropropene	ND		5.0		ug/Kg			10/03/13 13:31	1
Dibromomethane	ND		5.0		ug/Kg			10/03/13 13:31	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142541/7

Matrix: Solid

Analysis Batch: 142541

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Ethylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
1,2-Dibromoethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Hexachlorobutadiene	ND		5.0		ug/Kg			10/03/13 13:31	1
Isopropylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
2-Butanone (MEK)	ND		25		ug/Kg			10/03/13 13:31	1
4-Methyl-2-pentanone (MIBK)	ND		25		ug/Kg			10/03/13 13:31	1
Methyl tert-butyl ether	ND		5.0		ug/Kg			10/03/13 13:31	1
Methylene Chloride	ND		5.0		ug/Kg			10/03/13 13:31	1
m,p-Xylene	ND		10		ug/Kg			10/03/13 13:31	1
Naphthalene	ND		5.0		ug/Kg			10/03/13 13:31	1
n-Butylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
N-Propylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
o-Xylene	ND		5.0		ug/Kg			10/03/13 13:31	1
sec-Butylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
Styrene	ND		5.0		ug/Kg			10/03/13 13:31	1
tert-Butylbenzene	ND		5.0		ug/Kg			10/03/13 13:31	1
Tetrachloroethene	ND		5.0		ug/Kg			10/03/13 13:31	1
Toluene	ND		5.0		ug/Kg			10/03/13 13:31	1
trans-1,2-Dichloroethene	ND		5.0		ug/Kg			10/03/13 13:31	1
trans-1,3-Dichloropropene	ND		5.0		ug/Kg			10/03/13 13:31	1
Trichloroethene	ND		5.0		ug/Kg			10/03/13 13:31	1
Trichlorofluoromethane	ND		5.0		ug/Kg			10/03/13 13:31	1
Vinyl chloride	ND		5.0		ug/Kg			10/03/13 13:31	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/Kg					10/03/13 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		64 - 128		10/03/13 13:31	1
Toluene-d8 (Surr)	99		71 - 125		10/03/13 13:31	1
4-Bromofluorobenzene (Surr)	98		72 - 126		10/03/13 13:31	1

Lab Sample ID: LCS 480-142541/5

Matrix: Solid

Analysis Batch: 142541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	50.0	47.7		ug/Kg		95	73 - 126
1,1-Dichloroethene	50.0	46.2		ug/Kg		92	59 - 125
1,2,4-Trimethylbenzene	50.0	49.0		ug/Kg		98	74 - 120
1,2-Dichlorobenzene	50.0	47.7		ug/Kg		95	75 - 120
1,2-Dichloroethane	50.0	47.2		ug/Kg		94	77 - 122
Benzene	50.0	44.9		ug/Kg		90	79 - 127
Chlorobenzene	50.0	44.7		ug/Kg		89	76 - 124
cis-1,2-Dichloroethene	50.0	46.6		ug/Kg		93	81 - 117
Ethylbenzene	50.0	48.4		ug/Kg		97	80 - 120

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-142541/5

Matrix: Solid

Analysis Batch: 142541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	50.0	47.1		ug/Kg		94	63 - 125
m,p-Xylene	100	95.7		ug/Kg		96	70 - 130
o-Xylene	50.0	48.5		ug/Kg		97	70 - 130
Tetrachloroethene	50.0	56.2		ug/Kg		112	74 - 122
Toluene	50.0	47.3		ug/Kg		95	74 - 128
trans-1,2-Dichloroethene	50.0	46.1		ug/Kg		92	78 - 126
Trichloroethene	50.0	46.8		ug/Kg		94	77 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 126
Toluene-d8 (Surr)	101		71 - 125
4-Bromofluorobenzene (Surr)	100		72 - 126

Lab Sample ID: LCSD 480-142541/6

Matrix: Solid

Analysis Batch: 142541

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethane	50.0	46.1		ug/Kg		92	73 - 126	3	20
1,1-Dichloroethene	50.0	43.7		ug/Kg		87	59 - 125	6	20
1,2,4-Trimethylbenzene	50.0	48.3		ug/Kg		97	74 - 120	1	20
1,2-Dichlorobenzene	50.0	47.5		ug/Kg		95	75 - 120	1	20
1,2-Dichloroethane	50.0	46.7		ug/Kg		93	77 - 122	1	20
Benzene	50.0	43.4		ug/Kg		87	79 - 127	3	20
Chlorobenzene	50.0	43.8		ug/Kg		88	76 - 124	2	20
cis-1,2-Dichloroethene	50.0	44.6		ug/Kg		89	81 - 117	4	20
Ethylbenzene	50.0	46.8		ug/Kg		94	80 - 120	3	20
Methyl tert-butyl ether	50.0	46.0		ug/Kg		92	63 - 125	2	20
m,p-Xylene	100	93.2		ug/Kg		93	70 - 130	3	20
o-Xylene	50.0	47.1		ug/Kg		94	70 - 130	3	20
Tetrachloroethene	50.0	55.1		ug/Kg		110	74 - 122	2	20
Toluene	50.0	46.1		ug/Kg		92	74 - 128	3	20
trans-1,2-Dichloroethene	50.0	43.9		ug/Kg		88	78 - 126	5	20
Trichloroethene	50.0	45.1		ug/Kg		90	77 - 129	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		64 - 126
Toluene-d8 (Surr)	100		71 - 125
4-Bromofluorobenzene (Surr)	102		72 - 126

Lab Sample ID: MB 480-142636/7

Matrix: Water

Analysis Batch: 142636

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 23:34	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/03/13 23:34	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/03/13 23:34	1

TestAmerica Buffalo

# QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142636/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 142636

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,2-Trichloroethane	ND		1.0		ug/L			10/03/13 23:34	1
1,1-Dichloroethane	ND		1.0		ug/L			10/03/13 23:34	1
1,1-Dichloroethene	ND		1.0		ug/L			10/03/13 23:34	1
1,1-Dichloropropene	ND		1.0		ug/L			10/03/13 23:34	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/03/13 23:34	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/03/13 23:34	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,2-Dichloroethane	ND		1.0		ug/L			10/03/13 23:34	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/13 23:34	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,3-Dichloropropane	ND		1.0		ug/L			10/03/13 23:34	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
2,2-Dichloropropane	ND		1.0		ug/L			10/03/13 23:34	1
2-Chlorotoluene	ND		1.0		ug/L			10/03/13 23:34	1
2-Hexanone	ND		5.0		ug/L			10/03/13 23:34	1
4-Chlorotoluene	ND		1.0		ug/L			10/03/13 23:34	1
4-Isopropyltoluene	ND		1.0		ug/L			10/03/13 23:34	1
Acetone	ND		10		ug/L			10/03/13 23:34	1
Benzene	ND		1.0		ug/L			10/03/13 23:34	1
Bromobenzene	ND		1.0		ug/L			10/03/13 23:34	1
Bromoform	ND		1.0		ug/L			10/03/13 23:34	1
Bromomethane	ND		1.0		ug/L			10/03/13 23:34	1
Carbon tetrachloride	ND		1.0		ug/L			10/03/13 23:34	1
Chlorobenzene	ND		1.0		ug/L			10/03/13 23:34	1
Bromochloromethane	ND		1.0		ug/L			10/03/13 23:34	1
Dibromochloromethane	ND		1.0		ug/L			10/03/13 23:34	1
Chloroethane	ND		1.0		ug/L			10/03/13 23:34	1
Chloroform	ND		1.0		ug/L			10/03/13 23:34	1
Chloromethane	ND		1.0		ug/L			10/03/13 23:34	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 23:34	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 23:34	1
Dibromomethane	ND		1.0		ug/L			10/03/13 23:34	1
Bromodichloromethane	ND		1.0		ug/L			10/03/13 23:34	1
Ethylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
1,2-Dibromoethane	ND		1.0		ug/L			10/03/13 23:34	1
Hexachlorobutadiene	ND		1.0		ug/L			10/03/13 23:34	1
Isopropylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
2-Butanone (MEK)	ND		10		ug/L			10/03/13 23:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/03/13 23:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/03/13 23:34	1
Methylene Chloride	ND		1.0		ug/L			10/03/13 23:34	1
m,p-Xylene	ND		2.0		ug/L			10/03/13 23:34	1
Naphthalene	ND		1.0		ug/L			10/03/13 23:34	1
n-Butylbenzene	ND		1.0		ug/L			10/03/13 23:34	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142636/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 142636

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
o-Xylene	ND		1.0		ug/L			10/03/13 23:34	1
sec-Butylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
Styrene	ND		1.0		ug/L			10/03/13 23:34	1
tert-Butylbenzene	ND		1.0		ug/L			10/03/13 23:34	1
Tetrachloroethene	ND		1.0		ug/L			10/03/13 23:34	1
Toluene	ND		1.0		ug/L			10/03/13 23:34	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/03/13 23:34	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/03/13 23:34	1
Trichloroethene	ND		1.0		ug/L			10/03/13 23:34	1
Trichlorofluoromethane	ND		1.0		ug/L			10/03/13 23:34	1
Vinyl chloride	ND		1.0		ug/L			10/03/13 23:34	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					10/03/13 23:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		66 - 137		10/03/13 23:34	1
Toluene-d8 (Surr)	96		71 - 126		10/03/13 23:34	1
4-Bromofluorobenzene (Surr)	101		73 - 120		10/03/13 23:34	1

Lab Sample ID: LCS 480-142636/5

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 142636

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	25.7		ug/L		103	71 - 129
1,1-Dichloroethene	25.0	26.1		ug/L		104	58 - 121
1,2,4-Trimethylbenzene	25.0	25.8		ug/L		103	76 - 121
1,2-Dichlorobenzene	25.0	25.0		ug/L		100	80 - 124
1,2-Dichloroethane	25.0	27.5		ug/L		110	75 - 127
Benzene	25.0	25.6		ug/L		102	71 - 124
Chlorobenzene	25.0	24.7		ug/L		99	72 - 120
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	74 - 124
Ethylbenzene	25.0	25.7		ug/L		103	77 - 123
Methyl tert-butyl ether	25.0	26.9		ug/L		108	64 - 127
m,p-Xylene	50.0	51.1		ug/L		102	76 - 122
o-Xylene	25.0	25.6		ug/L		102	76 - 122
Tetrachloroethene	25.0	29.2		ug/L		117	74 - 122
Toluene	25.0	24.8		ug/L		99	80 - 122
trans-1,2-Dichloroethene	25.0	24.3		ug/L		97	73 - 127
Trichloroethene	25.0	25.3		ug/L		101	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		66 - 137
Toluene-d8 (Surr)	99		71 - 126
4-Bromofluorobenzene (Surr)	105		73 - 120

TestAmerica Buffalo

# QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

## Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142723/7

Matrix: Water

Analysis Batch: 142723

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,1,2,2-Tetrachloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,1-Dichloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,1-Dichloroethene	ND		1.0		ug/L			10/04/13 12:49	1
1,1-Dichloropropene	ND		1.0		ug/L			10/04/13 12:49	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/04/13 12:49	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,2,4 Trimethylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,2-Dibromo-3-Chloropropane	ND		1.0		ug/L			10/04/13 12:49	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,2-Dichloroethane	ND		1.0		ug/L			10/04/13 12:49	1
1,2-Dichloropropane	ND		1.0		ug/L			10/04/13 12:49	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,3-Dichloropropane	ND		1.0		ug/L			10/04/13 12:49	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
2,2-Dichloropropane	ND		1.0		ug/L			10/04/13 12:49	1
2-Chlorotoluene	ND		1.0		ug/L			10/04/13 12:49	1
2-Hexanone	ND		5.0		ug/L			10/04/13 12:49	1
4-Chlorotoluene	ND		1.0		ug/L			10/04/13 12:49	1
4-Isopropyltoluene	ND		1.0		ug/L			10/04/13 12:49	1
Acetone	ND		10		ug/L			10/04/13 12:49	1
Benzene	ND		1.0		ug/L			10/04/13 12:49	1
Bromobenzene	ND		1.0		ug/L			10/04/13 12:49	1
Bromoform	ND		1.0		ug/L			10/04/13 12:49	1
Bromomethane	ND		1.0		ug/L			10/04/13 12:49	1
Carbon tetrachloride	ND		1.0		ug/L			10/04/13 12:49	1
Chlorobenzene	ND		1.0		ug/L			10/04/13 12:49	1
Bromochloromethane	ND		1.0		ug/L			10/04/13 12:49	1
Dibromochloromethane	ND		1.0		ug/L			10/04/13 12:49	1
Chloroethane	ND		1.0		ug/L			10/04/13 12:49	1
Chloroform	ND		1.0		ug/L			10/04/13 12:49	1
Chloromethane	ND		1.0		ug/L			10/04/13 12:49	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 12:49	1
cis-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 12:49	1
Dibromomethane	ND		1.0		ug/L			10/04/13 12:49	1
Bromodichloromethane	ND		1.0		ug/L			10/04/13 12:49	1
Ethylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
1,2-Dibromoethane	ND		1.0		ug/L			10/04/13 12:49	1
Hexachlorobutadiene	ND		1.0		ug/L			10/04/13 12:49	1
Isopropylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
2-Butanone (MEK)	ND		10		ug/L			10/04/13 12:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0		ug/L			10/04/13 12:49	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/04/13 12:49	1
Methylene Chloride	ND		1.0		ug/L			10/04/13 12:49	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-142723/7

Matrix: Water

Analysis Batch: 142723

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		2.0		ug/L			10/04/13 12:49	1
Naphthalene	ND		1.0		ug/L			10/04/13 12:49	1
n-Butylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
N-Propylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
o-Xylene	ND		1.0		ug/L			10/04/13 12:49	1
sec-Butylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
Styrene	ND		1.0		ug/L			10/04/13 12:49	1
tert-Butylbenzene	ND		1.0		ug/L			10/04/13 12:49	1
Tetrachloroethene	ND		1.0		ug/L			10/04/13 12:49	1
Toluene	ND		1.0		ug/L			10/04/13 12:49	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/04/13 12:49	1
trans-1,3-Dichloropropene	ND		1.0		ug/L			10/04/13 12:49	1
Trichloroethene	ND		1.0		ug/L			10/04/13 12:49	1
Trichlorofluoromethane	ND		1.0		ug/L			10/04/13 12:49	1
Vinyl chloride	ND		1.0		ug/L			10/04/13 12:49	1

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					10/04/13 12:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		66 - 137		10/04/13 12:49	1
Toluene-d8 (Surr)	96		71 - 126		10/04/13 12:49	1
4-Bromofluorobenzene (Surr)	101		73 - 120		10/04/13 12:49	1

Lab Sample ID: LCS 480-142723/5

Matrix: Water

Analysis Batch: 142723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	26.2		ug/L		105	71 - 129
1,1-Dichloroethene	25.0	25.9		ug/L		104	58 - 121
1,2,4-Trimethylbenzene	25.0	26.1		ug/L		104	76 - 121
1,2-Dichlorobenzene	25.0	26.0		ug/L		104	80 - 124
1,2-Dichloroethane	25.0	28.3		ug/L		113	75 - 127
Benzene	25.0	26.4		ug/L		106	71 - 124
Chlorobenzene	25.0	25.3		ug/L		101	72 - 120
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	74 - 124
Ethylbenzene	25.0	28.6		ug/L		106	77 - 123
Methyl tert-butyl ether	25.0	28.5		ug/L		114	64 - 127
m,p-Xylene	50.0	53.2		ug/L		106	76 - 122
o-Xylene	25.0	26.5		ug/L		106	76 - 122
Tetrachloroethene	25.0	29.8		ug/L		118	74 - 122
Toluene	25.0	25.9		ug/L		104	80 - 122
trans-1,2-Dichloroethene	25.0	25.8		ug/L		102	73 - 127
Trichloroethene	25.0	26.8		ug/L		107	74 - 123

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-142723/5

Matrix: Water

Analysis Batch: 142723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		66 - 137
Toluene-d8 (Surr)	96		71 - 126
4-Bromofluorobenzene (Surr)	110		73 - 120

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-142226/5

Matrix: Water

Analysis Batch: 142226

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	ND		1.6		ug/L			10/02/13 10:24	1
Surrogate	MB MB		Limits			Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier								
TBA-d9 (Surr)	95		50 - 150				10/02/13 10:24	1	
Dibromofluoromethane (Surr)	98		50 - 150				10/02/13 10:24	1	

Lab Sample ID: LCS 480-142226/4

Matrix: Water

Analysis Batch: 142226

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,4-Dioxane	16.0	20.3		ug/L		127	50 - 150
Surrogate	LCS LCS		Limits				
%Recovery	Qualifier						
TBA-d9 (Surr)	92		50 - 150				
Dibromofluoromethane (Surr)	104		50 - 150				

### Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-142293/1-A

Matrix: Solid

Analysis Batch: 142470

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 142293

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		1.9		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Barium	ND		0.48		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Cadmium	ND		0.19		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Calcium	ND		48		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Chromium	ND		0.48		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Copper	ND		0.97		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Iron	ND		9.7		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Lead	ND		0.97		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Selenium	ND		3.9		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Silver	ND		0.48		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Sodium	ND		140		mg/Kg		10/02/13 12:30	10/02/13 23:43	1
Zinc	ND		1.9		mg/Kg		10/02/13 12:30	10/02/13 23:43	1

TestAmerica Buffalo

# QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

## Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-142293/1-A**  
**Matrix: Solid**  
**Analysis Batch: 142747**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 142293**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Manganese	ND		0.19		mg/Kg		10/02/13 12:30	10/03/13 21:08	1

**Lab Sample ID: LCSSRM 480-142293/2-A**  
**Matrix: Solid**  
**Analysis Batch: 142470**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 142293**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Arsenic	182	168		mg/Kg		92.1	70.9 - 129.7	
Barium	143	128		mg/Kg		89.5	72.7 - 128.0	
Cadmium	60.4	54.9		mg/Kg		90.8	73.2 - 129.3	
Calcium	6040	5290		mg/Kg		87.5	73.7 - 126.2	
Chromium	125	111		mg/Kg		89.0	69.8 - 129.6	
Copper	80.1	73.4		mg/Kg		91.6	73.7 - 129.8	
Iron	12900	8850		mg/Kg		68.6	32.3 - 168.2	
Lead	136	128		mg/Kg		94.2	73.1 - 127.2	
Selenium	85.9	79.6		mg/Kg		92.7	63.9 - 136.2	
Silver	61.3	54.4		mg/Kg		88.8	66.9 - 133.1	
Sodium	439	391		mg/Kg		89.1	48.3 - 151.7	
Zinc	204	183		mg/Kg		89.6	69.6 - 129.9	

**Lab Sample ID: LCSSRM 480-142293/2-A**  
**Matrix: Solid**  
**Analysis Batch: 142747**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 142293**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Manganese	279	240		mg/Kg		86.2	74.2 - 126.2	

**Lab Sample ID: MB 480-142091/1-B**  
**Matrix: Water**  
**Analysis Batch: 142462**

**Client Sample ID: Method Blank**  
**Prep Type: Dissolved**  
**Prep Batch: 142205**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.010		mg/L		10/02/13 08:35	10/02/13 16:37	1
Barium	ND		0.0020		mg/L		10/02/13 08:35	10/02/13 16:37	1
Cadmium	ND		0.0010		mg/L		10/02/13 08:35	10/02/13 16:37	1
Calcium	ND		0.50		mg/L		10/02/13 08:35	10/02/13 16:37	1
Chromium	ND		0.0040		mg/L		10/02/13 08:35	10/02/13 16:37	1
Copper	ND		0.010		mg/L		10/02/13 08:35	10/02/13 16:37	1
Iron	ND		0.050		mg/L		10/02/13 08:35	10/02/13 16:37	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: MB 480-142091/1-B**

**Matrix: Water**

**Analysis Batch: 142462**

**Client Sample ID: Method Blank**

**Prep Type: Dissolved**

**Prep Batch: 142205**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0050		mg/L		10/02/13 08:35	10/02/13 16:37	1
Manganese	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 16:37	1
Selenium	ND		0.015		mg/L		10/02/13 08:35	10/02/13 16:37	1
Silver	ND		0.0030		mg/L		10/02/13 08:35	10/02/13 16:37	1
Sodium	ND		1.0		mg/L		10/02/13 08:35	10/02/13 16:37	1
Zinc	ND		0.010		mg/L		10/02/13 08:35	10/02/13 16:37	1

**Lab Sample ID: LCS 480-142091/2-B**

**Matrix: Water**

**Analysis Batch: 142462**

**Client Sample ID: Lab Control Sample**

**Prep Type: Dissolved**

**Prep Batch: 142205**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.198		mg/L		99	80 - 120
Barium	0.200	0.210		mg/L		105	80 - 120
Cadmium	0.200	0.196		mg/L		98	80 - 120
Calcium	10.0	9.75		mg/L		97	80 - 120
Chromium	0.200	0.200		mg/L		100	80 - 120
Copper	0.200	0.197		mg/L		99	80 - 120
Iron	10.0	9.76		mg/L		98	80 - 120
Lead	0.200	0.192		mg/L		96	80 - 120
Manganese	0.200	0.199		mg/L		100	80 - 120
Selenium	0.200	0.198		mg/L		99	80 - 120
Silver	0.0500	0.0498		mg/L		100	80 - 120
Sodium	10.0	9.93		mg/L		99	80 - 120
Zinc	0.200	0.195		mg/L		97	80 - 120

**Lab Sample ID: 480-46836-1 MS**

**Matrix: Water**

**Analysis Batch: 142462**

**Client Sample ID: MW-1**

**Prep Type: Dissolved**

**Prep Batch: 142205**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		0.200	0.204		mg/L		102	75 - 125
Barium	0.019		0.200	0.229		mg/L		105	75 - 125
Cadmium	ND		0.200	0.198		mg/L		99	75 - 125
Calcium	5.8		10.0	15.8		mg/L		100	75 - 125
Chromium	ND		0.200	0.203		mg/L		100	75 - 125
Copper	ND		0.200	0.203		mg/L		99	75 - 125
Iron	9.5		10.0	19.3		mg/L		98	75 - 125
Lead	ND		0.200	0.193		mg/L		96	75 - 125
Manganese	0.50		0.200	0.719		mg/L		107	75 - 125
Selenium	ND		0.200	0.201		mg/L		100	75 - 125
Silver	ND		0.0500	0.0498		mg/L		100	75 - 125
Sodium	12		10.0	22.4		mg/L		101	75 - 125
Zinc	0.018		0.200	0.213		mg/L		98	75 - 125

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 6010C - Metals (ICP) (Continued)

**Lab Sample ID: 480-46836-1 MSD**

**Matrix: Water**

**Analysis Batch: 142462**

**Client Sample ID: MW-1**

**Prep Type: Dissolved**

**Prep Batch: 142205**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit
Arsenic	ND		0.200	0.207		mg/L		104	75 - 125	2	20
Barium	0.019		0.200	0.232		mg/L		108	75 - 125	1	20
Cadmium	ND		0.200	0.203		mg/L		102	75 - 125	2	20
Calcium	5.8		10.0	16.0		mg/L		102	75 - 125	1	20
Chromium	ND		0.200	0.208		mg/L		102	75 - 125	2	20
Copper	ND		0.200	0.207		mg/L		102	75 - 125	2	20
Iron	9.5		10.0	19.5		mg/L		100	75 - 125	1	20
Lead	ND		0.200	0.197		mg/L		99	75 - 125	2	20
Manganese	0.50		0.200	0.713		mg/L		104	75 - 125	1	20
Selenium	ND		0.200	0.205		mg/L		102	75 - 125	2	20
Silver	ND		0.0500	0.0505		mg/L		101	75 - 125	1	20
Sodium	12		10.0	22.5		mg/L		102	75 - 125	1	20
Zinc	0.018		0.200	0.219		mg/L		101	75 - 125	3	20

### Method: 6020A - Metals (ICP/MS)

**Lab Sample ID: MB 480-142091/11-B**

**Matrix: Water**

**Analysis Batch: 142585**

**Client Sample ID: Method Blank**

**Prep Type: Dissolved**

**Prep Batch: 142250**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		1.0		ug/L		10/02/13 11:55	10/02/13 20:40	1
Barium	ND		1.0		ug/L		10/02/13 11:55	10/02/13 20:40	1
Cadmium	ND		0.50		ug/L		10/02/13 11:55	10/02/13 20:40	1
Chromium	ND		1.5		ug/L		10/02/13 11:55	10/02/13 20:40	1
Copper	ND		1.0		ug/L		10/02/13 11:55	10/02/13 20:40	1
Lead	ND		1.0		ug/L		10/02/13 11:55	10/02/13 20:40	1
Silver	ND		0.50		ug/L		10/02/13 11:55	10/02/13 20:40	1

**Lab Sample ID: MB 480-142091/11-B**

**Matrix: Water**

**Analysis Batch: 142856**

**Client Sample ID: Method Blank**

**Prep Type: Dissolved**

**Prep Batch: 142250**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Selenium	ND		1.0		ug/L		10/02/13 11:55	10/03/13 19:11	1
Zinc	ND		10		ug/L		10/02/13 11:55	10/03/13 19:11	1

**Lab Sample ID: LCS 480-142091/12-B**

**Matrix: Water**

**Analysis Batch: 142585**

**Client Sample ID: Lab Control Sample**

**Prep Type: Dissolved**

**Prep Batch: 142250**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
Arsenic	20.0	20.6		ug/L		103	80 - 120
Barium	20.0	20.3		ug/L		101	80 - 120
Cadmium	20.0	20.3		ug/L		101	80 - 120
Chromium	20.0	21.1		ug/L		106	80 - 120
Copper	20.0	20.9		ug/L		104	80 - 120
Lead	20.0	20.4		ug/L		102	80 - 120

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 480-142091/12-B

Matrix: Water

Analysis Batch: 142585

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 142250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Silver	20.0	18.3		ug/L		91	80 - 120

Lab Sample ID: LCS 480-142091/12-B

Matrix: Water

Analysis Batch: 142856

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 142250

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Selenium	20.0	20.3		ug/L		101	80 - 120
Zinc	50.0	54.3		ug/L		109	80 - 120

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-142091/7-B

Matrix: Water

Analysis Batch: 142352

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 142231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		10/02/13 08:50	10/02/13 14:30	1

Lab Sample ID: LCS 480-142091/8-B

Matrix: Water

Analysis Batch: 142352

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 142231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.0133	0.0121		mg/L		91	80 - 120

Lab Sample ID: 480-46836-2 MS

Matrix: Water

Analysis Batch: 142352

Client Sample ID: MW-3

Prep Type: Dissolved

Prep Batch: 142231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	ND		0.0133	0.0120		mg/L		90	75 - 125

Lab Sample ID: 480-46836-2 MSD

Matrix: Water

Analysis Batch: 142352

Client Sample ID: MW-3

Prep Type: Dissolved

Prep Batch: 142231

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	ND		0.0133	0.0119		mg/L		89	75 - 125	1	20

### Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)

Lab Sample ID: MB 480-142286/1-A

Matrix: Solid

Analysis Batch: 142338

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 142286

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.019		mg/Kg		10/02/13 11:00	10/02/13 14:07	1

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 7471B - Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) (Continued)

Lab Sample ID: LCSSRM 480-142286/2-A

Matrix: Solid

Analysis Batch: 142338

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 142286

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	
							50.9	149.1
Mercury	3.77	3.46		mg/Kg		91.8	50.9 - 149.1	

### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-142313/4

Matrix: Water

Analysis Batch: 142313

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50		mg/L			10/02/13 15:09	1
Sulfate	ND		2.0		mg/L			10/02/13 15:09	1

Lab Sample ID: LCS 480-142313/3

Matrix: Water

Analysis Batch: 142313

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							90	110
Chloride	20.0	19.8		mg/L		99	90 - 110	
Sulfate	20.0	20.2		mg/L		101	90 - 110	

Lab Sample ID: MB 480-142536/4

Matrix: Water

Analysis Batch: 142536

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50		mg/L			10/03/13 13:16	1
Sulfate	ND		2.0		mg/L			10/03/13 13:16	1

Lab Sample ID: LCS 480-142536/3

Matrix: Water

Analysis Batch: 142536

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
							90	110
Chloride	20.0	19.8		mg/L		99	90 - 110	
Sulfate	20.0	19.9		mg/L		99	90 - 110	

Lab Sample ID: 480-46836-2 MS

Matrix: Water

Analysis Batch: 142536

Client Sample ID: MW-3

Prep Type: Total/NA

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits	
	Result	Qualifier		Result	Qualifier				90	110
Chloride	8.8		25.0	33.5		mg/L		99	90 - 110	
Sulfate	15		25.0	39.6		mg/L		99	90 - 110	

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TeslAmerica Job ID: 480-46836-1

### Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 480-142549/28**

**Matrix: Water**

**Analysis Batch: 142549**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50		mg/L			10/03/13 17:19	1
Sulfate	ND		2.0		mg/L			10/03/13 17:19	1

**Lab Sample ID: LCS 480-142549/27**

**Matrix: Water**

**Analysis Batch: 142549**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	20.5		mg/L		102	90 - 110

**Lab Sample ID: MB 480-142790/4**

**Matrix: Water**

**Analysis Batch: 142790**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	ND		0.50		mg/L			10/04/13 12:19	1
Sulfate	ND		2.0		mg/L			10/04/13 12:19	1

**Lab Sample ID: LCS 480-142790/3**

**Matrix: Water**

**Analysis Batch: 142790**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	18.5		mg/L		93	90 - 110

### Method: 410.4 - COD

**Lab Sample ID: MB 480-142560/27**

**Matrix: Water**

**Analysis Batch: 142560**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1

**Lab Sample ID: MB 480-142560/51**

**Matrix: Water**

**Analysis Batch: 142560**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 11:55	1

**Lab Sample ID: LCS 480-142560/28**

**Matrix: Water**

**Analysis Batch: 142560**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

TeslAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 410.4 - COD (Continued)

**Lab Sample ID: LCS 480-142560/52**

**Matrix: Water**

**Analysis Batch: 142560**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	27.2		mg/L		109	90 - 110

**Lab Sample ID: MB 480-142660/3**

**Matrix: Water**

**Analysis Batch: 142660**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 19:10	1

**Lab Sample ID: MB 480-142660/51**

**Matrix: Water**

**Analysis Batch: 142660**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/03/13 19:10	1

**Lab Sample ID: LCS 480-142660/4**

**Matrix: Water**

**Analysis Batch: 142660**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	25.4		mg/L		101	90 - 110

**Lab Sample ID: LCS 480-142660/52**

**Matrix: Water**

**Analysis Batch: 142660**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	26.9		mg/L		108	90 - 110

**Lab Sample ID: MB 480-143003/27**

**Matrix: Water**

**Analysis Batch: 143003**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/05/13 12:40	1

**Lab Sample ID: MB 480-143003/51**

**Matrix: Water**

**Analysis Batch: 143003**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	ND		10		mg/L			10/05/13 12:40	1

**Lab Sample ID: LCS 480-143003/28**

**Matrix: Water**

**Analysis Batch: 143003**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	27.2		mg/L		109	90 - 110

TestAmerica Buffalo

## QC Sample Results

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Lab Sample ID: LCS 480-143003/52**  
**Matrix: Water**  
**Analysis Batch: 143003**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chemical Oxygen Demand	25.0	24.1		mg/L		96	90 - 110

### Method: 9012 - Cyanide, Physiologically Available

**Lab Sample ID: MB 480-142687/4-A**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Physiologically Available Cyanide	ND		0.010		mg/L		10/04/13 06:08	10/04/13 12:22	1

**Lab Sample ID: LCS 480-142687/1-A**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Physiologically Available Cyanide	0.250	0.277		mg/L		111	80 - 120

**Lab Sample ID: LCSD 480-142687/2-A**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Physiologically Available Cyanide	0.250	0.259		mg/L		104	80 - 120	7	20

**Lab Sample ID: LCSN 480-142687/3-A**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	Spike Added	LCSN Result	LCSN Qualifier	Unit	D	%Rec	%Rec. Limits
Physiologically Available Cyanide	2.18	0.0264		mg/L		1	0 - 10

**Lab Sample ID: 480-46836-2 MS**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: MW-3**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Physiologically Available Cyanide	ND		0.100	0.101		mg/L		101	75 - 125

**Lab Sample ID: 480-46836-9 MS**  
**Matrix: Water**  
**Analysis Batch: 142908**

**Client Sample ID: SW-3**  
**Prep Type: Total/NA**  
**Prep Batch: 142687**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Physiologically Available Cyanide	ND		0.100	0.108		mg/L		108	75 - 125

## QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: 9012 - Cyanide, Physiologically Available (Continued)

Lab Sample ID: 480-46836-1 DU  
 Matrix: Water  
 Analysis Batch: 142908

Client Sample ID: MW-1  
 Prep Type: Total/NA  
 Prep Batch: 142687

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Physiologically Available Cyanide	ND		ND		mg/L		NC	

### Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-142170/30  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity, Total	ND		5.0		mg/L			10/01/13 17:38	1

Lab Sample ID: MB 480-142170/6  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Alkalinity, Total	ND		5.0		mg/L			10/01/13 14:38	1

Lab Sample ID: LCS 480-142170/31  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LCS 480-142170/7  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 480-46836-2 MS  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: MW-3  
 Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Alkalinity, Total	67		100	155		mg/L		88	42 - 116

Lab Sample ID: 480-46836-1 DU  
 Matrix: Water  
 Analysis Batch: 142170

Client Sample ID: MW-1  
 Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity, Total	29		29.7		mg/L		2	20

## QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 480-142420/6  
 Matrix: Water  
 Analysis Batch: 142420

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity, Total	ND		5.0		mg/L			10/02/13 15:29	1

Lab Sample ID: LCS 480-142420/7  
 Matrix: Water  
 Analysis Batch: 142420

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity, Total	100	94.8		mg/L		95	90 - 110

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-142142/1  
 Matrix: Water  
 Analysis Batch: 142142

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/01/13 16:58	1

Lab Sample ID: LCS 480-142142/2  
 Matrix: Water  
 Analysis Batch: 142142

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	501	487		mg/L		97	85 - 115

Lab Sample ID: LCSD 480-142142/3  
 Matrix: Water  
 Analysis Batch: 142142

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	501	487		mg/L		97	85 - 115	0	20

Lab Sample ID: MB 480-142143/1  
 Matrix: Water  
 Analysis Batch: 142143

Client Sample ID: Method Blank  
 Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/01/13 17:47	1

Lab Sample ID: LCS 480-142143/2  
 Matrix: Water  
 Analysis Batch: 142143

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	501	483		mg/L		92	85 - 115

## QC Sample Results

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

**Lab Sample ID: 480-46836-9 DU**  
**Matrix: Water**  
**Analysis Batch: 142143**

**Client Sample ID: SW-3**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	170		174		mg/L		0	20

**Lab Sample ID: MB 480-142400/1**  
**Matrix: Water**  
**Analysis Batch: 142400**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10		mg/L			10/02/13 23:03	1

**Lab Sample ID: LCS 480-142400/2**  
**Matrix: Water**  
**Analysis Batch: 142400**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	501	505		mg/L		101	85 - 115

## QC Association Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### GC/MS VOA

#### Analysis Batch: 142226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	8260C SIM	
480-46836-2	MW-3	Total/NA	Water	8260C SIM	
480-46836-3	MW-4S	Total/NA	Water	8260C SIM	
480-46836-4	MW-4D	Total/NA	Water	8260C SIM	
480-46836-5	MW-6S	Total/NA	Water	8260C SIM	
480-46836-6	MW-6D	Total/NA	Water	8260C SIM	
480-46836-7	DUP-1	Total/NA	Water	8260C SIM	
480-46836-8	SW-2	Total/NA	Water	8260C SIM	
480-46836-9	SW-3	Total/NA	Water	8260C SIM	
LCS 480-142226/4	Lab Control Sample	Total/NA	Water	8260C SIM	
MB 480-142226/5	Method Blank	Total/NA	Water	8260C SIM	

#### Analysis Batch: 142444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	8260C	
480-46836-2	MW-3	Total/NA	Water	8260C	
480-46836-3	MW-4S	Total/NA	Water	8260C	
480-46836-4	MW-4D	Total/NA	Water	8260C	
480-46836-5	MW-6S	Total/NA	Water	8260C	
480-46836-6	MW-6D	Total/NA	Water	8260C	
480-46836-7	DUP-1	Total/NA	Water	8260C	
480-46836-8	SW-2	Total/NA	Water	8260C	
LCS 480-142444/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-142444/8	Method Blank	Total/NA	Water	8260C	

#### Analysis Batch: 142541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	8260C	142545
480-46836-11	SED-3	Total/NA	Solid	8260C	142545
LCS 480-142541/5	Lab Control Sample	Total/NA	Solid	8260C	
LCSD 480-142541/6	Lab Control Sample Dup	Total/NA	Solid	8260C	
MB 480-142541/7	Method Blank	Total/NA	Solid	8260C	

#### Prep Batch: 142545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	5035	
480-46836-11	SED-3	Total/NA	Solid	5035	

#### Analysis Batch: 142636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-9	SW-3	Total/NA	Water	8260C	
LCS 480-142636/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-142636/7	Method Blank	Total/NA	Water	8260C	

#### Analysis Batch: 142723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-12	TRIP BLANK	Total/NA	Water	8260C	
LCS 480-142723/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-142723/7	Method Blank	Total/NA	Water	8260C	

## QC Association Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Metals

#### Filtration Batch: 142091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-142091/12-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 480-142091/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 480-142091/8-B	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 480-142091/11-B	Method Blank	Dissolved	Water	FILTRATION	
MB 480-142091/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 480-142091/7-B	Method Blank	Dissolved	Water	FILTRATION	

#### Prep Batch: 142205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Dissolved	Water	3005A	
480-46836-1 MS	MW-1	Dissolved	Water	3005A	
480-46836-1 MSD	MW-1	Dissolved	Water	3005A	
480-46836-2	MW-3	Dissolved	Water	3005A	
480-46836-3	MW-4S	Dissolved	Water	3005A	
480-46836-4	MW-4D	Dissolved	Water	3005A	
480-46836-5	MW-6S	Dissolved	Water	3005A	
480-46836-6	MW-6D	Dissolved	Water	3005A	
480-46836-7	DUP-1	Dissolved	Water	3005A	
480-46836-8	SW-2	Dissolved	Water	3005A	
480-46836-9	SW-3	Dissolved	Water	3005A	
LCS 480-142091/2-B	Lab Control Sample	Dissolved	Water	3005A	142091
MB 480-142091/1-B	Method Blank	Dissolved	Water	3005A	142091

#### Prep Batch: 142231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Dissolved	Water	7470A	
480-46836-2	MW-3	Dissolved	Water	7470A	
480-46836-2 MS	MW-3	Dissolved	Water	7470A	
480-46836-2 MSD	MW-3	Dissolved	Water	7470A	
480-46836-3	MW-4S	Dissolved	Water	7470A	
480-46836-4	MW-4D	Dissolved	Water	7470A	
480-46836-5	MW-6S	Dissolved	Water	7470A	
480-46836-6	MW-6D	Dissolved	Water	7470A	
480-46836-7	DUP-1	Dissolved	Water	7470A	
480-46836-8	SW-2	Dissolved	Water	7470A	
480-46836-9	SW-3	Dissolved	Water	7470A	
LCS 480-142091/8-B	Lab Control Sample	Dissolved	Water	7470A	142091
MB 480-142091/7-B	Method Blank	Dissolved	Water	7470A	142091

#### Prep Batch: 142250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-8	SW-2	Dissolved	Water	3020A	
480-46836-9	SW-3	Dissolved	Water	3020A	
LCS 480-142091/12-B	Lab Control Sample	Dissolved	Water	3020A	142091
MB 480-142091/11-B	Method Blank	Dissolved	Water	3020A	142091

#### Prep Batch: 142286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	7471B	
480-46836-11	SED-3	Total/NA	Solid	7471B	
LCSSRM 480-142286/2-A	Lab Control Sample	Total/NA	Solid	7471B	

TestAmerica Buffalo

## QC Association Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Metals (Continued)

#### Prep Batch: 142286 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-142286/1-A	Method Blank	Total/NA	Solid	7471B	

#### Prep Batch: 142293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	3050B	
480-46836-11	SED-3	Total/NA	Solid	3050B	
LCSSRM 480-142293/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 480-142293/1-A	Method Blank	Total/NA	Solid	3050B	

#### Analysis Batch: 142338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	7471B	142286
480-46836-11	SED-3	Total/NA	Solid	7471B	142286
LCSSRM 480-142286/2-A	Lab Control Sample	Total/NA	Solid	7471B	142286
MB 480-142286/1-A	Method Blank	Total/NA	Solid	7471B	142286

#### Analysis Batch: 142352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Dissolved	Water	7470A	142231
480-46836-2	MW-3	Dissolved	Water	7470A	142231
480-46836-2 MS	MW-3	Dissolved	Water	7470A	142231
480-46836-2 MSD	MW-3	Dissolved	Water	7470A	142231
480-46836-3	MW-4S	Dissolved	Water	7470A	142231
480-46836-4	MW-4D	Dissolved	Water	7470A	142231
480-46836-5	MW-6S	Dissolved	Water	7470A	142231
480-46836-6	MW-6D	Dissolved	Water	7470A	142231
480-46836-7	DUP-1	Dissolved	Water	7470A	142231
480-46836-8	SW-2	Dissolved	Water	7470A	142231
480-46836-9	SW-3	Dissolved	Water	7470A	142231
LCS 480-142091/8-B	Lab Control Sample	Dissolved	Water	7470A	142231
MB 480-142091/7-B	Method Blank	Dissolved	Water	7470A	142231

#### Analysis Batch: 142462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Dissolved	Water	6010C	142205
480-46836-1 MS	MW-1	Dissolved	Water	6010C	142205
480-46836-1 MSD	MW-1	Dissolved	Water	6010C	142205
480-46836-2	MW-3	Dissolved	Water	6010C	142205
480-46836-3	MW-4S	Dissolved	Water	6010C	142205
480-46836-4	MW-4D	Dissolved	Water	6010C	142205
480-46836-5	MW-6S	Dissolved	Water	6010C	142205
480-46836-6	MW-6D	Dissolved	Water	6010C	142205
480-46836-7	DUP-1	Dissolved	Water	6010C	142205
480-46836-8	SW-2	Dissolved	Water	6010C	142205
480-46836-9	SW-3	Dissolved	Water	6010C	142205
LCS 480-142091/2-B	Lab Control Sample	Dissolved	Water	6010C	142205
MB 480-142091/1-B	Method Blank	Dissolved	Water	6010C	142205

#### Analysis Batch: 142470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	6010C	142293

TestAmerica Buffalo

## QC Association Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Metals (Continued)

#### Analysis Batch: 142470 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-11	SED-3	Total/NA	Solid	6010C	142293
LCSSRM 480-142293/2-A	Lab Control Sample	Total/NA	Solid	6010C	142293
MB 480-142293/1-A	Method Blank	Total/NA	Solid	6010C	142293

#### Analysis Batch: 142585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-8	SW-2	Dissolved	Water	6020A	142250
480-46836-9	SW-3	Dissolved	Water	6020A	142250
LCS 480-142091/12-B	Lab Control Sample	Dissolved	Water	6020A	142250
MB 480-142091/11-B	Method Blank	Dissolved	Water	6020A	142250

#### Analysis Batch: 142747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	6010C	142293
480-46836-11	SED-3	Total/NA	Solid	6010C	142293
LCSSRM 480-142293/2-A	Lab Control Sample	Total/NA	Solid	6010C	142293
MB 480-142293/1-A	Method Blank	Total/NA	Solid	6010C	142293

#### Analysis Batch: 142856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-8	SW-2	Dissolved	Water	6020A	142250
480-46836-9	SW-3	Dissolved	Water	6020A	142250
LCS 480-142091/12-B	Lab Control Sample	Dissolved	Water	6020A	142250
MB 480-142091/11-B	Method Blank	Dissolved	Water	6020A	142250

### General Chemistry

#### Analysis Batch: 142142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	SM 2540C	
480-46836-2	MW-3	Total/NA	Water	SM 2540C	
480-46836-3	MW-4S	Total/NA	Water	SM 2540C	
480-46836-4	MW-4D	Total/NA	Water	SM 2540C	
480-46836-6	MW-6D	Total/NA	Water	SM 2540C	
480-46836-7	DUP-1	Total/NA	Water	SM 2540C	
480-46836-8	SW-2	Total/NA	Water	SM 2540C	
LCS 480-142142/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 480-142142/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
MB 480-142142/1	Method Blank	Total/NA	Water	SM 2540C	

#### Analysis Batch: 142143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-9	SW-3	Total/NA	Water	SM 2540C	
480-46836-9 DU	SW-3	Total/NA	Water	SM 2540C	
LCS 480-142143/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 480-142143/1	Method Blank	Total/NA	Water	SM 2540C	

#### Analysis Batch: 142160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-10	SED-1	Total/NA	Solid	Moisture	

TestAmerica Buffalo

## QC Association Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### General Chemistry (Continued)

#### Analysis Batch: 142160 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-11	SED-3	Total/NA	Solid	Moisture	

#### Analysis Batch: 142170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	SM 2320B	
480-46836-1 DU	MW-1	Total/NA	Water	SM 2320B	
480-46836-2	MW-3	Total/NA	Water	SM 2320B	
480-46836-2 MS	MW-3	Total/NA	Water	SM 2320B	
480-46836-3	MW-4S	Total/NA	Water	SM 2320B	
480-46836-4	MW-4D	Total/NA	Water	SM 2320B	
LCS 480-142170/31	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-142170/7	Lab Control Sample	Total/NA	Water	SM 2320B	
MB 480-142170/30	Method Blank	Total/NA	Water	SM 2320B	
MB 480-142170/6	Method Blank	Total/NA	Water	SM 2320B	

#### Analysis Batch: 142313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	300.0	
480-46836-2	MW-3	Total/NA	Water	300.0	
480-46836-3	MW-4S	Total/NA	Water	300.0	
480-46836-4	MW-4D	Total/NA	Water	300.0	
LCS 480-142313/3	Lab Control Sample	Total/NA	Water	300.0	
MB 480-142313/4	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 142354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	353.2	
480-46836-2	MW-3	Total/NA	Water	353.2	
480-46836-3	MW-4S	Total/NA	Water	353.2	
480-46836-4	MW-4D	Total/NA	Water	353.2	
480-46836-5	MW-6S	Total/NA	Water	353.2	
480-46836-6	MW-6D	Total/NA	Water	353.2	
480-46836-7	DUP-1	Total/NA	Water	353.2	
480-46836-8	SW-2	Total/NA	Water	353.2	
480-46836-9	SW-3	Total/NA	Water	353.2	

#### Analysis Batch: 142400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-5	MW-6S	Total/NA	Water	SM 2540C	
LCS 480-142400/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 480-142400/1	Method Blank	Total/NA	Water	SM 2540C	

#### Analysis Batch: 142420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-5	MW-6S	Total/NA	Water	SM 2320B	
480-46836-6	MW-6D	Total/NA	Water	SM 2320B	
480-46836-7	DUP-1	Total/NA	Water	SM 2320B	
480-46836-8	SW-2	Total/NA	Water	SM 2320B	
480-46836-9	SW-3	Total/NA	Water	SM 2320B	
LCS 480-142420/7	Lab Control Sample	Total/NA	Water	SM 2320B	
MB 480-142420/6	Method Blank	Total/NA	Water	SM 2320B	

TestAmerica Buffalo

## QC Association Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### General Chemistry (Continued)

#### Analysis Batch: 142536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	300.0	
480-46836-2	MW-3	Total/NA	Water	300.0	
480-46836-2 MS	MW-3	Total/NA	Water	300.0	
480-46836-3	MW-4S	Total/NA	Water	300.0	
480-46836-4	MW-4D	Total/NA	Water	300.0	
LCS 480-142536/3	Lab Control Sample	Total/NA	Water	300.0	
MB 480-142536/4	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 142549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-5	MW-6S	Total/NA	Water	300.0	
480-46836-6	MW-6D	Total/NA	Water	300.0	
480-46836-7	DUP-1	Total/NA	Water	300.0	
480-46836-8	SW-2	Total/NA	Water	300.0	
480-46836-9	SW-3	Total/NA	Water	300.0	
LCS 480-142549/27	Lab Control Sample	Total/NA	Water	300.0	
MB 480-142549/28	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 142560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	410.4	
480-46836-2	MW-3	Total/NA	Water	410.4	
480-46836-4	MW-4D	Total/NA	Water	410.4	
480-46836-5	MW-6S	Total/NA	Water	410.4	
480-46836-6	MW-6D	Total/NA	Water	410.4	
480-46836-7	DUP-1	Total/NA	Water	410.4	
LCS 480-142560/28	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-142560/52	Lab Control Sample	Total/NA	Water	410.4	
MB 480-142560/27	Method Blank	Total/NA	Water	410.4	
MB 480-142560/51	Method Blank	Total/NA	Water	410.4	

#### Analysis Batch: 142660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-3	MW-4S	Total/NA	Water	410.4	
480-46836-8	SW-2	Total/NA	Water	410.4	
LCS 480-142660/4	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-142660/52	Lab Control Sample	Total/NA	Water	410.4	
MB 480-142660/3	Method Blank	Total/NA	Water	410.4	
MB 480-142660/51	Method Blank	Total/NA	Water	410.4	

#### Prep Batch: 142687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	PAC	
480-46836-1 DU	MW-1	Total/NA	Water	PAC	
480-46836-2	MW-3	Total/NA	Water	PAC	
480-46836-2 MS	MW-3	Total/NA	Water	PAC	
480-46836-3	MW-4S	Total/NA	Water	PAC	
480-46836-4	MW-4D	Total/NA	Water	PAC	
480-46836-5	MW-6S	Total/NA	Water	PAC	
480-46836-6	MW-6D	Total/NA	Water	PAC	
480-46836-7	DUP-1	Total/NA	Water	PAC	

TestAmerica Buffalo

## QC Association Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### General Chemistry (Continued)

#### Prep Batch: 142687 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-8	SW-2	Total/NA	Water	PAC	
480-46836-9	SW-3	Total/NA	Water	PAC	
480-46836-9 MS	SW-3	Total/NA	Water	PAC	
LCS 480-142687/1-A	Lab Control Sample	Total/NA	Water	PAC	
LCSD 480-142687/2-A	Lab Control Sample Dup	Total/NA	Water	PAC	
LCSN 480-142687/3-A	Lab Control Sample	Total/NA	Water	PAC	
MB 480-142687/4-A	Method Blank	Total/NA	Water	PAC	

#### Analysis Batch: 142790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-5	MW-6S	Total/NA	Water	300.0	
480-46836-7	DUP-1	Total/NA	Water	300.0	
LCS 480-142790/3	Lab Control Sample	Total/NA	Water	300.0	
MB 480-142790/4	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 142908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-1	MW-1	Total/NA	Water	9012	142687
480-46836-1 DU	MW-1	Total/NA	Water	9012	142687
480-46836-2	MW-3	Total/NA	Water	9012	142687
480-46836-2 MS	MW-3	Total/NA	Water	9012	142687
480-46836-3	MW-4S	Total/NA	Water	9012	142687
480-46836-4	MW-4D	Total/NA	Water	9012	142687
480-46836-5	MW-6S	Total/NA	Water	9012	142687
480-46836-6	MW-6D	Total/NA	Water	9012	142687
480-46836-7	DUP-1	Total/NA	Water	9012	142687
480-46836-8	SW-2	Total/NA	Water	9012	142687
480-46836-9	SW-3	Total/NA	Water	9012	142687
480-46836-9 MS	SW-3	Total/NA	Water	9012	142687
LCS 480-142687/1-A	Lab Control Sample	Total/NA	Water	9012	142687
LCSD 480-142687/2-A	Lab Control Sample Dup	Total/NA	Water	9012	142687
LCSN 480-142687/3-A	Lab Control Sample	Total/NA	Water	9012	142687
MB 480-142687/4-A	Method Blank	Total/NA	Water	9012	142687

#### Analysis Batch: 143003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-46836-9	SW-3	Total/NA	Water	410.4	
LCS 480-143003/28	Lab Control Sample	Total/NA	Water	410.4	
LCS 480-143003/52	Lab Control Sample	Total/NA	Water	410.4	
MB 480-143003/27	Method Blank	Total/NA	Water	410.4	
MB 480-143003/51	Method Blank	Total/NA	Water	410.4	

# Lab Chronicle

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-1**

**Lab Sample ID: 480-46836-1**

**Date Collected: 09/30/13 11:35**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 10:51	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 16:16	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:34	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 16:54	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:13	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	142170	10/01/13 18:42	KWJ	TAL BUF
Total/NA	Analysis	300.0		5	142313	10/02/13 17:31	KAC	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:05	CLT	TAL BUF
Total/NA	Analysis	300.0		1	142536	10/03/13 14:17	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 11:55	KMF	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:23	EGN	TAL BUF

**Client Sample ID: MW-3**

**Lab Sample ID: 480-46836-2**

**Date Collected: 09/30/13 13:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 11:15	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 16:39	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:35	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:06	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:15	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	142170	10/01/13 18:53	KWJ	TAL BUF
Total/NA	Analysis	300.0		2	142313	10/02/13 17:41	KAC	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 18:39	CLT	TAL BUF
Total/NA	Analysis	300.0		1	142536	10/03/13 14:27	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 11:55	KMF	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:25	EGN	TAL BUF

**Client Sample ID: MW-4S**

**Lab Sample ID: 480-46836-3**

**Date Collected: 09/30/13 13:15**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 11:39	CDC	TAL BUF

# Lab Chronicle

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-4S**

**Lab Sample ID: 480-46836-3**

Date Collected: 09/30/13 13:15

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	142444	10/03/13 17:02	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:42	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:08	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:16	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	142170	10/01/13 19:21	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142313	10/02/13 17:51	KAC	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:07	CLT	TAL BUF
Total/NA	Analysis	300.0		1	142536	10/03/13 15:07	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142680	10/03/13 19:10	JMB	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:27	EGN	TAL BUF

**Client Sample ID: MW-4D**

**Lab Sample ID: 480-46836-4**

Date Collected: 09/30/13 13:10

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 12:03	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 17:27	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:44	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:18	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:17	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	142170	10/01/13 19:26	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142313	10/02/13 18:01	KAC	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:08	CLT	TAL BUF
Total/NA	Analysis	300.0		1	142536	10/03/13 15:17	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142580	10/03/13 11:55	KMF	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:28	EGN	TAL BUF

**Client Sample ID: MW-6S**

**Lab Sample ID: 480-46836-5**

Date Collected: 09/30/13 08:30

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 12:27	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 17:50	RAL	TAL BUF

## Lab Chronicle

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: MW-6S**

**Lab Sample ID: 480-46836-5**

**Date Collected: 09/30/13 08:30**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:48	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:20	LMH	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 18:40	CLT	TAL BUF
Total/NA	Analysis	SM 2540C		1	142400	10/03/13 00:37	JMB	TAL BUF
Total/NA	Analysis	SM 2320B		1	142420	10/02/13 17:10	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142549	10/03/13 19:20	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 11:55	KMF	TAL BUF
Total/NA	Analysis	300.0		1	142790	10/04/13 12:59	KAC	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:30	EGN	TAL BUF

**Client Sample ID: MW-6D**

**Lab Sample ID: 480-46836-6**

**Date Collected: 09/30/13 08:45**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 12:51	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 18:14	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:52	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:23	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:20	KS	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:11	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	142420	10/02/13 17:15	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142549	10/03/13 19:30	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 11:55	KMF	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:31	EGN	TAL BUF

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C SIM		1	142226	10/02/13 13:15	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 18:37	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:54	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF

TestAmerica Buffalo

## Lab Chronicle

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: DUP-1**

**Lab Sample ID: 480-46836-7**

Date Collected: 09/30/13 00:00

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	6010C		1	142462	10/02/13 17:25	LMH	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:22	KS	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:14	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	142420	10/02/13 17:21	KWJ	TAL BUF
Total/NA	Analysis	300.0		5	142549	10/03/13 19:40	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 11:55	KMF	TAL BUF
Total/NA	Analysis	300.0		1	142790	10/04/13 13:08	KAC	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:32	EGN	TAL BUF

**Client Sample ID: SW-2**

**Lab Sample ID: 480-46836-8**

Date Collected: 09/30/13 10:45

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8280C SIM		1	142226	10/02/13 13:39	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142444	10/03/13 19:01	RAL	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:56	JRK	TAL BUF
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:27	LMH	TAL BUF
Dissolved	Prep	3020A			142250	10/02/13 11:55	NMD2	TAL BUF
Dissolved	Analysis	6020A		1	142585	10/02/13 21:24	MTM2	TAL BUF
Dissolved	Analysis	6020A		1	142856	10/03/13 19:22	MTM2	TAL BUF
Total/NA	Analysis	SM 2540C		1	142142	10/01/13 17:23	KS	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:18	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	142420	10/02/13 17:27	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142549	10/03/13 19:51	KRC	TAL BUF
Total/NA	Analysis	410.4		1	142560	10/03/13 19:10	JMB	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:33	EGN	TAL BUF

**Client Sample ID: SW-3**

**Lab Sample ID: 480-46836-9**

Date Collected: 09/30/13 09:50

Matrix: Water

Date Received: 10/01/13 02:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8280C SIM		1	142226	10/02/13 14:03	CDC	TAL BUF
Total/NA	Analysis	8260C		1	142636	10/04/13 05:27	LCH	TAL BUF
Dissolved	Prep	7470A			142231	10/02/13 08:50	JRK	TAL BUF
Dissolved	Analysis	7470A		1	142352	10/02/13 14:58	JRK	TAL BUF

# Lab Chronicle

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: SW-3**

**Lab Sample ID: 480-46836-9**

**Date Collected: 09/30/13 09:50**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			142205	10/02/13 08:35	NMD2	TAL BUF
Dissolved	Analysis	6010C		1	142462	10/02/13 17:30	LMH	TAL BUF
Dissolved	Prep	3020A			142250	10/02/13 11:55	NMD2	TAL BUF
Dissolved	Analysis	6020A		1	142585	10/02/13 21:30	MTM2	TAL BUF
Dissolved	Analysis	6020A		1	142856	10/03/13 19:27	MTM2	TAL BUF
Total/NA	Analysis	SM 2540C		1	142143	10/01/13 18:03	KS	TAL BUF
Total/NA	Analysis	353.2		1	142354	10/01/13 17:19	CLT	TAL BUF
Total/NA	Analysis	SM 2320B		1	142420	10/02/13 17:33	KWJ	TAL BUF
Total/NA	Analysis	300.0		1	142549	10/03/13 20:01	KRC	TAL BUF
Total/NA	Prep	PAC			142687	10/04/13 06:08	LAW	TAL BUF
Total/NA	Analysis	9012		1	142908	10/04/13 12:34	EGN	TAL BUF
Total/NA	Analysis	410.4		1	143003	10/05/13 12:40	KMF	TAL BUF

**Client Sample ID: SED-1**

**Lab Sample ID: 480-46836-10**

**Date Collected: 09/30/13 12:00**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 89.3**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			142545	10/03/13 11:23	PJQ	TAL BUF
Total/NA	Analysis	8260C		1	142541	10/03/13 16:17	CDC	TAL BUF
Total/NA	Prep	7471B			142286	10/02/13 11:00	JRK	TAL BUF
Total/NA	Analysis	7471B		1	142338	10/02/13 14:19	JRK	TAL BUF
Total/NA	Prep	3050B			142293	10/02/13 12:30	NMD2	TAL BUF
Total/NA	Analysis	6010C		1	142470	10/02/13 23:47	LMH	TAL BUF
Total/NA	Analysis	6010C		1	142747	10/03/13 21:13	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	142160	10/01/13 21:22	GTG	TAL BUF

**Client Sample ID: SED-3**

**Lab Sample ID: 480-46836-11**

**Date Collected: 09/30/13 10:15**

**Matrix: Solid**

**Date Received: 10/01/13 02:00**

**Percent Solids: 79.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			142545	10/03/13 11:23	PJQ	TAL BUF
Total/NA	Analysis	8260C		1	142541	10/03/13 16:42	CDC	TAL BUF
Total/NA	Prep	7471B			142286	10/02/13 11:00	JRK	TAL BUF
Total/NA	Analysis	7471B		1	142338	10/02/13 14:20	JRK	TAL BUF
Total/NA	Analysis	6010C		1	142470	10/02/13 23:50	LMH	TAL BUF
Total/NA	Prep	3050B			142293	10/02/13 12:30	NMD2	TAL BUF
Total/NA	Analysis	6010C		1	142747	10/03/13 21:15	LMH	TAL BUF
Total/NA	Analysis	Moisture		1	142160	10/01/13 21:22	GTG	TAL BUF

# Lab Chronicle

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 480-46836-12**

**Date Collected: 09/30/13 00:00**

**Matrix: Water**

**Date Received: 10/01/13 02:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	142723	10/04/13 13:21	LCH	TAL BUF

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Certification Summary

Client: Weston & Sampson Engineers  
 Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-14
California	NELAP	9	1169CA	09-30-14
Connecticut	State Program	1	PH-0568	09-30-14
Florida	NELAP	4	E87672	06-30-14
Georgia	State Program	4	N/A	03-31-14
Illinois	NELAP	5	200003	09-30-14
Iowa	State Program	7	374	03-01-15
Kansas	NELAP	7	E-10187	01-31-14
Kentucky	State Program	4	90029	12-31-13 *
Kentucky (UST)	State Program	4	30	04-01-14
Louisiana	NELAP	6	02031	06-30-14
Maine	State Program	1	NY00044	12-04-14
Maryland	State Program	3	294	03-31-14
Massachusetts	State Program	1	M-NY044	06-30-14
Michigan	State Program	5	9937	04-01-14
Minnesota	NELAP	5	036-999-337	12-31-13 *
New Hampshire	NELAP	1	2337	11-17-14
New Jersey	NELAP	2	NY455	06-30-14
New York	NELAP	2	10026	04-01-14
North Dakota	State Program	8	R-176	03-31-14
Oklahoma	State Program	6	9421	08-31-14
Oregon	NELAP	10	NY200003	06-09-14
Pennsylvania	NELAP	3	68-00281	07-31-14
Rhode Island	State Program	1	LAO00328	12-31-13
Tennessee	State Program	4	TN02970	04-01-14
Texas	NELAP	6	T104704412-11-2	07-31-14
USDA	Federal		P330-11-00386	11-22-14
Virginia	NELAP	3	460185	09-14-14
Washington	State Program	10	C784	02-10-14
West Virginia DEP	State Program	3	252	12-31-13
Wisconsin	State Program	5	998310390	08-31-14

\* Expired certification is currently pending renewal and is considered valid.

## Method Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
6020A	Metals (ICP/MS)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
7471B	Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)	SW846	TAL BUF
300.0	Anions, Ion Chromatography	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
410.4	COD	MCAWW	TAL BUF
9012	Cyanide, Physiologically Available	MA DEP	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF

### Protocol References:

EPA = US Environmental Protection Agency

MA DEP = Massachusetts Department Of Environmental Protection

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2288, TEL (716)691-2600

# Sample Summary

Client: Weston & Sampson Engineers  
Project/Site: Hamilton Landfill

TestAmerica Job ID: 480-46836-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-46836-1	MW-1	Water	09/30/13 11:35	10/01/13 02:00
480-46836-2	MW-3	Water	09/30/13 13:00	10/01/13 02:00
480-46836-3	MW-4S	Water	09/30/13 13:15	10/01/13 02:00
480-46836-4	MW-4D	Water	09/30/13 13:10	10/01/13 02:00
480-46836-5	MW-6S	Water	09/30/13 08:30	10/01/13 02:00
480-46836-6	MW-6D	Water	09/30/13 08:45	10/01/13 02:00
480-46836-7	DUP-1	Water	09/30/13 00:00	10/01/13 02:00
480-46836-8	SW-2	Water	09/30/13 10:45	10/01/13 02:00
480-46836-9	SW-3	Water	09/30/13 09:50	10/01/13 02:00
480-46836-10	SED-1	Solid	09/30/13 12:00	10/01/13 02:00
480-46836-11	SED-3	Solid	09/30/13 10:15	10/01/13 02:00
480-46836-12	TRIP BLANK	Water	09/30/13 00:00	10/01/13 02:00





## Login Sample Receipt Checklist

Client: Weston & Sampson Engineers

Job Number: 480-46836-1

Login Number: 46836

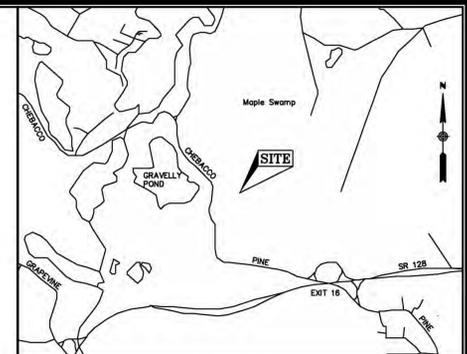
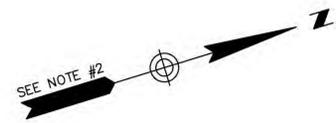
List Source: TestAmerica Buffalo

List Number: 1

Creator: Wienke, Robert K

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

**Appendix D**  
**AutoCAD File of Site Survey (CD)**

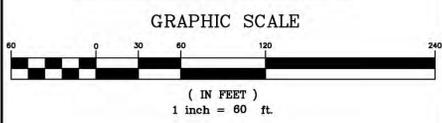


**LOCUS MAP (N.T.S.)**

- NOTES**
1. THIS PLAN WAS PREPARED FROM AN ACTUAL ON THE GROUND FIELD SURVEY CONDUCTED BY WSP SELLS ON JANUARY 17-20, 2012.
  2. THE HORIZONTAL DATUM SHOWN HEREON REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 83 CORRS USING RTK GPS.
  3. THE VERTICAL DATUM SHOWN HEREON REFERENCES NGVD 29.
  4. THE WETLAND FLAGS SHOWN HEREON WERE FLAGGED BY CDM ON DECEMBER 20, 2012; BY HANCOCK ON APRIL 1, 2009 AND BY OTHERS (DATED UNKNOWN).

- LEGEND**
- HYD HYDRANT
  - TEST PIT
  - POST
  - MONITOR WELL
  - DECIDUOUS TREE
  - 80 INDEX CONTOUR
  - 82 INTERMEDIATE CONTOUR
  - TREE LINE
  - SURVEY LIMIT
  - 2-5 WETLAND LINE

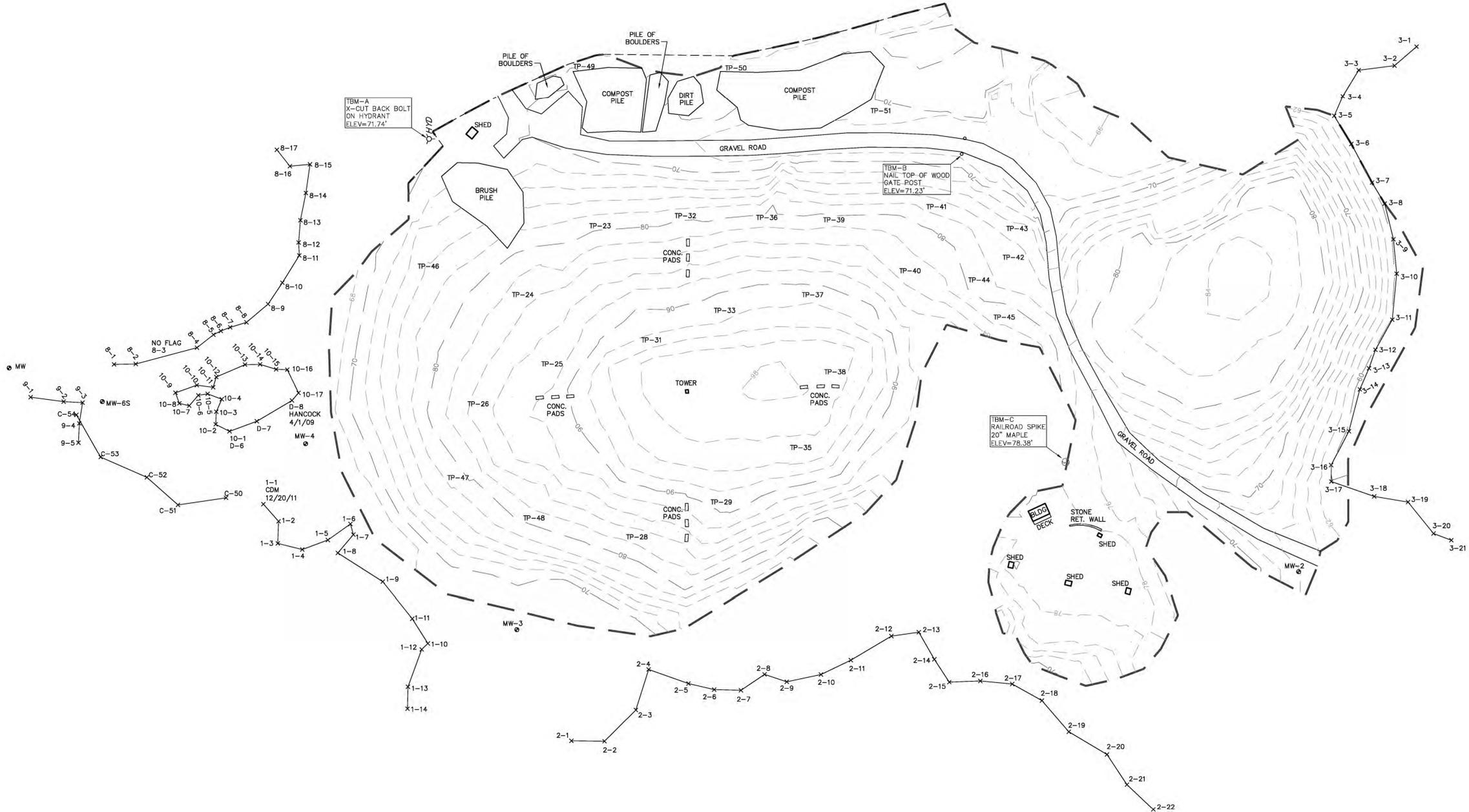
TEST PITS			
NORTHING	EASTING	ELEV.	DESC.
3043039.41	843212.24	80.77	TP 23
3042941.38	843240.07	83.03	TP 24
3042963.51	843336.83	88.63	TP 25
3042859.53	843358.75	85.41	TP 26
3042985.31	843529.78	84.22	TP 28
3043079.93	843536.50	90.60	TP 29
3043080.67	843440.54	97.06	TP 30
3043057.19	843342.81	93.70	TP 31
3043131.26	843228.11	80.84	TP 32
3043148.27	843321.31	90.59	TP 33
3043177.23	843413.85	98.66	TP 34
3043184.33	843510.68	94.36	TP 35
3043184.36	843511.16	94.59	TP 35
3043216.88	843253.11	81.60	TP 36
3043239.93	843349.14	91.96	TP 37
3043263.08	843435.00	95.56	TP 38
3043286.99	843277.39	82.07	TP 39
3043344.36	843355.47	83.57	TP 40
3043390.98	843278.33	76.68	TP 41
3043468.26	843359.28	76.64	TP 42
3043462.71	843328.01	75.02	TP 43
3043419.29	843387.41	78.80	TP 44
3043445.56	843419.15	80.41	TP 45
3042846.02	843196.26	76.50	TP 46
3042828.38	843424.88	80.47	TP 47
3042881.04	843475.39	82.06	TP 48
3043061.25	843029.18	69.71	TP 49
3043217.67	843074.75	70.90	TP 50
3043370.81	843179.46	69.68	TP 51



**TOPOGRAPHIC SURVEY  
HAMILTON SANITARY LANDFILL  
CHEBBACO ROAD  
HAMILTON, MASSACHUSETTS  
PREPARED FOR  
CDM-SMITH**

**WSP - SELLS**  
Transportation & Infrastructure  
155 Main Dunstable Rd. Suites 120 & 125 • Nashua, NH 03060 • 603.595.7900  
www.wspells.com

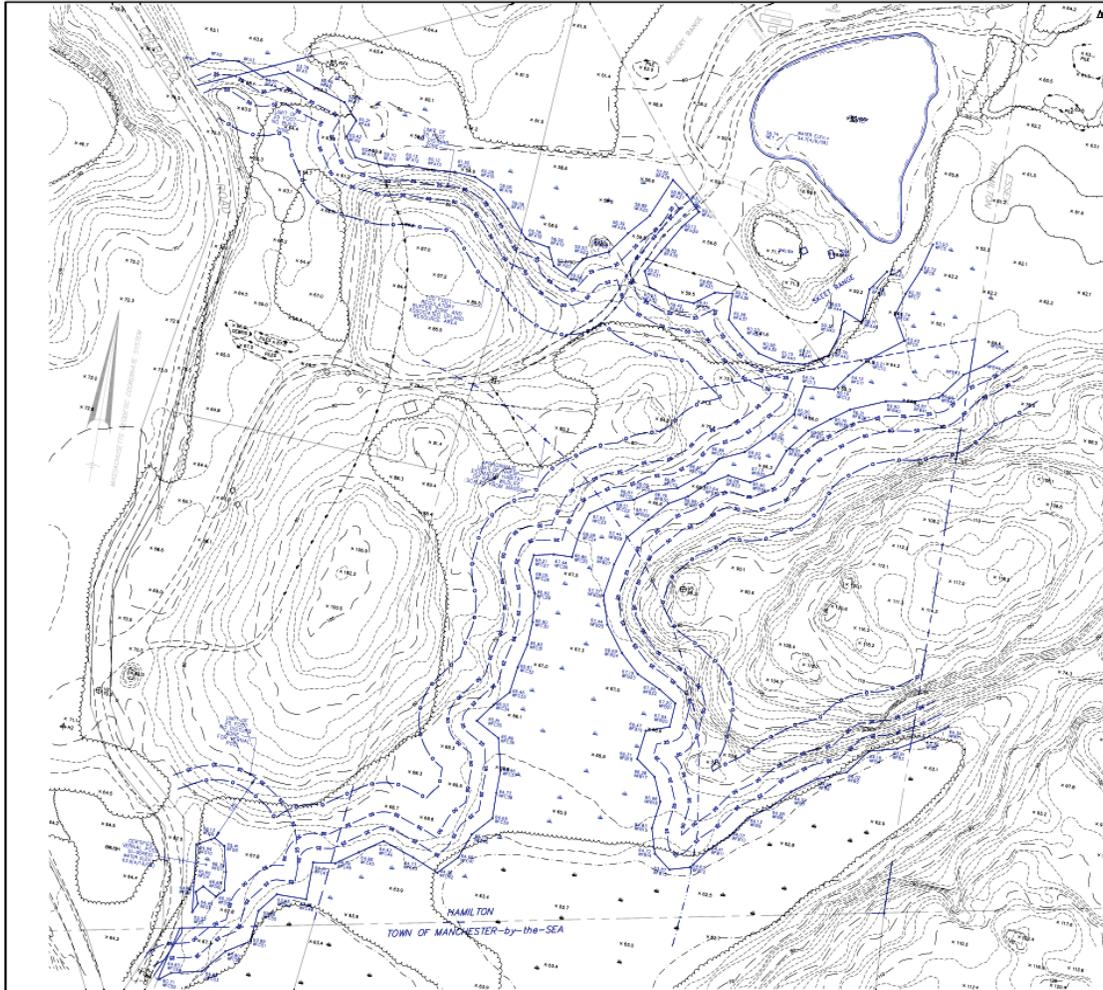
Drawn By	ES	Date	JANUARY 27, 2012	Job No.	123010
Surveyed By	CG, JL	Scale	1" = 60'	Sheet No.	1 OF 1
Checked By	DPP	Book No.	N-247 PG 136		



123010-1ww.dwg

**Appendix E**  
**Wetland Delineation Information**

# Wetlands Map by Hancock Associates dated July 23, 2009



**NOTES:**  
 1. THIS PLAN HAS BEEN PREPARED TO SHOW WETLAND DELINEATION PERFORMED IN APRIL, 2009 BY HANCOCK ASSOCIATES.  
 2. WETLAND CLASS WERE FIELD LOCATED ON APRIL 6, 13 & 14, 2009.

**HAMILTON  
 LANDFILL**

Chubbuck Road  
 Hamilton, Massachusetts

PREPARED FOR:

**THE TOWN OF  
 HAMILTON**  
 P.O. Box 429  
 Hamilton, Massachusetts 01936

**HANCOCK  
 ASSOCIATES**

Civil Engineers  
 Land Surveys  
 Wetland Scientists

100 STATE STREET, SUITE 200, WILMINGTON, MASSACHUSETTS 01897  
 508-261-7700 FAX 508-261-7900  
 WWW.HANCOCKASSOCIATES.COM


DATE:	07/23/09
SCALE:	1" = 80'
PROJECT NO.:	14790

**EXHIBIT  
 PLAN OF LAND  
 IN  
 HAMILTON, MA**

DATE: 07/23/09  
 DRAWN BY: CHAMBERLAIN  
 CHECKED BY: CHAMBERLAIN  
 PROJECT NO.: 14790

**EX-1**

SCALE: 1" = 80'  
 0 20 40

# **Appendix F**

## **Geotechnical Boring Program Information**

# FIELD TEST BORING LOG

SHEET 1-1

**SEA CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Partly Cloudy, ~55 degrees F

**BORING NO:** MW-1  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/17/06  
 Date Finished: 11/17/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/17/2006	2' BGS	NA	From Borehole

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
5	-	S-1	24/20	5-7	1/12" - 1/12"	PEAT ↓	<u>S-1:</u> PEAT: Sandy SILT - Moderately plastic organic silt, 35-50% fine sand, <10% gravel, v. soft, saturated, dark brown-black, organic material throughout.
7	-	S-2		7-15	NA	~7' SAND/ GRAVEL ↓	<u>S-2:</u> SAND/GRAVEL - Fine angular-subangular gravel up to 1/2-inch diameter, coarse to fine well-graded sand, <10% fines (based on washings between 7 and 15 feet BGS).
Bottom of Boring at 15' BGS							

**Notes:** Installed 2" diameter monitoring well (MW-1) in 4" borehole  
 Screen from 5-15' BGS  
 Riser from 3' AGS -5' BGS  
 Filter Sand from 4-15' BGS  
 Bentonite from 1-4' BGS  
 Soil Cuttings: NA  
 Concrete from 0-01' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=C=Dry C=Cored W=Washed									
SA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT	TYPE ID SIZE (IN) HAMMER WT (LB) HAMMER FALL (IN)	HW 4 140 30	SS 1 3/8 140 30	
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF				
GS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF				
=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF				
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 1-1

<b>SEA CONSULTANTS, INC.</b> Scientists / Engineers / Architects 485 Massachusetts Avenue Cambridge, MA 02139-4018	<b>PROJECT:</b> Hamilton Sanitary Landfill <b>LOCATION:</b> Chebacco Road, Hamilton, MA <b>CLIENT:</b> Town of Hamilton <b>WEATHER:</b> Raining	<b>BORING NO:</b> MW-2 <b>PROJECT NO:</b> 2006054.02
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Ground Elevation: Date Started: 11/17/06 Date Finished: 11/17/06 Driller: NH Boring Soil Engineer/Geologist: Alex Dubanowitz	<b>GROUNDWATER OBSERVATIONS</b>																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>DEPTH</th> <th>CASING AT</th> <th>STABILIZATION TIME</th> </tr> </thead> <tbody> <tr> <td>11/17/2006</td> <td>4' BGS</td> <td>NA</td> <td>From observations of casing</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	DATE	DEPTH	CASING AT	STABILIZATION TIME	11/17/2006	4' BGS	NA	From observations of casing								
DATE	DEPTH	CASING AT	STABILIZATION TIME														
11/17/2006	4' BGS	NA	From observations of casing														

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample								
		No.	Pen/Rec	Depth	Blows/6 inches										
5	-	S-1	24/18	5-7	4-6-6-7	SILT/ SAND ↓ ~7' BOULDERS SOIL ↓	S-1: Sandy SILT - Slightly plastic silt, 20-35% very fine sand, no gravel, m. stiff, saturated, orangish brown, uniform.  Refusal at 7' BGS so began coring. Cored through layers of rock, boulders and soil. <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th>Depth Range</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>7-8</td> <td>3</td> </tr> <tr> <td>8-9</td> <td>3</td> </tr> <tr> <td>9-10</td> <td>2</td> </tr> </tbody> </table>	Depth Range	Time (min.)	7-8	3	8-9	3	9-10	2
Depth Range	Time (min.)														
7-8	3														
8-9	3														
9-10	2														
10	-	S-2	24/3	10-12	8-10-14-26	~13' ROCK? ↓	S-2 BOULDERS  Roller-bitted from 10' to 14.5' BGS. Between 7' and 13' BGS, appeared to be boulders and incompetent rock. Between 13 and 14.5' BGS, appeared to be competent rock.								
Bottom of Boring at 14.5' BGS							Because the rock was not taking water during the drilling, there wasn't a connection with the groundwater, and therefore, the well was set above the rock/boulder layer at 7' BGS.								

**Notes:** Installed 2" diameter monitoring well (MW-2) in 4" borehole  
 Screen from 2-7' BGS  
 Riser from 3' AGS -2' BGS  
 Filter Sand from 1-7' BGS  
 Bentonite: NA (no bentonite because casing overlapped sand)  
 Soil Cuttings: NA  
 Concrete from 0-1' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=C=Dry C=Cored W=Washed									
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT	TYPE ID SIZE (IN) HAMMER WT (LB) HAMMER FALL (IN)	HW 4 140 30	SS 1 3/8 140 30	NX 3
S=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF				
A=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF				
F=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF				
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 1-1

**SEA CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Raining, ~45 degrees F

**BORING NO:** MW-3  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/16/06

Date Finished: 11/20/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/16/2006	4' BGS		From observations of casing
11/20/2006	4' BGS	12' BGS	4 days

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
5	-	S-1	15/13	5-6'3"	13-20-60/3"	GRAVEL/ SAND ↓	<p><u>S-1:</u> S-1A: Gravelly SAND - Coarse to fine well-graded sand, 10-20% fines, 20-35% subrounded gravel up to 1" diameter, dense, saturated, brown-gray.</p> <p>S-1B: Bottom 3" - Sandy SILT - Slightly plastic silt, 20-35% fine sand, no gravel, dense, orangish-gray.</p> <p>Refusal at 6'3" BGS. Was able to drive and wash through boulders.</p>
						~6' SILT/ SOIL ↓	
10	-	S-2	24/6	10-12	12-16-14-20	BOULDERS	<p><u>S-2</u> Gravelly SAND - Coarse to fine well graded sand, &lt;10% fines, 20-35% gravel, dense, saturated, brown, bouldery material between 6-12' BGS.</p> <p>Refusal at 12' BGS. Cored between 12 and 17' BGS. Cored 12 to 14' BGS on 11/16/06 and 14-17' BGS on 11/20/06. Stopped coring due to continual loss of water in borehole and difficult water access.</p>
						~12' ROCK? ↓	
Bottom of Boring at 17' BGS							

Depth Range	Time (min)
12-13	10
13-14	9
14-15	7
15-16	8
16-17	7

**Notes:** Installed 2" diameter monitoring well (MW-3) in 4" borehole  
 Screen from 5-15' BGS  
 Riser from 3' AGS -5' BGS  
 Filter Sand from 4-15' BGS  
 Bentonite from 2-4' BGS  
 Soil Cuttings from 1-2' BGS  
 Concrete from 0-1' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=Dry C=Cored W=Washed									
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT	TYPE	HW	SS	NX
S=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	3
A=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
F=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 1-2

**S E A CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Partly Cloudy, ~50 degrees F

**BORING NO:** MW-4  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/15/06

Date Finished: 11/16/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

## GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/15/2006	5' BGS	5' BGS	From observations of SS
11/16/2006	4' BGS	35' BGS	16 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
5	-	S-1	24/18	5-7	5-4-5-7	SAND ↓	<u>S-1:</u> SAND - Medium to fine uniform sand, <10% fines, no gravel, loose-m. dense, saturated, orangish brown (Natural Sand).
10	-	S-2	24/12	10-12	5-7-7-9		<u>S-2</u> SAND - Coarse to fine well graded sand, <10% fines, <10% gravel, m. dense, saturated, orange/gray/brown.
15	-	S-3	24/10	15-17	3-4-5-5		<u>S-3</u> SAND - Medium to fine, mostly fine uniform sand, <10% fines, no gravel, loose-m. dense, saturated, grayish brown.
20	-	S-4	24/16	20-22	5-6-6-6		<u>S-4</u> SAND - Medium to fine, mostly fine uniform sand, <10% fines, no gravel, m. dense, saturated, brownish gray, similar to S-3.
25	-	S-5	24/20	25-27	4-3-5-4	~25' CLAY / SAND ↓	<u>S-5</u> CLAY - Slightly-moderately plastic CLAY, 10-20% fine sand, no gravel, m. stiff, saturated, gray.
30	-	S-6	24/14	30-32	6-8-8-10		<u>S-6</u> SAND/CLAY - CLAY - Similar to S-5, stiff; SAND - Fine uniform sand, 10-20% slightly plastic fines, no gravel, m. dense, saturated, gray.
35	-	S-7	24/20	35-37	14-10-9-13		<u>S-7</u> SAND - Fine uniform sand, 10-20% fines, no gravel, m. dense, saturated, orangish brown, pockets of coarse to fine well graded sand, mostly coarse.

**Notes:** Four 5-foot sections of HW-size casing was in ground (2' AGS and 18' BGS) and used mud to hold open borehole. The borehole began collapsing at 35' BGS so installed casing.

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=Dry C=Cored W=Washed									
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
S=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT	TYPE	HW	SS	NX
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	3
S=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
F=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 2-2

**SEA CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Partly Cloudy, ~50 degrees F

**BORING NO:** MW-4  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/15/06

Date Finished: 11/16/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/15/2006	5' BGS	5' BGS	From observations of SS
11/16/2006	4' BGS	35' BGS	16 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample												
		No.	Pen/Rec	Depth	Blows/6 inches														
10	-	S-2	24/12	10-12	5-7-7-9	~25' CLAY / SAND ↓  ~12' ROCK? ↓	Between 35' and 40' BGS, the borehole was collapsing. Therefore, 3-inch casing was driven to keep the borehole open.  Bedrock encountered at 38' BGS. Between 37' and 38' BGS was mostly fractured rock. Cored from 38' to 43' BGS.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Depth Range</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr><td>38-39</td><td>6</td></tr> <tr><td>39-40</td><td>5</td></tr> <tr><td>40-41</td><td>6</td></tr> <tr><td>41-42</td><td>6</td></tr> <tr><td>42-43</td><td>5</td></tr> </tbody> </table> Corehole collapsed after 5' run of coring. Since would need to ream additional 3" casing to continue core, decided to stop coring. Backfilled core with bentonite and sand mix to 37' BGS.  Bottom of Boring at 43' BGS	Depth Range	Time (min)	38-39	6	39-40	5	40-41	6	41-42	6	42-43	5
Depth Range	Time (min)																		
38-39	6																		
39-40	5																		
40-41	6																		
41-42	6																		
42-43	5																		

Notes:	MW-4D	MW-4S
Installed 2" diameter monitoring wells (MW-4S/D) in 4" borehole		
Screen	27-37' BGS	2-12' BGS
Riser	3' AGS - 27' BGS	3' AGS - 2' BGS
Filter Sand	24-37' BGS	1-12' BGS
Bentonite	21-24' BGS	NA
Soil Cuttings	1-21' BGS	NA
Concrete	0-1' BGS	0-1' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=Dry C=Cored W=Washed									
∅=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
∅=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT	TYPE	HW	SS	NX
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	3
∅=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
∅=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 1-2

**S E A CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Partly cloudy, Light rain, ~50 degrees F

**BORING NO:** MW-5  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/13/06

Date Finished: 11/14/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/13/2006	8' BGS	15' BGS	10 min.
11/14/2006	10' BGS	20' BGS	16 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
5	-	S-1	24/16	5-7	38-55-40-36	FILL ↓ ~8'	<u>S-1:</u> Gravelly SAND - Coarse to fine widely graded sand, 10-20% non-plastic fines, 20-35% subrounded gravel up to 1" diameter, v. dense, dry, brown, some wood pieces and fractured rock.
10	-	S-2	24/0	10-12	6-5-5-6	PEAT (?) ↓ ~10'	<u>S-2</u> No Recovery. Sent SS down again to try and retrieve a sample and had no recovery again.
15	-	S-3	24/8	15-17	6-5-6-6	SAND ↓	<u>S-3</u> Silty SAND - Medium to fine, mostly fine uniform sand, 20-35% non-plastic fines, no gravel, m. dense, saturated, grayish brown.  USED MUD TO HOLD BOREHOLE OPEN
20	-	S-4	24/24	20-22	9-11-14-12		<u>S-4</u> SAND - Fine uniform sand, 10-20% non-plastic fines, no gravel, m. dense, saturated, brown, very homogenous.
25	-	S-5	24/12	25-27	8-8-8-7	~27' ROCK ↓	<u>S-5</u> SAND - Very fine uniform sand, 10-20% non-plastic fines, no gravel, m. dense, saturated, gray with some orange/brown staining.  Refusal at 27' BGS and drove casing to top of rock.

**Notes:** Peat was estimated to be at 8' BGS based on the washings observed during drilling.

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=Dry C=Cored W=Washed									
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
S=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT	TYPE	HW	SS	NX
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	3
S=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
F=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Designation				>30	HARD				

# FIELD TEST BORING LOG

SHEET 2-2

**S E A CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Partly cloudy, Light rain, ~50 degrees F

**BORING NO:** MW-5  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/13/06

Date Finished: 11/14/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/13/2006	8' BGS	15' BGS	10 min.
11/14/2006	10' BGS	20' BGS	16 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample																
		No.	Pen/Rec	Depth	Blows/6 inches																		
						~27' ROCK ↓	Refusal at 27' BGS																
							<table border="1"> <thead> <tr> <th>Depth Range</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr><td>27-28</td><td>9</td></tr> <tr><td>28-29</td><td>3</td></tr> <tr><td>29-30</td><td>7</td></tr> <tr><td>30-31</td><td>9</td></tr> <tr><td>31-32</td><td>9</td></tr> <tr><td>32-33</td><td>12</td></tr> <tr><td>33-34</td><td>10</td></tr> </tbody> </table>	Depth Range	Time (min)	27-28	9	28-29	3	29-30	7	30-31	9	31-32	9	32-33	12	33-34	10
Depth Range	Time (min)																						
27-28	9																						
28-29	3																						
29-30	7																						
30-31	9																						
31-32	9																						
32-33	12																						
33-34	10																						
							Based on the 15' minimum distance required between the top of a deep well screen and the bottom of a shallow well screen, the distance between the top of bedrock and the groundwater table needed to be 32'. Since the difference between bedrock and water was approximately 20', no deep well was required. Therefore, the cored section of bedrock was backfilled with a bentonite and sand mix to 27' BGS. Sand was backfilled between 17 and 27' BGS to the bottom of the shallow well screen.																
							Bottom of Boring at 34' BGS																

**Notes:** Installed 2" diameter monitoring well (MW-5) in 4" borehole  
 Screen from 7-17' BGS  
 Riser from 3' AGS -7' BGS  
 Filter Sand from 4-17' BGS  
 Bentonite from 1-4' BGS  
 Soil Cuttings: NA  
 Concrete from 0-1' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=C=Core W=Washed									
HA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT	TYPE ID SIZE (IN) HAMMER WT (LB) HAMMER FALL (IN)	HW 4 140 30	SS 1 3/8 140 30	NX 3
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF				
AS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF				
F=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF				
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 1-2

**SEA CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Raining, ~45 degrees F

**BORING NO:** MW-6  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/14/06

Date Finished: 11/14/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

### GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/15/2006	18.5' BGS	38.5' BGS	17 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
5	-	S-1	24/14	5-7	10-8-10-10	FILL ↓	<u>S-1:</u> Gravelly SAND - Coarse to fine widely graded sand, 10-20% non-plastic fines, 10-20% fine subangular gravel up to 1/2-inch diameter, m. dense, damp, brown.
10	-	S-2	24/12	10-12	5-5-5-8	~10' SAND ↓	<u>S-2</u> SAND - Medium to fine uniform, poorly graded sand, <10% fines, 10-20% fine subrounded gravel up to 1/4-inch diameter, m. dense, dry, orangish brown.
12	-	S-3	24/20	12-14	11-8-5-8		<u>S-3</u> SAND - Coarse to fine well graded sand, <10% fines, 10-20% fine subrounded gravel, m. dense, dry, brown with pockets of orange, similar to S-2.
14	-	S-4	24/20	14-16	11-10-8-8		<u>S-4</u> SAND - Medium to fine uniform sand, similar to S-3, dry.
16	-	S-5	24/18	16-18	15-14-16-20	~17.5' WATER ↓	<u>S-5</u> TOP 18": SAND - same as S-4 BOTTOM 6": Gravelly SAND - Coarse to fine well graded sand, <10% fines, 20-35% subrounded gravel up to 1/4-inch diameter, m. dense-v. dense, saturated, brown.
20	-	S-6	24/10	20-22	7-8-8-8	~19' SILT/ SAND ↓	<u>S-6</u> Silty SAND - Medium to fine uniform sand, 10-20% non-plastic fines, no gravel, m. dense, saturated, gray.

Notes:

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
D=C=Cored W=Washed									
HA=Hollow Stem Auger	Trace 0 to 10%	0-4	V. LOOSE	<2	V. SOFT	TYPE ID SIZE (IN) HAMMER WT (LB) HAMMER FALL (IN)	HW 4 140 30	SS 1 3/8 140 30	NX 3
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF				
AS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF				
FL=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF				
RQD=Rock Quality Designation				>50	HARD				

# FIELD TEST BORING LOG

SHEET 2-2

**S E A CONSULTANTS, INC.**  
 Scientists / Engineers / Architects  
 485 Massachusetts Avenue  
 Cambridge, MA 02139-4018

**PROJECT:** Hamilton Sanitary Landfill  
**LOCATION:** Chebacco Road, Hamilton, MA  
**CLIENT:** Town of Hamilton  
**WEATHER:** Raining, ~45 degrees F

**BORING NO:** MW-6  
**PROJECT NO:**  
 2006054.02

Ground Elevation:

Date Started: 11/14/06

Date Finished: 11/14/06

Driller: NH Boring

Soil Engineer/Geologist: Alex Dubanowitz

## GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING AT	STABILIZATION TIME
11/15/2006	18.5' BGS	38.5' BGS	17 hours

Depth (ft.)	PID Reading (ppm)	Sample				Strata	Visual Identification of Soil Sample
		No.	Pen/Rec	Depth	Blows/6 inches		
25	-	S-7	24/7	25-27	5-6-5-6	SILT/ SAND ↓	<u>S-7:</u> Silty SAND - Fine uniform sand, 20-35% slightly-plastic fines, <10% gravel, m. dense, saturated, gray-brown with pockets of orange, one 1" piece of rounded gravel.
30	-	S-8	24/12	30-32	14-21-20-16	~37' ROCK ↓	<u>S-8</u> Silty SAND - Very fine uniform sand, 10-35% slightly plastic fines, no gravel, v. dense, saturated, orangish brown with layers of gray and black.
35	-	S-9	24/16	35-37	14-16-18-16		<u>S-9</u> Silty SAND - Similar to S-8, uniform, orangish brown.

Rock was encountered at 37' BGS. Were able to drive casing to approximately 38.5' BGS (~1.5' into rock). Therefore, cored only 5' into bedrock.

Depth Range	Time (min)
39-40	5
40-41	9
41-42	9
42-43	9
43-44	8

**Notes:** Since a deep and shallow well were required at this location and we did not have the required distance between the groundwater table and bedrock, the deep well was installed within the bedrock. Needed to spin 3" casing into the bedrock to approximately 44' BGS to keep the corehole from collapsing. Continued losing water in core.

Installed 2" diameter monitoring wells (MW-6S/D) in borehole	MW-6D	MW-6S
Screen	39-44' BGS	17-27' BGS
Riser	3' AGS - 39' BGS	3' AGS - 17' BGS
Filter Sand	37.5-44' BGS	14-27' BGS
Bentonite	34.5-37.5' BGS	11-14' BGS
Soil Cuttings (SAND)	1-34.5' BGS	1-11' BGS
Concrete	0-1' BGS	0-1' BGS

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
Dry C=Cored W=Washed									
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT	TYPE ID SIZE (IN) HAMMER WT (LB) HAMMER FALL (IN)	HW 4 140 30	SS 1 3/8 140 30	NX 3
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT				
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF				
S=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF				
Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF				
RQD=Rock Quality Designation				>50	HARD				

