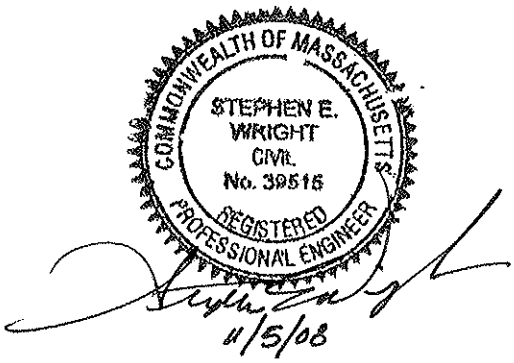
HAMILTON SANITARY LANDFILL
COMPREHENSIVE SITE ASSESSMENT
Hamilton, Massachusetts

DEP Transmittal No. X225251

NOVEMBER 2008

Prepared for
Town of Hamilton Board of Selectmen
Hamilton, Massachusetts



Prepared by:
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Enter your transmittal number → X225251
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Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

BWP SW 23
1. Permit Code: 7 or 8 character code from permit instructions

Comprehensive Site Assessment
2. Name of Permit Category

Landfill CSA
3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Town of Hamilton
1. Name of Firm - Or, if party needing this approval is an individual enter name below:

2. **Last Name** of Individual | 3. **First Name** of Individual | 4. MI

577 Bay Road
5. Street Address

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Hamilton	MA	01936	978 468-5580	

John Tomasz, Director of Public Works
11. Contact Person

12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Hamilton Sanitary Landfill
1. Name of Facility, Site Or Individual

Chebacco Road
2. Street Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Hamilton	MA	01936		

8. DEP Facility Number (if Known)	9. Federal I.D. Number (if Known)	10. BWSC Tracking # (if Known)
SL0119.001		

D. Application Prepared by (if different from Section B)*

S E A Consultants, Inc.
1. Name of Firm Or Individual

215 First Street, Suite 320
2. Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Cambridge	MA	02142	617 498-4624	

Stephen E. Wright, P.E.
8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☐ yes ☒ no
If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☒ **Fee** Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

Check Number	Dollar Amount	Date
NA	NA	NA

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Solid Waste Management

BWP SW 12 Initial Site Assessment
BWP SW 23 Comprehensive Site Assessment
BWP SW 24 Corrective Action Alternative Analysis
BWP SW 25 Corrective Action Design
Application for Landfill Assessment and Closure

X225251
Transmittal Number

SL0119.001
Facility ID# (if known)

A. BWP SW 12 Initial Site Assessment: 310 CMR 19.150(4)

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

Directions: Specify the report/plan and page numbers in which the following information is located.

	Plan/Report #	Page #	DEP Use Only
1. Initial Site Assessment (310 CMR 19.150(4))			
a. Background information			
b. Historical Research			
c. Literature/Data Search			
d. Hydrogeological Description			
e. Site Visit			
f. Mapping			
g. Field Screening			
2. Comprehensive Site Assessment Scope of Work			
3. Funding			
a. Corrective action and/or closure-post closure cost estimate			
b. Funding mechanism and schedule			

B. BWP SW 23 Comprehensive Site Assessment: 310 CMR 19.150(5)

	Plan/Report #	Page #	DEP Use Only
a. ISA Summary	CSA	1-3 to 1-5	
b. Mapping	CSA	1-8/Figures	
c. Drilling Program	CSA	4-2 thru 4-6	
d. Determination of Hydraulic Conductivity	CSA	4-10 thru 4-16	
e. Sampling and Analysis Plan	CSA	1-8 & 5-2	
f. Health and Safety Plan	5/19/06 CSA Scope of Work	Appendix C	
g. Project Schedule	CSA	1-9	

B. BWP SW 23 Comprehensive Site Assessment: 310 CMR 19.150(5) (cont.)

	Plan/Report #	Page #	DEP Use Only
h. Baseline Risk Assessment	CSA	Chapter 7	
i. Corrective Action Alternative Analysis Scope of Work Outline	CSA	8-21 & 8-22	

C. BWP SW 24 Corrective Action Alternative Analysis: 310 CMR 19.150(6)

	Plan/Report #	Page #	DEP Use Only
a. Corrective Action Objectives			
b. Alternatives Analysis			
c. Recommended Alternative			

Important Note: Engineering Plans must be stamped by a Registered Professional Engineer (PE). Property Line Location must be stamped by a Registered Land Surveyor (RLS).

D. BWP SW 25 Corrective Action Design: 310 CMR 19.151(2)(a)

	Plan/Report #	Page #	DEP Use Only
a. Corrective Action Design and/or closure plans			
b. Implementation schedule			

E. Post Closure Plans

Note: Part E is only applicable when a closure plan has been submitted and closure is being implemented.

	Plan/Report #	Page #	DEP Use Only
1. Maintenance Plan {310 CMR 19.142(5)}			
2. Monitoring Plan {310 CMR 19.142(5)}			
3. Post-Closure Use Plans {310 CMR 19.143} (if applicable)			
4. Record Notice of Landfill Operation {310 CMR 19.141}			

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention – Solid Waste Management

BWP SW 12 **Initial Site Assessment**
BWP SW 23 **Comprehensive Site Assessment**
BWP SW 24 **Corrective Action Alternative Analysis**
BWP SW 25 **Corrective Action Design**
Application for Landfill Assessment and Closure

X225251
Transmittal Number

SL0119.001
Facility ID# (if known)

F. Certification & Engineer's Supervision: 310 CMR 19.011

Engineer's Supervision:

All papers pertaining to design, operation, or engineering of this site or facility shall be completed under the supervision of a Massachusetts registered professional engineer knowledgeable in solid waste facility design, construction and operation, and shall bear the seal, signature and discipline of said engineer. The soils, geology, air monitoring and groundwater sections of the application or monitoring report shall be completed by competent professionals experienced in the fields of soil science and soil engineering, geology, air monitoring and groundwater, respectively, under the supervision of a Massachusetts registered professional engineer. All mapping and surveying shall be completed by a registered surveyor.

Stephen E. Wright, P.E.
Print Name

Authorized Signature

Project Manager, Principal Engineer
Position/Title

S E A Consultants, Inc.
Company

39515 (MA)
P.E. #

11/5/08
Date

Certification:

Any person, required by these regulations or any order issued by the Department, to submit papers shall identify themselves by name, profession, and relationship to the applicant and legal interest in the facility, and make the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties both civil and criminal for submitting false information including possible fines and imprisonment."

John Tomasz
Print Name

Authorized Signature

Director, Department of Public Works
Position/Title

11/5/08
Date

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INTRODUCTION

The Hamilton Sanitary Landfill Comprehensive Site Assessment (CSA) Report has been prepared by S E A Consultants Inc. (S E A) on behalf of the Town of Hamilton, Massachusetts. The report complies with the solid waste regulatory requirements provided in the Massachusetts Department of Environmental Protection (DEP) Solid Waste Management Facility Regulations, 310 CMR 19.000, and the DEP's Landfill Technical Guidance Manual.

DEP approval of the CSA Report will mark the completion of the second phase of the three-phased landfill assessment process, consisting of the Initial Site Assessment (ISA), Comprehensive Site Assessment (CSA), and Corrective Action Alternatives Analysis (CAAA). The objective of the assessment process is to evaluate the impact of the landfill on human health and the environment and, if necessary, implement corrective actions to mitigate these potential impacts.

The CSA Report presents information on current site uses; highlights past operations and closure activities; documents the landfill limits and adequacy of the existing cover system; assesses groundwater, surface water, and sediment quality in the vicinity of the landfill; presents the estimated quantity of landfill gas generated at the site; evaluates whether subsurface landfill gases are migrating off-site; and presents the findings of a baseline qualitative risk assessment aimed at identifying the landfill's potential impact on human health and the environment. Based upon the results of these activities, the CSA Report presents corrective action recommendations that will be implemented during the next phase of the assessment process. The CSA Report also includes recommendations regarding the implementation of a post-CSA environmental monitoring program at the site.

CHAPTER ONE
Background Information

Introduction

Chapter One describes current site conditions and recreational uses, highlights the Town's economic development interests at the site, presents a summary of the Initial Site Assessment completed in 1991, and provides an overview of the CSA field activities and schedule of when these activities were completed.

Site Location and Description

The Hamilton Sanitary Landfill is located off of Chebacco Road in the southeastern corner of Town. The landfill site is located in the tri-town area of Hamilton, Manchester, and Essex, where the Town of Manchester borders the landfill site to the south and the Town of Essex borders the site to the east. A locus plan of the facility is provided in Figure 1-1. Based upon the results of the CSA waste delineation test pitting program, the landfill encompasses an area of approximately 12.7 acres, of which approximately 7.1 acres were capped in 1980 in accordance with DEP (then DEQE) approved plans.

The landfill is located on approximately 50-acres of Town-owned land in a residentially-zoned area of Town. Residential development in the vicinity of the landfill is sparse and limited to single family homes located north of the site along Chebacco Road, where the closest home is approximately 750 feet north of the landfill. These homes rely on private wells for their drinking water as the Town's water supply does not extend to the majority of Chebacco Road. The only other development in the site area is the Town of Manchester's Gravelly Pond water treatment plant, located approximately 250 feet west of the landfill, and the capped Manchester Landfill and open-air air solid waste transfer station, which are located approximately 800 feet south of the site. Gravelly Pond, a surface water drinking supply for the Town of Manchester, is located approximately 400 feet west of the landfill.

A small portion of the landfill is used for yard waste drop-off, where residents may bring branches, brush, leaves and grass clippings to the site approximately one Wednesday per month between the months of April and November, as weather conditions permit. The branches and brush are stockpiled near the site entrance within a 40-foot by 60-foot area at the southwestern corner of the landfill. This material is chipped as necessary by the Hamilton Department of

Public Works and used within Town as erosion control material. Grass clippings and leaves are mixed with clean fill stockpiled at the site and used by the DPW for loaming and seeding along Town roads. In addition to the soil stockpile used to mix grass clippings and leaves, the DPW also has other soil and miscellaneous material stockpiles at the site. These stockpiles are located in the level, 80-foot wide corridor that resides between the landfill access road and Chebacco Road.

In addition to the DPW's use of a small portion of the site for yard waste drop-off and material stockpiling, the Town also leases portions of the site to two local gun clubs. The Hamilton/Wenham Rod & Gun Club lease approximately 8 acres of land located in the northeastern corner of the site and the Miles River Marsh Rats Skeet and Trap Club lease approximately 5 acres of land adjacent to the eastern perimeter of the landfill. The Rod & Gun Club activities include a rifle and pistol shooting range, as well as an archery area, and the Miles River Marsh Rats operate a skeet and trap shooting range. A discussion of the two gun club operations and associated regulatory issues is presented in Chapter Two.

A detailed plan of the site and surrounding area is shown on the CSA Base Plan. The Base Plan depicts site layout, topography, the delineated landfill limit, and all monitoring locations, including test pits, groundwater monitoring wells and soil gas probes. The Base Plan also depicts the leased land areas used by the Hamilton/Wenham Rod & Gun Club and Miles River Marsh Rats, and the brush and material stockpile areas managed by the Hamilton DPW.

Site Development Considerations

The Town of Hamilton, in its February 2004 Master Plan, identified planning and market opportunities that would assist the Town in generating non-residential tax revenue, while providing opportunity for new business growth and additional local jobs for the community. The landfill site, given its size and proximity to Route 128, represents the Town's best opportunity for creating a commercially-zoned area within which private development could take place. In its pursuit of this potential development opportunity, the Town is considering creating a commercial zoning overlay district that would allow development at the site for such uses as research and development (biotechnology, medical, environmental science, computer technology), light manufacturing, office, and public space (areas used for passive recreation, including outdoor cafes or restaurant seating).

The Town's Landfill Committee, which is comprised of members from the Board of Selectmen, Economic Development Committee, Planning Board, Zoning Board of Appeals, and Conservation Commission, has been working with S E A throughout the CSA phase so that the Town's site development interests can be properly integrated into the ongoing landfill assessment process. Although potential site development for the commercial uses described herein are in the preliminary evaluation stage, as the landfill assessment progresses the economic development opportunities are expected to evolve as well. At this stage, the Town's development objectives are broadly defined to include all portions of the site, including areas that may include all or part of the landfill itself.

As part of the DEP's review of the CSA, the Town would welcome the Department's input regarding Hamilton's pursuit of economic development opportunities at the site. The Town will also be sure to coordinate site development issues with the DEP as these issues become more defined.

Initial Site Assessment Summary

Landfill operations began at the site in the late 1950s (likely in 1959), following approval by the Department of Public Health, in its letter to the Town dated December 31, 1958, to use the site as a municipal disposal area. The site was used as a burn dump until the early 1970s, at which time the burn dump comprised an area of approximately 3 acres and was located in the vicinity of the current site entrance. Operations transitioned to a sanitary landfill method of waste disposal at this time in response to State regulatory requirements and landfilling progressed northerly in the area currently referred to as Area 1 (see CSA Base Plan).

In 1976, under order from the Department of Environmental Quality Engineering (DEQE), the Town prepared a landfill feasibility study documenting the manner in which Area 1 would be closed and the program for expanding landfilling operations further north, to the area now referred to as Area 2. The feasibility study, prepared by CDM, included a hydrogeologic investigation of the site, which identified a groundwater divide trending in a northwest/southeast direction, where Area 1 was located on the westerly side of the divide. Groundwater west of the divide was found to flow to Gravelly Pond, and groundwater east of the divide was found to flow towards Maple Swamp. The delineation of the groundwater divide was the driving factor that led to the closure of Area 1.

Landfilling operations ceased in Area 1 in 1978 and the area was closed in 1980 in accordance with DEQE-approved plans. Operations continued in Area 2 until 1983, at which time all disposal activities at the site ceased. Cover soils were placed on Area 2 in 1984, however, this work was not performed in accordance with any known design plans. Hence, the cover system placed on Area 2 was not completed in accordance with a DEQE plan approval.

In 1991, perhaps in response to potential site development interests at the site, the Town retained CDM to prepare an Initial Site Assessment (ISA) Report for the landfill. The ISA, dated December 31, 1991, was submitted to DEP and included the requisite components of an ISA as prescribed in the then-recently revised solid waste regulations, including a proposed Scope of Work for the CSA. For reasons unknown, no action was taken by DEP in connection with the ISA Report and a review of the document was never issued. Consequently, the landfill assessment process entered a dormant phase until October of 2005, at which time representatives from the DEP completed a site visit in response to an anonymous request that the facility be inspected.

In the spring of 2006, as an outcome of its October 13, 2005 site inspection, the DEP advised the Town that it should make provisions to move forward with the landfill assessment process. At that time, the Town had been working with S E A in a preliminary mode to evaluate issues in connection with the landfill. Upon notification that the Town should re-start the assessment process, S E A recommended that a coordination meeting be held with the DEP to identify the manner in which DEP approval of the CSA phase would be issued. The DEP coordination meeting was held on April 11, 2006 with representatives from the Hamilton DPW, DEP and S E A in attendance. As a result of the meeting, it was agreed that a new CSA Scope of Work would be prepared by S E A that would supersede the scope included in CDMs 1991 ISA Report.

S E A's proposed CSA Scope of Work was submitted to the DEP on May 19, 2006. A copy of the Scope of Work (without appendices) is included in Appendix A. The DEP issued its conditional approval of the Scope of Work in its letter to the Town dated September 13, 2006. A copy of the DEP's conditional approval letter is included in Appendix A. The DEP-approved scope of work for the CSA field investigations is summarized in Table 1.1.

TABLE 1.1
DEP-APPROVED CSA ENVIRONMENTAL MONITORING PROGRAM

Media	Scope Activity[1]
Groundwater	▪ Install a total of eight monitoring wells at six locations (MW-1, MW-2, MW-3, MW-4S/D, MW-5, and MW-6S/D). Couplet wells were installed at the MW-4 and MW-6 locations because the depth of overburden at these two locations was sufficient to maintain a reasonable well screen separation between the shallow and deep wells. ▪ Collect surface water elevations from four wells that comprise part of the Manchester Landfill groundwater monitoring network ($MW\text{-}1S_{manch}$, $MW\text{-}2S_{manch}$, $MW\text{-}5S_{manch}$, and $MW\text{-}6S_{manch}$). ▪ Perform hydraulic conductivity testing at each newly installed Hamilton Landfill monitoring well location. ▪ Perform four quarterly rounds of monitoring from the well network.
Surface Water	▪ Install three piezometers (PZ-1, PZ-2, and PZ-3) from the groundwater ditch and large dug pond located at the northern end of the site. Two piezometers were installed in the groundwater ditch (PZ-1 and PZ-2) and one piezometer was installed in the pond (PZ-3). The piezometers provided information on vertical gradients and additional elevation information for mapping groundwater contours. The piezometers also provided permanent locations from which surface water and sediment samples were collected. ▪ Collect three surface water samples (SW-1, SW-2 and SW-3) at the three piezometer locations. ▪ Perform two rounds of surface water monitoring (Rounds 1 and 3). ▪ Collect four rounds of water level measurements at the piezometers.
Sediment	▪ Collect three sediment samples (SED-1, SED-2, and SED-3) from the piezometer locations. ▪ Perform two rounds of sediment monitoring (Rounds 1 and 3).
Soil Gas	▪ Install twenty-four soil gas probes (SG-1 through SG-24). ▪ Perform four quarterly rounds of monitoring from the gas probe network.
Waste Delineation Test Pits	▪ Advance test pits to confirm the limit of the landfill (forty-one test pits were advanced for this purpose).

1. The parameters analyzed during the CSA are summarized in Table 1.2.

CSA Field Investigations

The CSA field investigations began with the installation of the groundwater monitoring well network. Well installation activities were performed in November 2006 followed by the installation of the soil gas probe network in January 2007. Hydraulic conductivity testing from the well network was also performed in January 2007, at which time the first round of soil gas monitoring was performed. The first round of groundwater monitoring was performed in

March of 2007. Subsequent rounds of groundwater and soil gas monitoring then followed roughly the same schedule, where Rounds 2 through 4 were completed in July 2007, October 2007, and January 2008. In September of 2007 the CSA test pit investigations were performed. The results of the test pit investigations confirmed that the landfill encompasses an area of approximately 12.7 acres and provided information regarding the nature and extent of soils used to cover the landfill.

A summary of the CSA field activities, sampling and analysis plan, and project schedule is presented below.

Monitoring Well Installation

Monitoring wells MW-1, MW-2, MW-3, MW-4S/D, MW-5 and MW-6S/D were installed between November 13, 2006 and November 17, 2006. S E A's CSA Scope of Work noted that couplet wells would be installed at well locations MW-3 through MW-5 if the depth of overburden was sufficient to maintain a 20-foot screen separation between the shallow and deep wells of the couplet. In addition, a well couplet would be installed at MW-6, regardless of the depth of overburden at this location.

The results of the boring activities at wells MW-3 through MW-5 revealed that the depth of overburden at MW-4 was the only location where an adequate well screen separation could be installed (actual screen separation of 15 feet was accomplished). The screen separation at the MW-6 couplet was 12 feet.

Copies of the boring logs and well construction logs for monitoring wells MW-1 through MW-6S/D are provided in Appendix D.

Hydraulic Conductivity Testing

Rising head slug tests were performed on the eight monitoring wells installed during the CSA (MW-1 through MW-6S/D). The hydraulic conductivity tests were performed on January 22, 2007 and consisted of bailing a slug of water from the well and observing the recovery of the well to equilibrium or static conditions. A detailed discussion of the hydraulic conductivity testing is provided in Chapter Four. Copies of the slug test recovery data, plotted on a semi-log scale versus time scale, are provided in Appendix I.

Groundwater Monitoring

As summarized in Table 1.2, four rounds of groundwater monitoring were performed during the CSA. The groundwater monitoring program is discussed in detail in Chapter Five. Copies of the groundwater analytical results are provided in Appendix G.

Surface Water and Sediment Monitoring

Two rounds of surface water and sediment monitoring were performed during the CSA. These rounds coincided with the first and third rounds of groundwater monitoring, performed in March and October 2007. The surface water and sediment samples were collected from the same locations, where SW-1 and SED-1 were obtained from an upstream location within the groundwater ditch that bounds the northern portion of the site and drains to Maple Swamp. Monitoring location SW-2 and SED-2 were obtained from a downstream location within the ditch, where the ditch approaches the property boundary that abuts the Town of Essex. Monitoring location SW-3 and SED-3 is located in the large dug pond in the northeastern corner of the site.

The surface water and sediment monitoring results are presented in Chapter Five and copies of the analytical data are provided in Appendix G. The three surface water and sediment sampling locations are shown on the CSA Base Plan.

Soil Gas Monitoring

Four rounds of soil gas monitoring were performed by S E A between January off 2007 and January of 2008. A detailed discussion of the CSA soil gas monitoring program, including an estimation of total non-methane organic compounds (NMOCs) emitted by the landfill, is provided in Chapter Six. Data tables summarizing the four rounds of soil gas monitoring are provided in Appendix H.

Waste Delineation Activities

The CSA waste delineation program was performed from September 17 to September 20, 2007. A total of forty-one test pits were advanced resulting in a 12.7-acre delineation of the landfill limit. Copies of the CSA test pit logs are provided in Appendix E. The test pitting program, in combination with S E A's file review, led to recommendations regarding acceptability of portions of the landfill's existing cover system. A detailed discussion of past landfill closure activities and the results of S E A's CSA waste delineation program is presented in Chapter Three.

Sampling and Analysis Plan

The sampling and analysis plan for the Hamilton CSA is summarized in Table 1.2.

TABLE 1.2
CSA SAMPLING AND ANALYSIS PLAN

Media	Monitoring Round	Sample Location	Analytical Parameters
Groundwater	Rounds 1 and 3	MW-1, MW-2, MW-3, MW-4S/4D, MW-5, MW-6S/D	VOCs(1), Dissolved Metals(2), General Chemistry(3) SVOCs(4), PCBs and Pesticides (5)
	Rounds 2 and 4	MW-1, MW-2, MW-3, MW-4S/4D, MW-5, MW-6S/D	VOCs(1), Dissolved Metals(2), General Chemistry(3)
Surface Water	Rounds 1 and 3	SW-1, SW-2, SW-3	VOCs(1), Dissolved Metals(2) General Chemistry(3 SVOCs(4), PCBs and Pesticides (5)
Sediment	Rounds 1 and 3	SED-1, SED-2, SED-3	VOCs(1), Total Metals(2), SVOCs(4) PCBs and Pesticides(5)
Soil Gas	Rounds 1 through 4	SG-1 through SG-24	Lower Explosive limit (LEL) Percent Methane (% by volume in air) Percent Carbon Dioxide Percent Oxygen Hydrogen Sulfide in parts per million

Notes:

1. Volatile Organic Compounds (VOCs, EPA Method 8260).
2. Metals Analysis: Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, and Zinc.
3. General Chemistry (Groundwater and Surface Water): Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids (TDS), Chloride, Nitrate, Sulfate, Cyanide, Chemical Oxygen Demand (COD).
4. Semi-Volatile Organic Compounds (SVOCs, EPA Method 8270 – Acid and Base/Neutral Extractable Compounds including PAHs).
5. PCBs (EPA Method 8082) and Pesticides (EPA Method 8081A).

Mapping

The following site maps are included in the CSA Report:

Landfill Base Plan

A CSA Base Plan, updated to reflect CSA field investigation activities, is provided in Figure 1-2. The Base Plan includes topographic features, on-site structures, abutting properties and residences, and locations of exploratory test pits performed to identify the horizontal limits of

solid waste. The Base Plan also depicts groundwater, surface water, sediment and soil gas sampling locations.

Land Use and Priority Resource Plans

Land Use and Priority Resource Maps prepared by the Massachusetts Executive Office of Environmental Affairs are provided as Figures 1-3 and 1-4.

Geologic and Hydrogeologic Plans

Regional geology in the site area is provided in Figure 4-1, which depicts surficial geology, and Figure 4-2, which depicts bedrock geology. Localized hydrogeologic plans depicting groundwater contours, bedrock contours and geologic cross-sections of the landfill have been prepared in accordance with the DEP-approved CSA Scope of Work. The Bedrock Contour and Geologic Cross-Section Plan is provided in Figure 4-3. Groundwater Contour Plans, depicting high and low groundwater mapping in the site area, are provided in Figure 4-4.

Project Schedule

The schedule of all CSA field activities performed at the Hamilton Sanitary Landfill is summarized in Table 1.3.

TABLE 1.3
CSA FIELD INVESTIGATIONS SCHEDULE

Task	Date Completed
Monitoring Well Installation	November 13, 2006 through November 17, 2006
Soil Gas Probe Installation	January 19, 2007
Hydraulic Conductivity Testing	January 22, 2007
Round 1 Landfill Gas Monitoring	January 22, 2007
Round 1 Groundwater, Surface Water and Sediment Monitoring	March 6, 2007
Round 2 Groundwater Monitoring	July 5, 2007
Round 2 Landfill Gas Monitoring	July 26, 2007
Test Pit Investigations	September 17, 2007 through September 20, 2007
Round 3 Groundwater, Surface Water and Sediment Monitoring	October 25, 2007
Round 3 Landfill Gas Monitoring	October 25, 2007
Round 4 Groundwater Monitoring	January 23, 2008
Round 4 Landfill Gas Monitoring	January 29, 2008

CHAPTER TWO
Gun Club Environmental Considerations

Introduction

For more than fifteen years the Hamilton/Wenham Rod & Gun Club and the Miles River Marsh Rats Skeet and Trap Club have leased separate portions of the landfill property for recreational purposes. The DEP, in its September 13, 2006 conditional approval of the CSA Scope of Work, included a requirement that the CSA assess the potential impact of lead shot from the two gun clubs. To this end, Chapter Two summarizes the operations associated with each club, highlights the environmental regulatory framework that applies to their operations, identifies the procedures that each has in-place for lead shot management, and identifies CSA monitoring results that may suggest impact from either club's operations. Based upon this information, Chapter Two summarizes S E A's conclusions and recommendations regarding lead shot management at the site and the degree to which landfill corrective actions may need to account for the presence of lead-impacted soils.

Gun Club Activities

The Hamilton/Wenham Rod & Gun Club lease approximately 8 acres of land located in the northeastern corner of the site and the Miles River Marsh Rats lease approximately 5 acres of land adjacent to the eastern perimeter of the landfill. The approximate limits of the two leased areas are shown on the CSA Base Plan (Figure 1-2). As shown on the Base Plan, the area leased by the Rod & Gun Club does not encompass any portion of the landfill area and the range activities are located more than 500 feet northeast of the northernmost portion of the landfill. In contrast, the lease area for the Miles River Marsh Rats includes approximately 0.7 acres of the landfill, where the 0.7-acres serves as the shooting area that also hold the high and low skeet houses and trap house (structures from which the clay targets are launched). A description of each club's range layout and shooting activities is summarized below.

Hamilton/Wenham Rod & Gun Club

The operating hours for the Hamilton/Wenham Rod & Gun Club are Monday through Saturday from 9:00 a.m to 7:00 p.m., or dusk, whichever comes first, and Sundays from 10:00 a.m to 4:00 p.m. Gaming activities consist of a rifle and pistol shooting range, as well as an archery field. These activities are confined to the area immediately north of the large dug pond, where

archery is located northwest of the pond and the rifle and pistol range is located north and east of the pond along a 400-foot corridor that runs parallel to the site's northern property line.

The general layout of the shooting range and archery area is shown on the CSA Base Plan. As shown on the Base Plan, the pistol and rifle ranges are approximately 75-feet and 300-feet in length, respectively. Firing is performed from a "pistol house" and a "rifle house" where the firing direction is from west-to-east. Targets at the east end of the site are backed by earthen berms that span the width of each range and are approximately 10-feet high. The two berms serve as a backstop and containment barrier for the lead shot.

Miles River Marsh Rats Skeet and Trap Club

The Miles River Marsh Rats skeet and trap range operates between the months of September and April. Shooting typically occurs for several hours each weekend during that time. Trap shooting is generally conducted on Saturdays from 10:00 a.m. to noon, while skeet shooting is generally conducted on Sundays from 10:00 a.m. to 3:00 p.m. The skeet range consists of "high" and "low" skeet houses, set approximately 130 feet apart, a "trap" house located equidistant between the two skeet houses, and eight shooting stations arranged in a semicircle beginning at each skeet house and including a location behind the trap house. The high and low houses are structures from which the clay targets are launched in skeet shooting and the trap house is where the targets are launched from in the game of trap. The location of the skeet and trap shooting range is shown on the CSA Base Plan and a detail plan of the range layout is provided in Figure 2-1.

As shown on the CSA Base Plan, the high and low skeet houses, trap house, and the shooting locations are located on a 0.7 acre lobe of waste that, during S E A's CSA test pitting program (see Chapter Three), was found to extend beyond the previously documented landfill boundary depicted in the 1991 ISA Report. The CSA test pits revealed that the debris in this area, consisting of shingles, drywall, wood, plastics and metals, was relatively shallow (not exceeding 6 feet deep) and had a layer of cover soil ranging in thickness from 6 to 12.

The arrangement of the shooting stations and the trajectory of the clay targets results in a fan-shaped shotfall zone extending laterally beyond each skeet house and outward to the limits of shotfall. According to information published by the National Shooting Sports Foundation, the shotfall zone can extend up to approximately 770 feet from the shooter's location. The majority of shot falls approximately 375 to 600 feet from the shooter. In an effort to learn

more about the practices of the gun club, S E A met with the club president at the site in July of 2008. During the site visit, the club president advised that club members typically use a one ounce Number 9 shot load. Number 9 shot contains approximately 585 lead pellets in each one ounce load. Each pellet is 0.079 inches (or 2.01 mm) in diameter. The club president indicated that very few club members shoot trap, the majority preferring skeet, which results in a wider shot distribution. The approximate limit of the shotfall zone is shown on Figure 2-1.

During the July 2008 site visit, S E A personnel conducted a walkover of the shooting range and shotfall zone to the extent possible given vegetation and terrain. The range is generally level for approximately 100 feet beyond the line formed between the high and low skeet houses. The ground surface in this area was lightly vegetated with grasses and low lying plants predominating. Within this area, S E A observed a large number of broken clay targets intermixed with expended shotgun shell plastic cases. Lead pellets were not observed on the surface, likely due to the small size of the No. 9 shot.

Further outward in the shotfall zone the land slopes downward and is characterized by dense, generally impassable vegetation including bushes and low trees. Large mature trees form the approximate outer edges of the shotfall zone. Trees at the front of the line of forest were generally denuded of vegetation and/or dead from shot impacts. The distance between the shooting stations and the dead tree line was approximately 300 to 400 feet.

Environmental Considerations

Contaminants of Concern

Lead from shot is the principal contaminant of concern at a small arms shooting range. Arsenic concentrations are also typically assessed due to the widespread use of arsenic in lead shot as a hardening agent. Additional contaminants include antimony, copper and zinc.

It should be noted that as part of the CSA monitoring program, sediment samples were collected from the small dug pond, groundwater ditch and large dug pond. The highest lead and arsenic concentrations were recorded at SED-2, which is located in the groundwater ditch immediately adjacent to the Hamilton/Wenham Rod & Gun Club rifle range. Given the proximity of this sample to the range, and the comparatively low concentrations of arsenic and lead at sample locations SED-1 and SED-3, it is possible that the concentrations at SED-

2 are related to lead shot from the range entering the stream via surface water run-off. A detailed discussion of the sediment sampling results is presented in Chapters Five and Seven.

With respect to the skeet shooting range, contaminants may also be present from the clay targets. Composed of approximately 70 percent limestone and 30 percent petroleum products (pitch, tars), targets contain polycyclic aromatic hydrocarbons (PAHs). Research reviewed by S E A indicates, however, that the PAHs are tightly bound in the target matrix and are not believed to significantly leach from the targets. Broken targets are acknowledged to pose a potential physical risk to wildlife or persons traversing the site due to sharp edges. Expended targets and fragments are considered a solid waste and may, therefore, be suitable for disposal in a solid waste landfill.

Regulatory Requirements and Current Range Management Procedures

According to the United States Environmental Protection Agency (U.S. EPA) lead pellets located on the ground at active shooting ranges are not considered a RCRA waste as the shot was used according to its intended purpose and deposited in the course of such use. Lead shot which is recovered from a shooting range is also not considered a RCRA waste but rather a scrap metal managed through recycling. If soils are excavated and proposed for off-site management, the soil will be subject to RCRA management requirements. In general, at ranges where a lead shot recovery program is in place, on-site reuse of range soils within the boundaries of the active range are generally allowed without testing.

Industry reports on shooting range management note the difficulty in recovering lead shot from uneven terrain and forested areas. Risks to wetlands and groundwater may be created by long-term deposition of lead shot due to the effects of acid rain which increases the likelihood of lead leaching into the environment. Government and industry guidance also recommend regular application of lime or other buffering agents to maintain the pH of the soils between 6.5 and 8.5.

The EPA has established a voluntary process whereby a shooting range may apply for a "Certificate of Recognition." The Certificate is intended to be awarded to ranges that have certified that they have prepared and intend to implement, or have implemented, a written Environmental Stewardship Plan that is consistent with the EPA *Best Management Practices for Lead at Outdoor Shooting Ranges* manual. Components of Environmental Stewardship Plans identify practices that will be implemented to manage lead shot and mitigate its impact

to the environment. These practices include both operational actions (for example, liming and lead shot collection/recycling) and construction actions (for example, construction of containment berms).

At the State level, the DEP has been working with local gun clubs to develop an effective and practical lead shot management program for shooting sports clubs in Massachusetts. This program, referred to as the Massachusetts Lead Shot Initiative, assists clubs in implementing measures at their ranges to better manage lead shot. The DEP, through the Lead Shot Initiative, echoes the EPA's policies for lead shot management and endorses the preparation of Environmental Stewardship Plans by gun clubs within the State.

S E A contacted the president of the Hamilton/Wenham Rod & Gun Club to discuss whether it had a lead shot management plan in-place for the range. We were advised that the club has an Environmental Stewardship Plan that was prepared in coordination with the DEP's Lead Shot Initiative and that the plan includes liming of soils to keep the pH at a level that will minimize the leachability of the lead shot into the soil. It is S E A's understanding that the Rod & Gun Club's lease agreement with the Town includes provisions that the club will operate the range in accordance with the provisions of the Environmental Stewardship Plan.

In conversations S E A had with the president of the Miles River Marsh Rats, we were advised that the club has not prepared an Environmental Stewardship Plan and has not actively engaged the DEP's Lead Shot Initiative in developing lead shot management protocols for the range. However, we were advised that the club has limed portions of the range in the past, although liming is not performed at a regular frequency. The club president advised S E A that the irregular terrain of the shotfall zone and the dense vegetation in this area makes lead shot recovery and liming difficult.

Conclusions and Recommendations

Based upon S E A's understanding of the gun club operations and the findings derived from the CSA environmental monitoring program (as presented in subsequent chapters of this report) S E A has reached the following conclusions and prepared the following recommendations in connection with the environmental aspects of the gun club activities:

1. Because the shooting range operations are distinct from and conducted at different times than when the landfill had operated, environmental impacts that may be

attributed to the shooting ranges should be managed in connection with the DEP's Lead Shot Initiative and should not be linked to the landfill assessment process.

2. The Hamilton/Wenham Rod & Gun Club has prepared an Environmental Stewardship Plan (ESP) in coordination with the DEP through the Massachusetts Lead Shot Initiative. The Rod & Gun Club is encouraged to implement the best management practices included in the ESP, including lead shot collection and recycling.

3. Based upon the lead and arsenic concentrations recorded at sediment sampling location SED-2, located within a length of the groundwater ditch that abuts the Rod & Gun Club rifle range, the gun club's ESP should include best management practices that will protect the ditch from potential lead shot impact. Such best management practices should take into account the potential for storm water run-off to be a potential source of lead and arsenic impact to the stream. The Town will communicate this issue to the Hamilton/Wenham Rod & Gun Club

4. The Town will encourage the Miles River Marsh Rats Skeet and Trap Club to prepare an ESP that will establish the protocols (including lead shot collection from the shotfall zone) and schedule for its lead shot management activities. S E A recommends that the ESP be prepared in coordination with the DEP's Lead Shot Initiative.

5. S E A recommends that the shallow depth of landfilled waste underlying the skeet shooting range be excavated and consolidated along the western slope of Area 2 (near Area 2B - see Chapter Three for additional information). Theoretically, the soils that cover the underlying solid waste material (approximately 12-inches in thickness) could be stripped and stockpiled and the solid waste could then be relocated. Following the waste relocation effort, the stockpiled cover soils could be returned to the shooting range area, assuming DEP would allow reuse of the soil without prior reclamation of lead shot and target fragments.

CHAPTER THREE
Landfill Cover System and CSA Test Pit Investigations

Introduction

Chapter Three presents information used to determine whether the existing landfill cover system installed in the early 1980s meets the regulatory requirements for landfill closure that were in place at the time. The first part of Chapter Three describes the regulatory issues that led to the closure of the two distinct landfill operating areas and the manner in which these areas were covered. This historical information provides the background against which the results of the CSA test pit investigations are compared, specifically with respect to the actual in-place nature and extent of the cover system. The comparison of the historical research with the findings from the CSA test pit investigations led to S E A's interpretation as to whether the existing landfill cover complies with past regulatory closure requirements. This interpretation is presented at the conclusion of Chapter Three.

Existing Landfill Cover System

The Hamilton Sanitary Landfill consists of two primary mounds running in a north-south direction. These two mounds, referred to as Area 1 and Area 2 on CDM's ISA Base Plan and similarly identified on the CSA Base Plan (Figure 1-2), represent discrete operational and closure periods in the life of the facility. Area 1, which is the larger of the two mounds, is where landfill operations began in the late 1950s and continued until approximately 1978. Operations then transitioned to Area 2 in 1978 and continued in that area until 1983, at which time the Town implemented a curbside collection program and ceased waste disposal activities at the site. In 1980, when operations in Area 2 were nearing their midway point, the Town installed a DEP-approved cover system on Area 1. Shortly after disposal operations concluded in Area 2, the mound was covered and vegetated. There were no plans prepared for the closure of Area 2, hence the work performed in this area was done without formal DEP approval.

In connection with S E A's file review for the CSA, including our review of historical information provided in the ISA Report, there are various documents that call into question the DEP's acceptance of the cover systems placed on Area 1 and Area 2. This is clearly an issue that needs to be resolved since the DEP's landfill assessment and closure process typically concludes with capping of the disposal site in accordance with the Department's current regulatory standards. If the Town has completed closure activities under prior DEP

approvals, then the scope of any corrective actions that may be required in connection with the current landfill assessment program could be significantly reduced. Therefore, given the potential magnitude of these regulatory implications, one of the Town's key CSA objectives is to resolve with DEP the question of the acceptability of the Area 1 and Area 2 cover systems.

S E A, through its review of the record combined with observations noted during the CSA test pitting program, has established a basis from which to interpret the acceptability of the existing landfill cover system. In order to properly document our conclusions in this regard, we have prepared the following summary of relevant landfill operational and closure activities derived from our file review.

Area 1

Disposal activities began at the site in the late 1950s. In 1970 ABR Incorporated, an engineering firm located in Boston, Massachusetts, prepared feasibility drawings depicting the general site preparation activities that would be performed in connection with converting waste disposal activities from a predominantly burn dump operation to a sanitary landfill operation. The ABR drawings showed the then-current disposal area at the southernmost end of Area 1 and encompassing approximately 3 acres.

The Department of Public Health (DPH) and later the Department of Environmental Quality Engineering (DEQE) issued various landfill operational violations to the Town in the early and mid-1970's, which ultimately led to the DEQE issuing a February 27, 1976 Order to Hamilton requiring that the Town comply with several provisions of the Deparment's solid waste regulations. Included in the Order was a requirement that engineering plans be prepared for the interim operation and closure of the landfill. In response, the Town retained CDM to prepare a feasibility study that evaluated hydrogeologic conditions at the site, presented interim operations (three to four years) and closure plans for the then-existing landfill area (what is currently referred to as the Area 1 portion of the landfill), and presented a long-term development plan for expanding the landfill to provide an additional 20 years of disposal capacity. The study, entitled *Sanitary Landfill Feasibility Study*, dated July 1976, was submitted to the DEQE for review and approval in August of 1976.

The hydrogeologic study concluded that a groundwater divide is present in the western side of the site. To the east of the divide, groundwater flow is easterly toward Maple Swamp and west of the divide, groundwater flow is westerly toward Gravelly Pond. The approximate

location of the divide, as originally mapped by CDM as part of the 1976 study, is shown on the CSA Base Plan for reference purposes (note: updated mapping of the groundwater divide was performed as part of the CSA and the presently interpreted divide is shown on Figure 4-4).

At the time the groundwater divide was originally mapped in 1976, nearly the entire landfill was located on the westerly side of the divide, meaning groundwater beneath the landfill was documented as flowing towards Gravelly Pond (Manchester's public drinking water supply). To provide protection to the water quality in Gravelly Pond, the 1976 feasibility study recommended that no further waste disposal take place on the westerly side of the divide and that all interim and future landfill operations take place on the easterly side. To this end, the feasibility study included operational plans for developing approximately 6 acres of land immediately adjacent to the existing landfill, located on the eastern side of the groundwater divide. The expansion area was intended to provide Hamilton with three to four years of interim operating capacity, during which time the Town could implement a preferred long-term solid waste management plan. In connection with the expansion, the feasibility study also recommended that the existing landfill area west of the groundwater divide be sealed and closed in accordance with DEQE sanitary landfill regulations.

The portion of the landfill recommended for immediate closure was referred to as Area 1 in CDM's 1991 ISA Report, whereas the proposed interim operating area was referred to as Area 2. The 1976 feasibility study included the following recommendations regarding the Area 1 final landfill cover system:

> *Side slopes should be compacted and graded to a slope not exceeding about 4:1 (horizontal to vertical) and the top slope graded with a minimum slope of 2 percent to prevent ponding of water. A relatively impervious cover material, such as silts and sands, should be placed over the entire area and compacted to a minimum depth of 12 to 18 inches followed by loam, spread and compacted to a depth of 6 to 12 inches. The total depth of final cover must be at least 24 inches and should be used to bring the area to the grades shown (on Figure 4-1 of the 1976 drawings). The area should then be graded and planted with trees and shrubs.*

The DEQE issued its conditional approval of the proposed Area 1 closure and Area 2 interim operating plans in a letter to the Town dated December 21, 1977 (copy of letter provided in Appendix B). The DEQE's approval of the Area 1 closure was approved as proposed in the 1976 feasibility study, with the exception that a proposed Hot Load Area be relocated on the easterly side of the groundwater divide. The State's approval of the interim operating plan

(Area 2) included requirements that the base preparation for the area be modified slightly and that closure of the entire site be completed by July 1, 1980.

The DEQE issued a letter to the Town dated December 18, 1979 confirming that the interim expansion area (Area 2) base elevations (pre-landfilling grades) had been prepared in accordance with the Department's requirements and that interim operations could continue in this area for one year (copy of letter provided in Appendix B). The DEQE's letter also stated that the closure of the "old disposal area" (Area 1) must be completed by August 15, 1980.

There is little documentation regarding construction of the Area 1 cover system, however, a June 23, 1980 letter from CDM to DEQE notes that the area had been covered, sealed, graded and seeded (copy of letter provided in Appendix B). Therefore, based upon the DEQE's letter of December 18, 1979 and CDM's letter of June 23, 1980, the record would indicate that the cover system for Area 1 was constructed in 1980 and completed in the summer of that year. The record also indicates that all disposal activities were directed to Area 2 in the summer of 1978.

Area 2

The DEQE's December 18, 1979 letter, the Department allowed filling to continue in Area 2 for a period of one year, meaning operations were to cease in this area by the end of 1980. As opposed to ceasing operations, the Town chose instead to expand the disposal area and in June of 1982 engaged the services of CDM to prepare a clay-lined lateral expansion design. The conceptual plans were submitted to DEQE in August of 1982 and consisted of a proposed 2-acre expansion that would abut the eastern slope of Area 2 and provide an estimated four years of disposal capacity. The conceptual plans included recommendations for capping the then-existing unlined Area 2 with a low permeability ($1x10^{-5}$cm/sec) cover. The plans reveal that the proposed cover thickness for Area 2 was specified at 2-feet. DEQE approved of the conceptual expansion plans in its letter to the Town dated September 22, 1982 and required that final design plans be submitted detailing various operational needs related to the expansion (copy of letter provided in Appendix B).

It is known from the record and from site conditions that the Area 2 landfill expansion did not occur. Documentation between CDM and the Town confirms that Hamilton chose not to proceed with the expansion and instead opted to implement a residential curbside collection program and discontinue landfill operations. The record also indicates that the Town continued to operate Area 2 until approximately July of 1983, as evidenced by an April 20,

1983 letter the Board of Public Works submitted to DEQE in response to the Department's issuance of an April 12, 1983 Notice of Violation letter (copy of April 20, 1983 letter provided in Appendix B). It was during the summer of 1983 that the Town discussed with CDM the preparation of plans, specifications and bid documents for the closure of Area 2. Subsequent documentation prepared by CDM (dated February 14, 1991) reveals that although an agreement was prepared to provide the closure design services, the Town did not execute the agreement and, consequently, the design for the Area 2 closure was never performed.

The DEQE performed a site inspection in April of 1984 and based on the inspection issued a Violation Notice to the Town on May 14, 1984 (copy of letter provided in Appendix B). The Violation Notice stated that it appeared that the landfill had been abandoned without being properly closed. Since the record includes documentation that Area 1 was "covered, sealed, graded and seeded" by the summer of 1980 (see Appendix B for CDM letter dated June 23, 1980), the DEQE's May 14, 1984 letter regarding the landfill not being properly closed is an assumed reference to the Area 2 portion of the facility, which operated from approximately 1978 to 1983.

In response to the DEQE's Violation Notice, representatives from the Department and the Town met at the site on August 16, 1984. The results of the meeting are presented in the DEQE's September 11, 1984 letter to the Town (copy of letter provided in Appendix B). The letter states that *"considerable work had been completed toward closing and capping the landfill; however, additional final cover is needed, particularly along the area of the side slopes. In addition, the entire area needs to be loamed and seeded with special attention given to regrading in certain areas to prevent future problems with ponding and erosion."* Again, this reference is assumed to pertain to Area 2, since Area 1 had already been closed and capped. It is further assumed that the cover material for Area 2 would have been placed some time between the DEQE's issuance of the May 14, 1984 Violation Notice and the August 16, 1984 site visit, however, there is no information in the file documenting when and to what extent the cover was placed or the types and thicknesses of materials used.

ISA Test Pit Investigations

In November of 1991, as part of the ISA, CDM observed the excavation of test pits for the purposes of determining the limit of solid waste. The number and location of these test pits is unknown as the ISA Report does not include test pit logs and the ISA Base Plan (Appendix

A of the ISA Report) does not show the test pit locations[1]. The limit of waste inferred by CDM as a result of their test pit investigations is shown on the ISA Base Plan, and reveals a total fill area of approximately 10.9 acres.

As part of the ISA delineation effort, CDM also advanced a total of five test pits in the Area 1 and Area 2 cover (three test pits in Area 1 and two test pits in Area 2). The locations of the five test pits are unknown as they are not depicted on the ISA Base Plan. The results of CDM's cover soil test pitting revealed the following thicknesses and material types:

> ***Area 1:*** 5 to 8-inches of topsoil underlain by 6 to 18-inches of gray silty sand.
>
> ***Area 2:*** 4 to 8-inches of topsoil underlain by 8 to 10-inches of low permeability soil underlain by 12 to 18 inches of gray silty sand. A bulk sample of the low permeability layer encountered in one of the Area 2 test pits was submitted to a soils laboratory for analysis. The results of the laboratory analysis, included in Appendix J of the ISA Report, revealed the permeability of the soil sample to be 2 $x10^{-6}$cm/sec.

The number of cover soil test pits advanced during the ISA was fairly limited, however, the CSA test pitting program provided an opportunity to record cover thicknesses at several locations along the landfill perimeter and obtain a more representative profile on the Area 1 and Area 2 cover systems.

CSA Test Pit Investigations

S E A's May 2006 CSA Scope of Work included a recommendation to advance several test pits along the landfill perimeter and in the vicinity of a referenced former septage disposal area to confirm the limit of the landfill depicted on CDM's ISA Base Plan. This recommendation was based on two primary considerations:

1. The exact number and locations of test pits advanced by CDM during the ISA are not described in the ISA Report (test pit logs are not included in the report and test pit locations are not depicted on the ISA Base Plan), therefore, it was deemed appropriate to excavate several confirmatory waste delineation test pits during the CSA;

2. The CSA test pits would provide additional information regarding the thickness of cover soils encountered in both Area 1 and Area 2, albeit at the edge of waste in these areas (none of the CSA test pits were advanced in the center portion of either landfill area).

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1. The test pit locations shown on CDM's ISA Base Plan (TP-1 through TP-14) depict the approximate locations of test pits advanced in connection with the hydrogeologic component of CDM's July 1976 *Hamilton Sanitary Landfill Feasibility Study*.

Landfill Delineation

The CSA test pits were excavated between September 17 and September 20, 2007 using a Komatsu PC-150 tracked excavator operated by P.B. Johnson (Contractor) on behalf of the Town of Hamilton. All test pits were excavated under S E A's direction and observation. A total of forty-one test pits were excavated, of which twenty-two were advanced along the perimeter of Area 1, eleven along the perimeter of Area 2, and eight in the area shown on the ISA Base plan as a former septage pit area (area where the Miles River Marsh Rat skeet range is now located). The test pit locations, labeled TP-1 through TP-23, are shown on the CSA Base Plan and test pit logs are provided in Appendix E.

The results of the CSA test pit investigations revealed that the landfill encompasses an area of approximately 12.7 acres, which is slightly larger than the 10.9 acre area delineated by CDM during the ISA. The primary deviation between S E A's delineation and CDM's 1991 ISA delineation was the detection of additional waste material in two areas: 1) underlying the skeet and trap shooting area located on the northeastern edge of the landfill; and 2) along the northwestern edge of the landfill near Chebacco Road. These two additional waste areas are highlighted as Area 2A and Area 2B on the CSA Base Plan.

An additional fill area of approximately 1.3 areas in size, referred to as Area 1A, is also shown on the CSA Base Plan. This area abuts Area 1 and is located in the fairly level terrain between the landfill access road and Chebacco Road. While this area is included in the boundary of Area 1 depicted on CDM's ISA Base Plan, S E A has identified it as a separate area based upon our interpretation of the 1976 landfill closure plan, which suggest that Area 1A was not included in the DEP-approved cover design for Area 1 (refer to Appendix C for a reduced size drawing of the 1976 Area 1 closure plan).

Areas 1A, 2A, and 2B, totaling approximately 2.7 acres in size, represent portions of the landfill where S E A's file review and CSA test pit findings suggest that a suitable cover system is not in place. Therefore, this leaves the 7.1-acre Area 1 and 2.9-acre Area 2 as the two areas where the test pit investigations were focused on confirming cover soil conditions. Before presenting the cover soil findings for Area 1 and Area 2, a summary of the test pit findings in Areas 1A, 2A and 2B is discussed.

Area 1A

Three test pits were excavated within the material stockpile area located between the landfill access road and Chebacco Road. These test pits, TP-19, TP-20, and TP-21, revealed that

waste material was located at a depth of approximately 6-inches beneath the surface of the gravel access road and extends westerly beneath the soil stockpiles towards the property line that runs along Chebacco Road. The cover soils within the stockpile area had a thickness of 6-inches of topsoil at TP-19, 9-inches of sand and gravel at TP-20, and 24-inches of combined topsoil and sand at TP-21. The waste in this 1.3-acre area, particularly in the region from TP-19 and TP-20, was fairly deep, extending to an average of 11 feet below the ground surface. The composition of the waste included burn material, wood, tires, stumps, leaves, brick, concrete, plastic, glass, and metal.

Area 2A

As noted previously, the CSA test pits excavated in the skeet shooting range were originally proposed by S E A to determine whether there was evidence of septage disposal in this area, based on information provided on the ISA Base Plan showing that the area had at one time been used for this purpose. None of the eight CSA test pits advanced in this area uncovered septage, however, miscellaneous waste was encountered consisting mainly of construction debris, including shingles, drywall, and wood, as well as general waste such as rags, plastic and metal debris. The extent of the fill in the skeet shooting range encompasses an area of approximately 0.7 acres. The depth of the fill was typically no greater than 6 feet, with a cover soil thickness ranging from 6 to 12-inches.

Area 2B

The CSA test pits excavated along the northwestern edge of the landfill were initially located along the Area 2 toe-of-slope, which coincided with the boundary depicted by CDM on the ISA Base Plan. While excavating test pit TP-17 the waste edge was found to extend beyond the toe-of-slope and into the adjacent low lying area. Based on this finding, S E A excavated several test pits in the low lying area abutting the northwestern edge of the landfill. In total, six test pits were excavated in a westerly direction until further excavation could not be performed due to the presence of wetlands. Although the fill limit along the western edge was not confirmed due to the wetlands, the boundary is assumed to follow the wetland edge in this area, resulting in a fill area of approximately 0.7 acres extending beyond the landfill's northwestern toe of slope. The waste material encountered included wood, rags, plastic and metal debris intermixed with soil. The depth of the fill was typically no greater than 5 feet, with a cover soil thickness ranging between 6 inches in several locations to 2 feet at TP-18A.

The remaining perimeter test pits largely confirmed the boundary presented by CDM on the ISA Base Plan. Material encountered at these test pits were typical of municipal solid waste and included such items as plastic bags, metal cans, paper, glass, and wood.

Cover Soil Observations at Area 1 and Area 2

During the CSA test pitting program S E A documented the nature of cover soils encountered at each pit for the purposes of comparing our findings with the cover soils approved by DEQE for the Area 1 closure (per CDM's July 1976 Landfill Feasibility Study), as well as documenting the cover system placed on Area 2, for which there was no apparent DEQE-approved plan. A summary of the cover soil material types and thicknesses encountered at each test pit (excluding the pits excavated in the three areas where an extended limit of fill was encountered) is shown on the CSA Base Plan and highlighted in Table 3.1 (Area 1) and Table 3.2 (Area 2).

Table 3.1
Observed Cover Material Thicknesses – Area 1

AREA 1		
DEQE-Approved Cover System (as proposed in CDM's July 1976 Landfill Feasibility Study and approved by DEQE in its letter dated December 21, 1977): 12-inches to 6-inches of loam 12-inches to 18 inches of silty sand Total cover thickness of 24-inches		
Test Pit Location	**Cover Material Encountered**	**Total Cover Thickness**
TP-1	±12 inches rooted topsoil ±18 inches fine to medium sand	30 inches
TP-2	±4 inches rooted topsoil ±20 inches fine to medium sand	24 inches
TP-3	±12 inches rooted topsoil ±12 inches fine to medium sand	24 inches
TP-4	±6 inches rooted topsoil ±18 inches fine to medium sand	24 inches
TP-5	±12 inches rooted topsoil ±8 inches fine silty sand	20 inches
TP-6	±12 inches rooted topsoil	12 inches (thickens further up slope)
TP-6A	±12 inches rooted topsoil	12 inches
TP-6B	±12 inches rooted topsoil	12 inches
TP-6C	±12 inches rooted topsoil ±12 inches fine silty sand	24 inches
TP-7	±6 inches rooted topsoil ±12 inches fine sand	18 inches
TP-18	±12 inches rooted topsoil ±18 inches fine silty sand	30 inches
TP-19	At base of slope: ±9 inches rooted topsoil ±15 inches fine silty sand	24 inches (pinches to 15 inches at toe – see log)
TP-20	At base of slope: ±12 inches rooted topsoil ±12 inches fine to medium sand	24 inches
TP-21	At base of slope: ±12 inches rooted sandy topsoil	12 inches
TP-22	At base of slope: ±12 inches fine to medium sand and gravel	12 inches
TP-23	±4 inches rooted topsoil ±20 inches fine to medium sand	24 inches

Table 3.2
Observed Cover Material Thicknesses – Area 2

AREA 2		
The record indicates that closure plans were not prepared for Area 2; hence there is no written DEP approval of the Area 2 cover system.		
Test Pit Location	**Cover Material Encountered**	**Total Cover Thickness**
TP-7B	±9 inches fine to medium sand and gravel ±9 inches fine sand with trace clay	18 inches (thins to 12-inches beneath access road)
TP-7C	±6 inches rooted topsoil ±12 inches fine to medium sand	18 inches (thins to 6 inches of sand and gravel cover at access road
TP-13	±4 inches rooted topsoil ±12 inches grey clay	16 inches
TP-13A	±6 inches rooted topsoil ±18 inches grey clay	24 inches
TP-14	±6 inches rooted topsoil ±36 inches grey clay	42 inches
TP-15	±4 inches rooted topsoil ±6 inches grey/brown sandy clay ±12 fine to medium sand	22 inches
TP-16	±6 inches rooted topsoil ±9 inches silty sand with trace clay	15 inches
TP-17	At base of slope: ±6 inches rooted topsoil ±9 inches silty sand	15 inches

As shown in Table 3.1, of the sixteen test pits advanced along the perimeter of Area 1, the majority met the minimum thicknesses and general material types (loam and silty sand) approved by DEQE for this portion of the landfill.

With respect to the final cover placed on Area 2, Table 3.2 depicts a more varying cover system thickness and material type, which could be attributed to the work being performed in the absence of engineered plans that would have aided in a more uniform placement of the cover soils. It should be noted that the total cover thickness at six of the eight test pit locations was less than the DEQE-required minimum depth of 24 inches required by the regulations in effect at the time the Area 2 cover was placed (estimated as the summer of 1984). The governing solid waste regulations at that time were from 1978, where minimum cover requirements were specified in 310 CMR 19.15 – *Depths of Cover; Daily, Intermediate, Final.*

It is also worth noting that the clay cover encountered at test pits located along the northern edge of Area 2 was likely obtained from material stockpiled on-site. The record notes that marine clay (dredged from the river at the Danversport Yacht Club in Danvers, Massachusetts) was stockpiled on the northern edge of Area 2 in 1982 in anticipation of using this material for the then-proposed 2-acre clay-lined lateral expansion for Area 2. In 1982 dredged sediments from the large on-site pond were also stockpiled with the intention of using this material for the low permeability layer of the Area 2 final cover (the marine clay and dredged sediment stockpiles are shown on CDM's conceptual landfill expansion plans that were submitted to DEQE in August of 1982). As discussed earlier in this chapter, the Town opted not to construct the lined expansion, therefore, the stockpiled sediments and marine clay would have been available for cover on Area 2. The CSA test pits reveal that these materials were used for this purpose.

S E A's Regulatory Interpretation of Existing Landfill Cover System

Area 1

Based upon S E A's review of landfill operations and closure documentation dating back to 1975, DEP-approved closure plans were prepared for the Area 1 portion of the landfill. These plans were submitted to the DEQE (now DEP) as part of the July 1976 *Sanitary Landfill Feasibility Study*, prepared by CDM. The closure plans are provided as Figure 4-1 of the 1976 Feasibility Study (with the proposed Area 2 interim operating area provided as Figure 4-2) and the methodology for "sealing" Area 1 is provided on Pages 14 and 15 of the study. Copies of these two pages and reduced sized copies of the Area 1 closure plans and Area 2 interim operating plans (Figures 4-1 and 4-2, respectively) are included in Appendix C. The DEQE issued its conditional approval of the proposed Area 1 closure plan and Area 2 interim operating plan in its letter dated December 21, 1977 (refer to Appendix B).

As noted on Page 15 of the Feasibility Study, the Area 1 slopes were not to exceed 25 percent and be no flatter than 2 percent. The cover system itself was to consist of a relatively impervious material, such as silts and sands, placed over the entire area and compacted to a minimum depth of 12 to 18 inches followed by loam, spread and compacted to a depth of 6 to 12 inches. The total depth of final cover was to be at least 24 inches and the area would then be planted with trees and shrubs.

Based upon the DEQE's letter of December 18, 1979 and CDM's letter of June 23, 1980 (refer to Appendix B), the record indicates that the cover system for Area 1 was constructed

in 1980 and completed in the summer of that year. The record also indicates that all disposal activities were directed to Area 2 beginning in the summer of 1978.

Having researched the files, it is S E A's opinion that DEP-approved closure plans exist for Area 1 and the cover system was installed in substantial conformance with that approval, as corroborated during the CSA test pitting program. As such, it is reasonable to advocate that the Town should not be required to re-cap Area 1 to meet the DEP's current capping standards. This opinion is further supported by the results of the CSA monitoring program, which reveals that the landfill has had a minimal environmental impact, as presented in detail in Chapters Five, Six and Seven of this report.

Area 2

The record suggests that the 2.9-acre Area 2 was operated between approximately 1978 and 1983. Unlike the documentation available for Area 1, it is evident from the record that DEQE-approved closure drawings were not prepared for Area 2. To this point, the DEQE cited the Town for not properly closing the area in its Violation Notice of May 14, 1984. Although the DEQE's subsequent letter, dated September 11, 1984, states that considerable work had been completed toward closing and capping the landfill, it notes that additional work is required.

Given that DEQE-approved closure plans do not exist for Area 2, and the depth of cover documented during the CSA test pit activities revealed depths that were predominantly less than the minimum 24-inch thickness required at the time the landfill cover system was installed, it is speculative as to whether an argument can be made whereby DEP would currently accept the existing Area 2 cover system. The presence of a low permeability clay material in this area is beneficial, however, the extent of the material throughout Area 2 is unknown. Therefore, additional test pits could be advanced on the plateau to confirm the presence and depth of the material, however, this would only be recommended in the event the DEP were to determine that the cover system could be "grandfathered" to the closure requirements in existence at the time the cover was placed (i.e. cover system requirements would be dictated by the DEQE's 1978 solid waste landfill regulations).

Ultimately, given the absence of any formal closure design plans for Area 2 or DEQE approval of such plans, it is appropriate to defer to DEP as to whether the cover system in this area is acceptable as-is or whether it would be subject to the DEP's current capping standards.

Areas 1A, 2A, and 2B

The results of S E A's file review and the findings from the CSA test pit investigations suggest that Area 1A was not included in the 1980 closure activities performed in connection with the 1976 DEQE-approved closure plans for Area 1. On the assumption that DEP concurs that the Area 1 cover system is acceptable, S E A recommends that Area 1A be provided with a cover system that meets the criteria that were in effect when Area 1 was capped (i.e. Area 1A would be "grandfathered" to the final cover standards established in the DEQE's 1978 regulations). Since Area 1A is the area where the Town currently maintains several earthen stockpiles and some rubble piles, the installation of a cover system in this area may include a paved surface upon which the stockpiles would be located following placement of the grandfathered cap.

Given the shallow depth of waste located in Areas 2A and 2B, S E A recommends that these areas be excavated and consolidated along the western slope of Area 2 (near Area 2B) and capped with a cover system consistent with the cover system required by DEP for Area 2 (a cover system grandfathered to 1978 standards or a cover system that meets current DEP standards). In addition to seeking DEP's opinion on the type of cover system that would be required for the relocated Area 2A and 2B waste, S E A also requests the Department's opinion regarding environmental controls that may be needed in connection with the relocation of solid waste located beneath the skeet and trap shooting area (Area 2A).

A summary of S E A's cover system recommendations regarding the five areas that make up the Hamilton Sanitary Landfill is provided in Table 3.3.

Table 3.3
Cover System Recommendations

Location	Acreage	Recommendation
Area 1	7.1	Based upon S E A's file review and the results of the CSA test pitting activities, Area 1 has been closed in substantial conformance with DEQE-approved plans. As such, S E A recommends that the DEP accept the existing cover system for Area 1 as-is.
Area 1A	1.3	S E A's file review and the findings from the CSA test pit investigations suggests that Area 1A was not included in the Area 1 closure completed in 1980. Therefore, S E A recommends that Area 1A be provided with a cover system that meets the criteria that were in effect when Area 1 was capped (i.e. Area 1A would be "grandfathered" to the final cover standards established in the DEQE's 1978 regulations).
Area 2	2.9	S E A's file review revealed that DEQE-approved closure drawings were not prepared for Area 2. Given the absence of any formal closure design plans for Area 2, it is appropriate to defer to DEP as to whether the cover system in this area is acceptable as-is or whether it would be subject to the DEP's current capping standards.
Area 2A (skeet range)	0.7	S E A recommends that the shallow depth of fill located in Area 2A be excavated and relocated to the western slope of Area 2 where it can be consolidated with the shallow fill of Area 2B. The consolidated waste from these two areas would be capped with a cover system consistent with the system required by DEP for Area 2 (a cover system grandfathered to 1978 standards or a cover system that meets current DEP standards).
Area 2B	0.7	

CHAPTER FOUR
Hydrogeologic Investigations

Introduction

Chapter Four summarizes and compiles information presented in the ISA Report and supplements this information with the additional data collected during the CSA field activities. The CSA activities described in this chapter include the installation of monitoring wells, hydraulic conductivity testing, contouring of groundwater elevations and calculation of groundwater gradients across the site. An interpretation of the site surficial and bedrock geology and hydrogeology is presented based upon available hydrogeologic information.

Background

The regional geology and hydrogeology of the site area is described in detail in the Hamilton Landfill ISA Report and in CDM's January 1996 Manchester Landfill CSA Report. As noted in these reports, several field investigations have been performed in the area of the Hamilton Landfill, many of which focused on the Town of Manchester's surface water supply at Gravelly Pond. These studies provide insight into the regional and local geology and hydrogeology in the site area. This historic information, combined with the boring program completed by S E A in connection with the CSA monitoring well installation activities, served as the basis for documenting the geologic and hydrogeologic conditions in the immediate vicinity of the Hamilton Landfill, which are discussed further below.

The site is located in the North Coastal Watershed basin of northeastern Massachusetts; within the sub-basin that drains to the Essex River. Regionally, groundwater flow is generally to the north/northeast towards Maple Swamp and Chebacco Lake. The site and vicinity have been heavily reworked through historic activities including gravel mining, excavation and filling due to landfill operations, dewatering, and possibly peat mining. The landfill is located along the edge of a groundwater divide that bisects the disposal area along its north/south axis. Local groundwater and surface flow in the site area discharges either to Gravelly Pond, approximately 400 feet west of the landfill, or to wetlands that drain to Maple Swamp. The surficial geologic deposits in the area consist of sand and gravel deposits (west near Gravelly Pond), swamp deposits, and bedrock outcrops overlain by deposits of glacial till. Bedrock at the site is Cape Ann Granite (Dennen, 1991). The hydrogeology and surficial and bedrock geology are described in further detail below.

The site-specific geology has been characterized based on the results of advancing borings in six locations along the landfill perimeter. The borings were advanced for the purposes of installing the CSA groundwater monitoring well network (MW-1 through MW-6), as well as confirming the depth to bedrock at several locations. Bedrock was confirmed by coring a minimum of 5-feet into the bedrock surface.

At each boring location a monitoring well was installed. At location MW-4, the depth of overburden (38 feet) and shallow depth to groundwater (4 feet) was sufficient to install a couplet well, where the shallow well was screened across the water table and the bottom of the deep well was set just above the bedrock surface. A couplet well was also installed at location MW-6, where the shallow overburden depth (37 feet) and depth to groundwater (18.5 feet) required that the well screen for the deep well be set within the bedrock to obtain a reasonable well screen separation.

The monitoring well locations are shown on the CSA Base Plan (Figure 1-2). The wells were installed in November 2006 and slug tested in January 2007 to determine aquifer hydraulic conductivity. Table 4.1 summarizes the well construction depths and screened intervals for the eight groundwater monitoring wells installed during the CSA.

TABLE 4.1
GROUNDWATER MONITORING WELL INSTALLATION SUMMARY

Well ID	Ground Elevation[1]	Top of PVC Elevation[2]	Boring Depth (fbgs)	Screened Interval (fbgs)	Depth to Bedrock (fbgs)
MW-1	60.33	62.91	15	5 – 15	NE
MW-2	66.14	68.43	14.5	2 – 7	13
MW-3	67.70	70.20	17	5 – 15	12
MW-4S	67.22	69.70	12	2 – 12	38
MW-4D	67.26	69.80	43	27 – 37	
MW-5	70.95	73.80	34	7 – 17	27
MW-6S	71.56	74.43	27	17 – 27	37
MW-6D	71.43	74.21	44	39 – 44	

1. Ground elevation based on USGS National Geodetic Vertical Datum (NGVD) of 1929.
2. Top of PVC is measuring point from which groundwater levels were recorded. Elevations are NGVD 1929.
fbgs = Feet below ground surface.
NE = Bedrock not encountered.

All monitoring wells were drilled by New Hampshire Boring of Londonderry, New Hampshire using either hollow-stem auger or drive-and-wash drilling methods. An S E A geologist observed drilling operations and logged soils and bedrock cores. Bedrock coring

was done at wells MW-3, MW-4D, MW-5, and MW-6D to confirm the depth to bedrock and characterize bedrock geology (limited coring was performed at MW-2 as required to set a shallow well at this location). Well MW-4D is screened in the overburden, immediately above the bedrock surface and MW-6D is fully screened in bedrock. These wells provide information regarding groundwater quality at the bedrock interface or within the fractured top of bedrock. Well boring logs and monitoring well construction logs are provided in Appendix D.

Regional Geology

The Marblehead North quadrangle is underlain by Ordovician plutonic rocks of the Cape Ann Granite formation (Dennen, 1991). These rocks are highly resistant and exhibit a northwest-northeast trending conjugate fracture system. Due to the underlying highly resistant bedrock pluton, topography in the region is primarily controlled by bedrock structure, with relatively minor modification by glacial processes. Consequently, a typical landscape is expressed as linear bedrock valleys aligned with the regional northeast/northwest trend of conjugate fracture and fault zones. The former northeast-trending glacial margin retreated in a northwesterly direction, depositing outwash sand and gravel in its wake (Carnevale, 1979).

The surficial deposits in the area generally consist of a thin veneer of till, especially on topographic highs, with valleys filled with swamp muck, outwash alluvium, and/or artificial fill. Several of these typical characteristics are observed in the site area. It should also be noted that on-site surficial gravel deposits in the area have likely been reworked by mining and other human activity (Reed, 1976), as discussed further below. The regional surficial geology for the Marblehead North quadrangle has been compiled digitally by the USGS (Stone, et. al, 2006, OFR 2006-1260-B), and is shown on Figure 4-1.

The Cape Ann Granite ranges from quartz rich alkalai feldspar granites to alkalai feldspar syenites and diorites. Generally the bedrock texture is unfoliated, fine-medium to coarse grained. Bedrock in the vicinity of the site is mapped as alkalai-feldspar syenite with quartz content ranging from less than 5% to 15% (Beverly Syenite facies, Clapp, 1910). A major northeast trending fault is mapped approximately 700 feet to the southeast of the site, as shown on the Bedrock Geology Map, provided as Figure 4-2.

Site Geology

As noted in the ISA, the area of the Hamilton Landfill is characterized by numerous bedrock outcrops separated by lakes (Gravelly Pond, Round Pond) and large areas of swamp land (Maple Swamp east of the site). The understanding of site geology has been characterized based on several sources, including: 1) the compilation of previous studies presented in the Hamilton ISA Report; 2) the January 1996 Manchester Landfill CSA Report; 3) the May 1996 Zone II Delineation for Round Pond Wells 1 and 2; and 4) stratigraphic information obtained from the borings advanced by S E A during the Hamilton Landfill CSA field investigations. The site geology is depicted graphically on the Bedrock Contour and Geologic Cross-Section Plan, provided as Figure 4-3, and a discussion of the site geology is presented below.

The Surficial Geology Map (Figure 4-1) depicts coarse surficial deposits at the site, which is consistent with site boring observations. The overburden at the site generally ranges from nonexistent to less than 50 feet thick, and consists of gravelly coarse sands overlying finer deposits of sand, silt and some clay. Site observations are consistent with regional reports of thicker overburden deposits in valleys, with thinner deposits at higher elevations (Carnevale, 1979). Surficial deposits in areas of the site have been heavily reworked by historic gravel excavation assumed to have occurred in the 1940s through 1960s, and from landfilling activities performed in the 1970s and early 1980s, during which time the sandy soil deposits were excavated for use as landfill daily cover material. Coarse sand and gravel deposits surrounding Gravelly Pond are confirmed by previous investigations, and consistent with the USGS surficial geology mapping.

As shown on the geologic cross-sections provided in Figure 4-3, the sandy overburden deposits overlying bedrock have been removed down close to the groundwater table and replaced with landfill material. The deeper undisturbed materials appear to become finer to the east with distance from Gravelly Pond, consistent with a deltaic deposit (Reed, 1976). The landfill itself, consisting of Area 1 to the south and Area 2 to the north, has an estimated maximum fill thickness ranging between 30 and 40 feet deep.

Figure 4-1 depicts swamp deposits to the north and southeast of the site, consistent with the presence of wetlands and observations of peat. A layer of peat 7 feet thick was observed in MW-1, located in the valley adjacent to the north end of the landfill (Figure 4-3, Section C-C). The presence of peat deposits in this low lying area is consistent with Carnevale's description of the formation of postglacial swamp deposits filling in valleys and low lying areas of the

region. East of the landfill, Maple Swamp is a large wetland complex that drains to Chebacco Lake approximately one-half mile north of the landfill. The USGS Surficial Geology Map is displayed on a topographic base from 1970 and depicts a bedrock ridge east of the site, showing it as hydraulically isolated from Maple Swamp. However, in the 1970s and early 1980s a groundwater ditch was excavated in the northern end of the site for the purposes of lowering the groundwater table beneath the Area 2 portion of the landfill. In 1980 this work breached a segment of the bedrock ridge that separates the landfill site from Maple Swamp, resulting in groundwater east of the divide draining to the swamp. Boring logs from investigations performed in 1965 indicate that the soils in Maple Swamp consist of a 5 to 10-foot layer of peat underlain by clay and fine sands.

Bedrock at the site was cored in four locations (MW-3 through MW-6), for a total of 22 feet of bedrock core collected. Three feet of additional core was collected at MW-2, but this material turned out to be a boulder several feet above the bedrock surface. Glacial till was not encountered in any of the landfill borings. The coring summary and rock core descriptions are presented below in Table 4.2. Based on descriptions of these cores, bedrock observed at the site is consistent with published descriptions of the Cape Ann Granite. As shown in Table 4.2, core recovery and competence varied widely. Bedrock coring times ranged from 1 to 12 minutes per foot. Rock Quality Designation (RQD) varied from excellent at MW-5 to poor at MW-4.

TABLE 4.2
BEDROCK CORING SUMMARY

Well ID	Run Depth (ft)	Total Run Length (ft)	Coring Time (min/ft)	RQD %	RQD Description	Rock Description
MW-3	12-17	5	7-10	56	Fair	Gray-white-pink f-m grained felsic Granite, high angle fractures, fresh
MW-4	38-43	5	5-6	39	Poor	Gray-white-pink f-m grained felsic Granite, high angle fractures, fresh
MW-5	27-34	7	7-12	95	Excellent	Gray-white m. grained Granodiorite, some iron staining in low angle fractures, fresh
MW-6	38.5-43.5	5	5-9	58	Fair	Gray-white m. grained Granodiorite, some iron staining in low angle fractures, fresh

The bedrock contouring shown on Figure 4-3 was generated based on the observed depth to rock in the borings, field observations of outcropping bedrock, previous investigations, and regional topographic and geologic maps. Because bedrock structure generally controls

topography, the depth to bedrock at the site varies with topography, ranging from 0 to 50 feet below grade, with outcropping in many locations across the site and surrounding areas. As shown on Figure 4-3, the bedrock surface is quite variable, with elevations beneath the landfill ranging from approximately 30 feet to 90 feet (NGVD 1929). The bedrock ridge lying beneath the central portion of the landfill is a major feature of the bedrock surface, and influences the site hydrogeology.

Site Hydrogeology

The surficial topography at the site is highly variable; declining steeply away from the landfill itself, and dropping steeply to the west to the shore of Gravelly Pond. The terrain to the south between the Manchester Landfill and the Hamilton Landfill is very flat, as is the terrain to the north and northeast of the Hamilton Landfill. Ground elevation ranges from approximately 100 feet (NGVD 1929) in the central part of the site, to between 55 and 65 feet in the wetlands and pond shorelines surrounding the landfill. Surface drainage flows away from the axis of the landfill. Surface drainage from the southern end of the landfill flows into the wetland complex that separates the site from the Manchester landfill, which drains to the southeast and eventually to Maple Swamp. Maple Swamp drains to Chebacco Lake which ultimately drains to the Essex River.

The main natural features influencing the site hydrogeology are the presence of the bedrock ridge underlying the center of the site and Gravelly Pond. The steep hydraulic gradient between the bedrock ridge under the center of the landfill and Gravelly Pond forces groundwater flow towards the west of the divide. In many ways, human activity has modified surface and groundwater drainage patterns. The manmade groundwater ditch adjacent to the north slope of the landfill drains groundwater (and possibly surface water) away from the northern portion of the site and provides a direct drainage connection to Maple Swamp. This hydraulic connection did not exist prior to 1980. This is discussed in more detail below.

Construction of Groundwater Ditch and Pond at Northern End of Site

One of the earliest studies conducted at the site was CDM's July 1976 *Sanitary Landfill Feasibility Study*. The study included a surficial geology and groundwater investigation prepared by Donald E. Reed, Consulting Geologist. Reed's study includes a reference that a gravel pit occupied the western and northern portions of the site prior to its use as a landfill. This reference is supported by historic topographic information, where USGS mapping of the site from 1945 shows pre-landfill topography varying between elevation 70 and 80 (NGVD

1929), whereas USGS mapping from 1970 shows a depression area dropping to elevation 60 where the landfill is currently located.

Reed's 1976 study notes that soils in the northern portion of the site (land under what is now Area 2 of the landfill and extending to the property line to the east) served as a source of cover soils for the landfill. According to Reed, the cover soils obtained from this area were excavated to the water table. As part of the 1976 study, Reed excavated thirteen test pits north and east of the existing landfill. These test pits showed that the water table was within 2-feet of the ground surface. Reed used this test pit information, as well as boring logs and water elevations from a groundwater ditch that runs west-to-east on the northern side of the site, to map the groundwater divide and groundwater contours in the vicinity of the divide (see Groundwater Divide discussion below).

The information provided in Reed's 1976 hydrogeologic study establishes that the ditch located at the northern end of the site intercepts the groundwater table. It is presumed that the ditch was originally excavated (at some time prior to 1976) to help keep the groundwater table below the ground surface as soils were being excavated in this area for use as landfill daily cover. Shortly after landfill operations transitioned to Area 2 in the summer of 1978, a portion of the groundwater ditch was relocated further north and extended further west (towards the groundwater divide) as required to re-route the ditch to the north of Area 2.

As noted in CDM's 1991 ISA Report, the ditch provided a means for lowering groundwater in the Area 2 portion of the site. To assist in this effort, in 1980 the final length of the ditch (located in the Town of Essex) was blasted to remove a ledge outcropping that prevented the ditch from draining to Maple Swamp. Although constructed as a ditch, the channel effectively acts as a stream and is shown as such on the most recent USGS topographic mapping of the site (refer to Figure 1-1). At around this time, (between 1979 and 1982) the 1.6 acre manmade pond, referred to herein as the large dug pond, was constructed in the northeastern corner of the site. Although SEA could find no documentation referencing the construction of the pond, it is assumed it was constructed to further aid in lowering groundwater elevations in the northern end of the site.

Groundwater Divide

One of the principal findings presented in Reed's hydrogeologic study was the documentation of a localized groundwater divide oriented in a northwest to southeast direction. The 1976 groundwater mapping showed that the majority of the Area 1 portion of

the landfill is on the western side of the divide with groundwater flowing west to Gravelly Pond and the majority of Area 2 is on the eastern side of the divide with groundwater flowing east to Maple Swamp. Reed postulated that the divide is most likely the result of a ridge of relatively impervious glacial till or bedrock underlying the site, with its crest at the approximate location of the divide (for reference purposes, the location of the divide delineated Reed is shown on the CSA Base Plan).

One of the objectives of the CSA was to confirm the presence and approximate orientation of the groundwater divide mapped by Reed. To this end, the six shallow groundwater wells (MW-1, MW-2, MW-3, MW-4S, MW-5, and MW-6S) installed at the Hamilton Landfill were used in combination with four shallow groundwater wells that comprise part of the Manchester Landfill monitoring well network (MW-1S_{manch}, MW-2S_{manch}, MW-5S and MW-6S_{manch}). In addition, three surface water piezometers (PZ-1, PZ-2, and PZ-3), installed by S E A as part of the CSA were also used to map groundwater in the site area. Two piezometers (PZ-1 and PZ-2) were installed in the groundwater ditch north of the landfill and the third piezometer (PZ-3) was installed in the large dug pond located in the northeast corner of the site. The locations of the piezometers and Manchester monitoring wells are shown on the CSA Base Plan (Figure 1-2).

CSA Groundwater Contours

Water table elevations were measured from the Hamilton Landfill well and piezometer network and selected Manchester Landfill wells during the four rounds of CSA water quality monitoring: March 2007, July 2007, October 2007, and January 2008. Due to coordination requirements with the Manchester Department of Public Works, water level measurements from the four Manchester wells began during the second round of CSA water quality monitoring (July 2007). The groundwater elevations recorded during the four rounds of CSA monitoring are summarized in Table 4.3

Table 4.3
Water Level Measurements
Hamilton Landfill Comprehensive Site Assessment

OWNER	LOCATION	SCREEN DEPTH (Feet below ground surface)	TOP OF PVC ELEVATION (Feet) (1)	WATER TABLE ELEVATION (feet above mean sea level, NGVD 1929)							
				CSA ROUND 1 5-Mar-07		CSA ROUND 2 5-Jul-07		CSA ROUND 3 25-Oct-07		CSA ROUND 4 23-JAN-08	
MONITORING WELLS											
HAMILTON	MW-1	5 - 15	62.91	58.53		57.84		55.48		58.33	
	MW-2	2 - 7	68.43	60.09		DRY		DRY		DRY	
	MW-3	5 - 15	70.20	63.82		62.33		60.65		63.65	
	MW-4S	2 - 12	69.70	63.77		62.95		61.18		63.75	
	MW-4D	27 - 37	69.80	63.73		63.09		61.34		63.67	
	MW-5	7 - 17	73.80	61.64		60.92		58.01		61.98	
	MW-6S	17 - 27	74.43	54.98		53.21		49.85		53.19	
	MW-6D	39 - 44	74.21	55.38		54.19		50.77		54.21	
MANCHESTER	$MW\text{-}1S_{manch}$	9.2 - 13.8	66.10	Not Gauged		63.01		61.31		63.55	
	$MW\text{-}2S_{manch}$	15.2 - 24.8	67.15	Not Gauged		63.19		61.53		63.59	
	$MW\text{-}5S_{manch}$	5.2 - 9.8	68.06	Not Gauged		Could not locate		61.09		63.22	
	$MW\text{-}6S_{manch}$	6.4-11.4 (See Note 6)	68.32	Not Gauged		63.22		63.20		63.56	
PIEZOMETERS											
HAMILTON			PIEZOMETER ELEVATION, Top of Pipe cap off (Feet)	WATER LEVEL INSIDE (groundwater)	WATER LEVEL OUTSIDE (surface water)	WATER LEVEL INSIDE (groundwater)	WATER LEVEL OUTSIDE (surface water)	WATER LEVEL INSIDE (groundwater)	WATER LEVEL OUTSIDE (surface water)	WATER LEVEL INSIDE (groundwater)	WATER LEVEL OUTSIDE (surface water)
	PZ-1	2-3	61.92	60.11	60.07	59.13	DRY	DRY	DRY	60.18	60.04
	PZ-2	2-3	56.88	54.82	54.67	54.67	54.42	54.27	54.22	See Note 7	See Note 7
	PZ-3	2-3	56.94	54.88	54.85	54.64	54.66	54.49	54.49	55.36	55.19

Notes:

1. S E A surveyed the the Hamilton groundwater wells and piezometers, along with the four Manchester shallow groundwater wells on December 4th and 5th of 2007. Manchester well MW-2S (top of pvc) was used as the benchmark. (MW-2S = 67.15 NGVD 1929, per 1996 Manchester CSA report, prepared by CDM)
2. Elevations of Manchester wells MW-1S, MW-2S and MW-5S were obtained from Table 2-1 of January 1996 Pine Street Landfill Comprehensive Site Assessment, prepared by CDM.
3. Groundwater levels at the monitoring wells were measured from the top of PVC riser.
4. Water depths were measured from the top of the piezometer drive pipe (cap off) from both inside and outside the casing at the three piezometers locations.
5. Manchester well screen depths provided in Appendix B of July 1996 Manchester CSA Report, prepared by CDM.
6. Well construction information is not available for Manchester well MW-6S. The depth of the well was measured by S E A on 12/5/07 (a 5-foot well screen is assumed).
7. During the Round 4 sampling event, piezometer PZ-2 was inaccessible because of thin ice and could not be measured.

Based upon the four rounds of CSA monitoring, high groundwater conditions were observed during the March 2007 round (Round 1) and January 2008 round (Round 4). Since the January 2008 round included water level information from the Manchester wells, it was this round that was used to map representative seasonal high groundwater conditions at the site. Low groundwater conditions were observed during the October 2007 monitoring round (Round 3), where water levels at all monitoring well locations were approximately 2 to 3 feet lower than the seasonal high elevations (and piezometer PZ-1 was dry).

Using the data provided in Table 4.3, groundwater contour plans were generated for the October 2007 and January 2008 monitoring rounds. The high and low groundwater contour plans are provided in Figure 4-4. The contour plans confirm the presence of a groundwater divide as previously mapped by Reed in 1976. The groundwater contour plans show the divide runs roughly along the north-south axis of the landfill, and appears to curve towards the west (away from the landfill) in the northern portion of the site. This observation is consistent with Reed's, although Reed only mapped a divide along the northerly portion of the landfill. The MassGIS Subbasin datalayer also shows a groundwater divide curving around the east edge of Gravelly Pond near the landfill, although the site specific information indicates the MassGIS delineation should be shifted slightly to the east to fall along the center of the landfill. This divide is interpreted as a bedrock ridge underlying the landfill that causes groundwater flow to split to either side.

The local groundwater flow patterns are best visualized on the Groundwater Contour Plans (Figure 4-4) and the geologic cross-sections provided on the Bedrock Contour and Geologic Cross-Section Plan (Figure 4-3). As shown on these figures, the groundwater table in the vicinity of the Manchester Landfill forms a broad ridge, to the south of the site. Towards, the center of the Hamilton Landfill the ridge narrows, driving steeper gradients in the northern portion of the landfill. The hydraulic gradients associated with groundwater flow at the site are discussed below.

Hydraulic Gradients

Horizontal Gradients

Horizontal hydraulic gradients (i) were estimated under high and low groundwater conditions using the contour intervals depicted on Figure 4-4. Localized gradients were interpreted from the contour maps at each monitoring well location that was clearly on one side or the other of the divide. Wells MW-1, 2, and 3 are located on the east side of the divide. Wells MW-5 and 6 clearly lie west of the divide. The average horizontal gradient was calculated east and

west of the divide under high and low groundwater conditions. The average high and low groundwater gradients calculated for each side of the divide were then averaged to generate a typical representative horizontal gradient east of the divide (heading towards Maple Swamp) and west of the divide (heading towards Gravelly Pond). The horizontal gradients calculated for the site are summarized in Table 4.4.

TABLE 4.4
SUMMARY OF HORIZONTAL HYDRAULIC GRADIENTS

Date	East of Divide			West of Divide		
	Location	Gradient, *i* (ft/ft)	Average Gradient	Location	Gradient, *i* (ft/ft)	Average Gradient
October 2007 (Low Groundwater)	MW-1	0.003	0.0036	MW-5	0.025	0.0255
	MW-2	0.004				
	MW-3	0.004		MW-6S/D	0.026	
January 2008 (High Groundwater)	MW-1	0.005	0.004	MW-5	0.013	0.0165
	MW-2	0.006				
	MW-3	0.0014		MW-6S/D	0.02	
Typical Gradient	**0.0038**			**0.021**		

As shown in the table, the representative gradient east of the divide is 0.0038, whereas the gradient west of the divide is roughly five times higher at 0.021. This is a clear illustration of the influence of the bedrock ridge under the landfill, in combination with the hydraulic control exerted by Gravelly Pond. In contrast, the gradual gradient towards Maple Swamp is reflected to the east of the landfill.

The typical gradients calculated east and west of the divide (0.0038 and 0.021, respectively) were used to calculate typical seepage velocities in each flow regime. The seepage velocity estimates are presented later in this chapter.

Vertical Gradients

Vertical hydraulic gradients were obtained from three piezometers (PZ-1, PZ-2 and PZ-3), as well as the two monitoring well couplets, MW-4S/D and MW-6S/D. PZ-1 is located in a small dug pond at the crest of the groundwater divide, at the headwaters of the groundwater ditch. PZ-2 and PZ-3 provide vertical gradient information for the component of groundwater flow that drains to Maple Swamp, where PZ-2 is located in the downstream portion of the groundwater ditch and PZ-3 is located in the 1.6-acre large dug pond. Each

piezometer was advanced to approximately 3 feet below the bottom of the water body and has a 12-inch screen interval at its base (a typical piezometer installation detail is included in Appendix D). Well couplet MW-4S/D provides vertical gradient information in the southern portion of the site, whereas MW-6S/D, located west of the groundwater divide, provides vertical gradient information for the component of groundwater flow that drains to Gravelly Pond.

Table 4.5 summarizes the vertical gradients calculated at the piezometer locations and Table 4.6 summarizes the vertical gradients calculated at the well couplet locations. With respect to the piezometers, the hydraulic gradient is the difference between the groundwater elevation measured from within the piezometer and the surface water elevation recorded at the piezometer's exterior. Vertical gradient at the well couplets is the difference between the groundwater elevation in the deep well (screened at or within the bedrock surface) and shallow well (screened across the water table). Positive vertical gradients are representative of upward groundwater flow and negative vertical gradients are representative of downward flow.

TABLE 4.5
SUMMARY OF VERTICAL HYDRAULIC GRADIENTS - PIEZOMETERS

Monitoring Location	CSA Round	Groundwater Elevation[1] (ft)	Surface of Water Body Elevation[1] (ft)	Gradient[2] (ft/ft)
PZ-1	March 5, 2007	60.11	60.07	0.04
	July 5, 2007	59.13	Dry	---
	October 25, 2007	Dry	Dry	---
	January 23, 2008	60.18	60.04	0.14
PZ-2	March 5, 2007	54.82	54.67	0.15
	July 5, 2007	54.67	54.42	0.25
	October 25, 2007	54.27	54.22	0.05
	January 23, 2008	CNM[3]	CNM[3]	---
PZ-3	March 5, 2007	54.88	54.85	0.03
	July 5, 2007	54.64	54.66	-0.02
	October 25, 2007	54.49	54.49	0.00
	January 23, 2008	55.36	55.19	0.17

1. Elevations measured from top of piezometer (cap open). Elevation datum is NGVD 1929.
2. A positive value indicates a gradient vertically upward (groundwater discharges to surface water body). A negative value indicates a gradient vertically downward (surface water discharges to groundwater).
3. CNM = Could not Measure (thin ice at PZ-2 prevented data collection at this location during the January 2008 event).
4. Water levels obtained from Table 4.3.

As shown in Table 4.5, positive vertical gradients were consistently recorded from the groundwater ditch piezometers (PZ-1 and PZ-2) during the four rounds of CSA monitoring,

indicating upward flow of groundwater into the ditch. This is logical because the ditch was originally excavated to intercept groundwater. As would be expected, PZ-2 showed the highest vertical gradients. Piezometer PZ-3, located in the large dug pond, had positive vertical gradients during the first and fourth rounds of CSA monitoring. These rounds were representative of seasonal high groundwater conditions, where the vertical gradients reveal that groundwater is discharging to the pond. During the July 2007 monitoring event (Round 2) a slight negative gradient was recorded, indicating a downward vertical gradient (pond discharging to groundwater) can also be present at the pond. Interpretation of the gradients recorded at the three piezometer locations indicates that groundwater on the eastern side of the groundwater divide has predominantly an upward vertical flow component.

TABLE 4.6
SUMMARY OF VERTICAL HYDRAULIC GRADIENTS – MONITORING WELL COUPLETS

CSA Round	4S/4D Couplet Groundwater Elevations[1]			6S/6D Couplet Groundwater Elevations[1]		
	MW-4D	MW-4S	Gradient[2] (ft/ft)	MW-6D	MW-6S	Gradient[2] (ft/ft)
March 5, 2007	63.73	63.77	-0.04	55.38	54.98	0.40
July 5, 2007	63.09	62.95	0.14	54.19	53.21	0.98
October 25, 2007	61.34	61.18	0.16	50.77	49.85	0.92
January 23, 2008	63.67	63.75	-0.08	54.21	53.19	1.02

1. Elevation datum is NGVD 1929.
2. A positive value indicates a gradient vertically upward. A negative value indicates a gradient vertically downward.
3. Water levels obtained from Table 4.3

The gradients for the well couplets are consistent with observations of groundwater flow patterns. Well couplet MW-4S/D, located at the top of the flat part of the divide, south of the landfill, varied between low to moderate upward and downward gradients. This is consistent with the flat gradient in this area, which would be more likely to vary seasonally. In contrast, the couplet of MW-6S/D had pronounced upward vertical gradients for all measurements. This is consistent with the significant hydraulic control represented by Gravelly Pond, which drives the steep vertical gradients towards the pond, where the pond represents a groundwater discharge zone.

Hydraulic Conductivity Testing

In order to define the hydraulic characteristics of the aquifer system, rising head slug tests were performed on wells MW-1 through MW-6D on January 22, 2007. The test consists of removing a slug of water from the well and recording the rate of recovery in the well. Due to the rapid water level recovery in the wells, automatic data logging pressure transducers (In-

Situ Troll and Rugged Reader) were used to obtain measurements at 1/3-second intervals during the early and middle portions of the recovery process.

The AquiferTest software program (v4.1, Waterloo Hydrogeologic), utilizing both the Hvorslev (1951) and the Bouwer and Rice (1976) solutions, was used for data analysis. The AquiferTest Hvorslev Method is appropriate for unconfined wells that fully penetrate the aquifer (MW-3, MW-4D). The Bouwer and Rice method can be used for either fully or partially penetrating wells in unconfined aquifers. The "mid-time" recovery data are considered to be the most representative of aquifer properties (Bouwer and Rice, 1989), in order to reduce the effects of sand pack drainage. Because the sand pack drained rapidly, generally, data from the interval between 5 and 20 seconds into the test was used for the curve fit to determine hydraulic conductivity. The hydraulic conductivity values are summarized in Table 4.7.

TABLE 4.7
HYDRAULIC CONDUCTIVITY RESULTS

Well ID	Hydraulic Conductivity, *k*			Screened Formation
	Hvorslev (ft/d)	Bower & Rice (ft/d)	Average (ft/d)	
MW-1		9.6 24.5	17.1	Peat, sand & gravel
MW-2		16 15.5	15.8	sandy silt
MW-3	42 30.3	33 25.1	32.6	gravelly sand; boulder
MW-4S		45 50	47.5	fine to coarse sand
MW-4D	9.88 9.95 11.7	8.5 7.8 9.08	9.5	clay and sand
MW-5		20 29.8 36	28.6	silty sand; peat
MW-6S		30.4 25 31	28.8	silty sand with gravel
MW-6D		25.8 15 60.4	33.7	Bedrock

The values of overburden hydraulic conductivity by the Bower-Rice method ranged from a low of 9.5 feet per day at MW-4D to a high of 47.5 feet per day at MW-4S. These values are within the range reported for clean sand to silty sand (Freeze and Cherry, 1979) and consistent with the descriptions of the deposits in which the wells are installed. MW-4S is screened within coarse to fine sand which is consistent with its relatively high conductivity value. MW-4D is screened in clay and sand, indicative of a lower conductivity. Bedrock at the site is granite with varying degrees of competence. Rock quality designation (RQD) values for cores taken at the site range from excellent (95%, MW-5) to poor (39%, MW-4). Specific RQDs recorded at each boring location are summarized in Table 4.2. The hydraulic conductivity estimated for bedrock based on slug testing at MW-6D, is 33.7 feet per day. This conductivity is consistent with values for fractured igneous rock (Freeze and Cherry 1979).

Copies of the slug test recovery data, plotted on a semi-log scale versus time scale, are provided in Appendix I.

Seepage Velocity Calculations

Having calculated typical hydraulic gradients (i) east and west of the groundwater divide, as well as average hydraulic conductivities (k) at each of the monitoring wells, the seepage velocities (V_s) at these locations were calculated using the following equation:

Seepage velocity (V_s):

$$v_s = \frac{k \cdot i}{\eta}$$

where: k = calculated hydraulic conductivity

i = measured hydraulic gradient

η = estimated porosity

The calculated seepage velocities are summarized in Table 4.8. Using the typical horizontal hydraulic gradients for each side of the divide (as presented in Table 4.4) and using an assumed porosity of 0.25 for sands, the calculated groundwater seepage velocities for the overburden range from 0.24 feet per day for MW-2 to 2.42 feet per day for MW-6S. Averaging the individual seepage velocities calculated on each side of the divide yields a typical seepage velocity east and west of the divide. Table 4.8 shows these "average"

seepage velocities, where the average velocity west of the divide (2.41 ft/day) is more than seven times greater than that calculated east of the divide (0.33 ft/day). With respect to bedrock, seepage velocity generally is much greater than in overburden due to the smaller value for porosity, which can be several orders of magnitude less than that encountered in soils. Because no values are available for the porosity of the local bedrock, seepage velocities were not calculated for bedrock.

TABLE 4.8
HYDRAULIC CHARACTERISTICS

Location with respect to Groundwater Divide	Monitoring Well	Hydraulic Conductivity, k (ft/day)	Hydraulic Gradient, i (ft/ft- from Table 4.4)	Seepage Velocity, v_s (ft/day)	Average Seepage Velocity (ft/day)
East	MW-1	17.1	0.0038	0.26	0.33
	MW-2	15.8	0.0038	0.24	
	MW-3	32.6	0.0038	0.50	
West	MW-5	28.6	0.021	2.40	2.41
	MW-6S	28.8	0.021	2.42	
	MW-6D	33.7	0.021	See Note 1	

1. Seepage velocity not calculated at MW-6D, well screened within bedrock.
2. Seepage velocities not calculated for MW-4S/D as the couplet straddles the mapped groundwater divide.

The markedly higher seepage velocities for MW-5 and MW-6S illustrate the hydraulic influence of Gravelly Pond. The combination of the high hydraulic conductivity and steep gradients associated with the coarse gravel deposits surrounding the pond result in very high seepage velocities.

CHAPTER FIVE
Environmental Assessment

Introduction

Chapter Five presents an overview of regional environmental data and a detailed description of the groundwater, surface water, and sediment monitoring results obtained during the CSA field investigations.

Regional Environmental Setting

GIS-based solid waste assessment maps prepared by the Massachusetts Executive Office of Environmental Affairs identify general land use and priority resource features within the Town of Hamilton. The Land Use and Priority Resource Maps are provided as Figures 1-3 and 1-4, respectively. As shown on the Priority Resource Map, the nearest public water supply wells to the landfill are Round Pond Wells 1 and 2, located on the northern and western edge of Round Pond. Round Pond is located immediately west of Gravelly Pond and like Gravelly Pond, the Round Pond wells, although located in Hamilton, are owned and operated by the Town of Manchester. These wells were installed to supplement Manchester's water supply, where water from the wells is pumped as needed to Gravelly Pond, which is Manchester's primary water supply. As shown on Figure 1-4, the Hamilton Landfill is not located within the Zone II of the Round Pond wells. The boundary of the Zone II closest to the landfill follows Gravelly Pond's western bank, which is approximately 2,200 feet west of the landfill.

Gravelly Pond covers an area of approximately 57 acres, and has a small surface watershed of approximately 145 acres. Inflow to the pond is from precipitation and surface runoff, groundwater discharge, and occasional supplementary pumping from the Round Pond wells. Gravelly Pond is designated as a Class A surface water supply. As such, a 400-foot protection area (Zone A) extends outward from the bank of the pond. The Zone A protection area is shown on Figure 1-4; the outer boundary of the Zone A runs along Chebacco Road just to the west of the landfill. The approximate location of the Zone A protection area is also shown on the CSA Base Plan (Figure 1-2), where the boundary was estimated by offsetting a distance of 400 feet from the edge of water. As shown on Figure 1-2, this offset places the landfill slightly beyond the limit of the Zone A protection area for Gravelly Pond.

The Town of Hamilton has several public water supply wells that service the majority of the Town. The closest well is located approximately 1.8 miles northwest of the landfill (School Street Well, DEP supply number 3119000-02G) and the Zone II for the well is located over 1.3 miles northwest of the landfill. The School Street well and the Town's two other active public water supply locations (Patton Well: 3119000-03G; and Idlewood well field: 3119000-04G through 08G) and their respective Zone IIs are shown on Figure 1-4. Figure 1-4 also shows the location of a third public water supply well (Bridge Street Well, supply number 3119000-01G), however, this well has been inactive since 1974.

The landfill is located on approximately 50-acres of Town-owned land in a residentially-zoned area of Town. Residential development in the vicinity of the landfill is sparse and limited to single family homes located north of the site along Chebacco Road, where the closest home is located approximately 750 feet north of the landfill. These homes rely on private wells for their drinking water as the Town's water supply does not extend to the majority of Chebacco Road. The only other development in the site area is the Town of Manchester's Gravelly Pond water treatment plant, located approximately 250 feet west of the landfill, and the capped Manchester Landfill, which is also the site of that Town's open-air solid waste transfer station. The transfer station is located approximately 800 feet south of the site (refer to Figure 1-2 for the proximity of the Manchester Landfill to the Hamilton Landfill).

South of the landfill are wetlands that drain into the Maple Swamp wetland complex located immediately east and northeast of the site. The DEP's Priority Resource Map (Figure 1-4) depicts this area as supporting estimated habitats of rare wildlife. Vernal pools are also identified in the wetland area south of the landfill. Based on this mapping information, S E A contacted the Massachusetts Division of Fisheries and Wildlife (DFW) Natural Heritage and Endangered Species Program (NHESP) to obtain confirmation regarding the presence of endangered species in the site area. NHESP, in its letter dated May 7, 2008, informed S E A that the Blue-Spotted Salamander, a state-listed rare species, is located in the vicinity of the site. A copy of the NHESP letter is provided in Appendix F.

Sampling and Analytical Program

As described in Chapter One, the Sampling and Analysis Plan for the CSA activities consisted of groundwater, surface water, sediment and soil gas monitoring. The DEP-approved monitoring program is summarized in Table 5.1.

TABLE 5.1
CSA ENVIRONMENTAL MONITORING PROGRAM

Media	Monitoring Round	Sample Location	Analytical Parameters
Groundwater	Rounds 1 and 3	MW-1, MW-2, MW-3, MW-4S/4D, MW-5, MW-6S/D	VOCs(1), Dissolved Metals(2), General Chemistry(3) SVOCs(4), PCBs and Pesticides (5)
	Rounds 2 and 4	MW-1, MW-2, MW-3, MW-4S/4D, MW-5, MW-6S/D	VOCs(1), Dissolved Metals(2), General Chemistry(3)
Surface Water	Rounds 1 and 3	SW-1, SW-2, SW-3	VOCs(1), Dissolved Metals(2) General Chemistry(3 SVOCs(4), PCBs and Pesticides (5)
Sediment	Rounds 1 and 3	SED-1, SED-2, SED-3	VOCs(1), Total Metals(2), SVOCs(4) PCBs and Pesticides(5)
Soil Gas	Rounds 1 through 4	SG-1 through SG-24	Lower Explosive limit (LEL) Percent Methane (% by volume in air) Percent Carbon Dioxide Percent Oxygen Hydrogen Sulfide in parts per million

Notes:

1. Volatile Organic Compounds (VOCs, EPA Method 8260).
2. Metals Analysis: Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, and Zinc.
3. General Chemistry (Groundwater and Surface Water): Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids (TDS), Chloride, Nitrate, Sulfate, Cyanide, Chemical Oxygen Demand (COD).
4. Semi-Volatile Organic Compounds (SVOCs, EPA Method 8270 – Acid and Base/Neutral Extractable Compounds including PAHs).
5. PCBs (EPA Method 8082) and Pesticides (EPA Method 8081A).

The results of the groundwater, surface water, and sediment sampling activities are presented in the remaining sections of this chapter. Chapter Six presents the results of the soil gas monitoring activities. Copies of the water quality and sediment laboratory analytical data are provided in Appendix G.

Groundwater

Upgradient and Downgradient Monitoring Locations

As part of the CSA monitoring program, S E A collected water levels from the eight groundwater wells installed around the Hamilton Landfill and from four monitoring wells that comprise a portion of the Manchester Landfill groundwater monitoring network. These

water levels were used to generate the CSA groundwater contour plans (Figure 4-4), described in greater detail in Chapter Four.

As shown on the groundwater contour plans, monitoring wells located south of the landfill (MW-3 and MW-4S/D) are located upgradient of the Hamilton Landfill. While upgradient wells would normally be considered as representing background conditions, groundwater quality in this area may be influenced by the immediately upgradient Manchester Landfill, as well as by mounding from the Hamilton Landfill. Accordingly, these wells were not considered representative of true background water quality conditions. Monitoring wells MW-2, MW-5, MW-6S/D, which flank the landfill to the east and west, were installed as downgradient monitoring locations. Monitoring well MW-1, located approximately 250 feet north of the landfill (and north of the west-to-east groundwater ditch that borders the north end of the site) is believed to be the least influenced by the landfill and, therefore, most representative of background groundwater conditions. This conclusion is based on the well location in relation to the landfill and the results of the groundwater contour mapping, which suggest that groundwater moving from the direction of the landfill is not intersecting the area of monitoring well MW-1.

Groundwater Analytical Results

Eight groundwater monitoring wells were installed surrounding the known landfill extent. Two wells, MW-4 and MW-6 were installed as couplets (designated MW-4S/D and MW-6S/D) to assess groundwater for the presence of dense contaminants that could be present at greater groundwater depths. S E A retained the services of Environmental Sampling Technology (EST) of Needham, Massachusetts to collect the groundwater samples. All samples were collected in accordance with the EPA's low flow sampling protocols.

Analytical results are presented for each well, with a discussion of general trends observed during each of the four monitoring rounds. Table 5.2, provided at the end of this chapter, summarizes the analytical results for each of the wells and compares the data to Massachusetts Contingency Plan (MCP) Reportable Concentrations (RC), Massachusetts Maximum Contaminant Levels (MMCLs), and Secondary Maximum Contaminant Levels (SMCLs). In addition to these standards, the groundwater results were also compared to MCP risk-based standards, however, the results of the risk-based comparison is presented in Chapter Seven as opposed to this chapter. Nevertheless, the following narrative does include references to risk-based standards and the reader is directed to Table 7.8, provided at the end

of Chapter Seven, for a comparison of the groundwater analytical results to the risk-based standards applicable to the site (GW-1 and GW-3 standards).

ROUND 1 – MARCH 2007

Round 1 samples were submitted to Alpha Woods Hole Labs (Alpha) of Westborough, Massachusetts for analysis for dissolved metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), organochlorine pesticides, and general chemistry parameters (total cyanide, alkalinity, chloride, nitrogen, nitrate, sulfate and chemical oxygen demand).

With the exception of dissolved arsenic, no analytes were reported above an applicable regulatory standard. A summary of the Round 1 groundwater results is provided below. For the purposes of the summary, total cyanide is presented separately from the other general chemistry parameters.

General Chemistry: Analytes detected above laboratory reporting limits in at least one monitoring well included chloride, nitrogen/nitrate, and sulfates. No analytes were reported at concentrations exceeding an applicable regulatory limit.

Total Cyanide: Total cyanide was not detected above laboratory reporting limits.

Metals: Metals detected above laboratory reporting limits in at least one monitoring well included arsenic, barium, calcium, iron, manganese, sodium and zinc. Dissolved arsenic was detected above the MMCL and RCGW-1 limit of 10 μg/L at 15 μg/L in monitoring well MW-4D. Iron was detected above SMCLs in monitoring wells MW-1, MW-2, MW-4D, MW-5, and MW-6D. Manganese was detected above its SMCL in monitoring wells MW-1, MW-2, MW-3, MW-4D, MW-5, and MW-6D.

Volatile Organic Compounds (VOCs): VOCs detected above laboratory reporting limits in at least one monitoring well included 1,2,4-trimethylbenzene, 1,2,5-trimethylbenzene, chlorobenzene, chloroform, cis-1,2-dichloroethene, ethyl ether, ethylbenzene, isopropylbenzene, methyl tertiary butyl ether (MTBE), n-butylbenzene, n-propylbenzene, naphthalene, xylenes, isopropyltoluene, and sec-butylbenzene. VOCs were not detected above applicable regulatory limits.

Semi-Volatile Organic Compounds (SVOCs): SVOCs were not detected above laboratory reporting limits.

Polychlorinated Biphenyls (PCBs): PCBs were not detected above laboratory reporting limits in any monitoring well.

Pesticides: No pesticides were detected above laboratory reporting limits.

ROUND 2 – JULY 2007

Round 2 sample analysis was limited to general chemistry, dissolved metals, cyanide, and VOCs. S E A notes that during Round 2 sampling, monitoring well MW-2 was dry. With the exception of dissolved arsenic, iron and manganese, no analytes were reported above an applicable regulatory standard. Round 2 results are summarized below.

General Chemistry: Analytes detected above laboratory reporting limits in at least one monitoring well included chloride, nitrogen/nitrate, and sulfates. No analytes were reported at concentrations exceeding an applicable regulatory limit.

Total Cyanide: Total cyanide was not detected above laboratory reporting limits.

Metals: Metals detected above laboratory reporting limits in at least one monitoring well in arsenic, barium, calcium, iron, manganese, sodium and zinc. Dissolved arsenic was detected above the MMCL and RCGW-1 limit of 10 μg/L at 24 μg/L at MW-4D. Iron and manganese were detected above their respective SMCLs in monitoring wells MW-1, MW-3, MW-4D, MW-5, MW-6S, and MW-6D.

Volatile Organic Compounds (VOCs): VOCs detected above laboratory reporting limits in at least one monitoring well included 1,2,4-trimethylbenzene, 1,2,5-trimethylbenzene, chlorobenzene, chloroform, cis-1,2-dichloroethene, ethyl ether, ethylbenzene, isopropylbenzene, methyl tertiary butyl ether (MTBE), n-butylbenzene, n-propylbenzene, naphthalene, xylenes, isopropyltoluene, and sec-butylbenzene.

ROUND 3 – OCTOBER 2007

Round 3 sampling parameters duplicated those collected during Round 1. Samples were analyzed for general chemistry, dissolved metals, VOCs, SVOCs, PCBs and pesticides. As

with the Round 2 event, monitoring well MW-2 was dry, preventing sample collection at this location.

General Chemistry: Analytes detected above laboratory reporting limits in at least one monitoring well included chloride, nitrogen/nitrate, and sulfates.

Total Cyanide: Total cyanide was detected in monitoring wells MW-3, MW-4S, MW-4D, MW-5, MW-6S and MW-6D at 7, 9, 6, 15, 7, and 7 µg/L, respectively. Although cyanide was detected in the groundwater during this round, none of the concentrations exceeded regulatory standards. S E A notes that the cyanide MMCL (200 µg/L), cyanide MCP groundwater risk characterization standards (200 and 30 µg/L for GW-1 and GW-3, respectively), and groundwater Reportable Concentrations (30 µg/L for RCGW-1 and RCGW-2) are compared to physiologically available cyanide, not total cyanide. As total cyanide generally reports at higher concentrations than physiologically available cyanide, and as all total cyanide results were less than applicable standards, the results observed in Round 3 are not considered to pose a potential risk to public health or the environment.

Metals: Metals detected above laboratory reporting limits in at least one monitoring well included barium, calcium, copper, iron, manganese, sodium and zinc. Iron and manganese were detected above their respective SMCLs in monitoring wells MW-1, MW-3, MW-4S, MW-4D, MW-5, MW-6S and MW-6D.

Volatile Organic Compounds (VOCs): VOCs detected above laboratory reporting limits in at least one monitoring well included benzene, chlorobenzene, cis-1,2-dichloroethene, ethyl ether, and MTBE. No VOCs were reported above an applicable regulatory limit.

Semi-Volatile Organic Compounds (SVOCs): No SVOCs were detected above laboratory reporting limits.

Polychlorinated Biphenyls (PCBs): PCBs were not detected above laboratory reporting limits in any monitoring well.

Pesticides: No pesticides were detected above laboratory reporting limits.

ROUND 4 – JANUARY 2008

Round 4 sampling parameters duplicated those collected during Round 2. Sample analysis was limited to general chemistry, dissolved metals, and VOCs. Monitoring well MW-2 was again dry, therefore, no sample was collected at this location.

General Chemistry: Analytes detected above laboratory reporting limits in at least one monitoring well included chloride, nitrogen/nitrate, and sulfates. No analytes were reported above an applicable regulatory standard.

Total Cyanide: Total cyanide was not detected above laboratory reporting limits.

Metals: Metals detected above laboratory reporting limits in at least one monitoring well included barium, calcium, iron, manganese, sodium and zinc. Iron was detected above SMCLs in monitoring wells MW-1, MW-3, MW-4D, MW-5, and MW-6D. Manganese was detected above the SMCLs in monitoring wells MW-1, MW-3, MW-4S, MW-4D, MW-5, and MW-6D.

Volatile Organic Compounds (VOCs): VOCs detected above laboratory reporting limits in at least one monitoring well included benzene, chlorobenzene, cis-1,2-dichloroethene, ethyl ether, 1,2-dichlorobenzene, and MTBE. No VOCs were reported above an applicable regulatory limit.

Surface Water

Three surface water samples were collected during two of the four rounds of CSA water quality monitoring. Each surface water location corresponded to the three piezometers installed by S E A as part of the CSA. Two samples were collected from the groundwater ditch that borders the northern end of the site and flows in a west-to-east direction towards Maple Swamp. One sample, SW-1(located at PZ-1), was collected from the upstream end of the ditch (the small dug pond) and the second sample, SW-2 (located at PZ-2), was collected approximately 1,100 feet downstream of SW-1 to obtain surface water quality data at a point where the ditch leaves the landfill property and flows into Maple Swamp. The third sampling location, SW-3 (located at PZ-3), was collected from the large dug pond located in the northeast corner of the site. The surface water sampling locations are shown on the CSA Base Plan (Figure 1-2). It should be noted that the groundwater ditch does not drain into the large dug pond, nor does the pond discharge to the ditch.

The two rounds of surface water monitoring were performed on March 5, 2007 (CSA Round 1) and October 25, 2007 (CSA Round 3). Surface water samples were analyzed for dissolved metals, general chemistry parameters, VOCs, SVOCs, PCBs, and organochlorine pesticides. Monitoring location SW-1 contained no standing surface water during the October 2007 round and could not be sampled during that round. Table 5.3, provided at the end of this chapter, summarizes the surface water analytical results and compares the data to the EPA's Ambient Water Quality Criteria (AWQC).

Of the parameters analyzed, barium, calcium, iron, lead, manganese, sodium, zinc, total cyanide, chloride, sulfate, and nitrate nitrogen were detected above laboratory reporting limits. These detections were compared to the EPA's chronic and acute AWQCs and, for comparison purposes only, with MCP GW-1 and GW-3 standards. Only one surface water analyte, total cyanide, was detected above a chronic AWQC. The total cyanide exceedence occurred during the October 2007 monitoring event, where the compound was detected at SW-2 at a concentration of 6.0 μg/L as compared to the chronic AWQC limit of 5.2 μg/L. During the previous (March 2007) surface water sampling round, cyanide was not detected above the laboratory reporting limits of 5.0 μg/L. Note that, according to EPA, the acute and chronic freshwater AWQC for cyanide were developed based on "free" or physiologically available cyanide (PAC). Typically, the percentage of free cyanide in a sample is reported as significantly less than the total cyanide result. Based on the detection of cyanide, routine (post-CSA) surface water monitoring for PAC is appropriate.

Sediment

Sediment samples were collected at the three surface water monitoring locations, where SED-1 through SED-3 correspond to surface water monitoring locations SW-1 through SW-3 (refer to Figure 1-2 for sampling locations). Each sample was collected from the top 6-inches of the sediment layer underlying the surface water body. As with the surface water monitoring program, sediment samples were collected during the Round 1 (March 2007) and Round 3 (October 2007) CSA monitoring events. The sediments were analyzed for total metals, VOCs, SVOCs, PCBs, and organochlorine pesticides.

Table 5.4, provided at the end of this chapter, summarizes the sediment analytical results and compares the data to recommended freshwater sediment screening values (threshold effect and probable effect concentrations) provided in the DEP's January 2006 Technical Update

entitled *Revised Sediment Screening Values*. These values have been established to identify potential risk of harm to sediment-dwelling organisms. The Technical Update was issued as a follow-up to earlier sediment standards provided in the DEP's May 2002 Technical Update entitled *Freshwater Sediment Screening Benchmarks for Use Under the MCP*.

The January 2006 Technical Update advises that Probable Effect Concentrations (PECs) are the most appropriate risk-based screening values to use in connection with metals analysis, with the exception of mercury, which retains the lower Threshold Effect Concentration (TEC) standard. Although the most relevant guidance pertaining to sediment screening is the January 2006 Technical Update, S E A has included the May 2002 TEC standards for metals as additional reference information. The following analytical summary comments on metal exceedences for both TECs and PECs, whereas the risk-based discussion for sediment presented in Chapter Seven focuses on PECs, consistent with the January 2006 Technical Update.

Of the parameters analyzed, only arsenic and lead were detected above a regulatory standard or guidance concentration. Arsenic was detected at sampling location SED-2 at 40 mg/kg during the March 2007 round and at 22 mg/kg during the October 2007 round. The TEC and PEC for arsenic are 9.79 and 33 mg/kg, respectively. Lead was reported above the TEC of 35.8 mg/kg, at 43 mg/kg in the October 2007 SED-2 sample. In the March 2007 sample, lead was reported at 33 mg/kg. The PEC for lead is 130 mg/kg. SED-2 is located in the groundwater ditch northeast of the Hamilton Landfill, and near the Hamilton/Wenham Rod & Gun Club rifle range.

Interpretation of Water Quality and Sediment Analytical Results

The results of the CSA monitoring program indicate that the landfill has had little impact on groundwater, surface water and sediment quality in the site area. Exceedences of standards for the various media analyzed were limited to: 1) arsenic at one groundwater location (MW-4S/D) and one sediment location (SED-2); 2) cyanide at surface water location SW-2; 3) lead above its TEC at SED-2; 4) sodium at groundwater wells MW-4S/D and MW-5; and 5) iron and manganese at the majority of the well locations. S E A's interpretation of these isolated exceedences is summarized below.

Arsenic

Groundwater: Dissolved arsenic was detected in monitoring well MW-4D on two of the four sampling dates (March 6 and July 5, 2007) and in monitoring well MW-4S (October 25, 2007). The MW-4S/D couplet is located south (upgradient) of the landfill. Dissolved arsenic was reported at 15 and 24 μg/L in MW-4D and at 5 μg/L in MW-4S on those respective dates (MMCL and RCGW-1 standard for arsenic is 10 μg/L). Arsenic was not detected above the laboratory reporting limits of 5 μg/L in other monitoring wells.

Arsenic occurs naturally in Massachusetts soils, where average statewide soil concentrations are noted by DEP to be approximately 17 μg/g. Concentrations of arsenic in soil in Worcester County and in portions of Essex County can be orders of magnitude higher. The source of arsenic in soil is understood to be erosion and degradation of arsenic bearing bedrock. A limited literature review suggests that arsenic may be released to groundwater through the presence of iron oxides (which may be anticipated in proximity to landfills) and under certain pH conditions. As arsenic was not detected in monitoring wells located downgradient of the landfill, the arsenic detected seasonally in MW-4D may be associated with naturally occurring arsenic or, potentially, the upgradient Manchester Landfill. S E A accordingly examined groundwater sampling results conducted prior to and following closure of the Manchester Landfill. The review indicated occasional detections of arsenic. No pattern or source of the detected arsenic was indicated, however.

Sediments: Arsenic was detected in sediment sample SED-2 during two sampling rounds. In the January 2006 Technical Update, DEP states that "*current screening criteria for metals are based on the Threshold Effects Concentrations (TECs) that have been developed as consensus-based sediment quality guidelines by MacDonald et al. (2000). The revised criteria presented in the January 2006 Technical Update are based on the Probable Effects Concentrations (PECs) developed by the same researchers, which are typically several times higher than the TECs. Based on ten years of experience with lower screening levels, it has become apparent that Stage II site-specific risk assessments generally find a condition of "no significant risk of harm" to the environment for sediment contaminated with metals at levels below the PECs.*" The TEC is a contaminant concentration below which harmful effects are unlikely to be observed. A PEC indicates a contaminant concentration above which harmful effects are likely.

Arsenic was not identified in the groundwater ditch sediments in the small dug pond (sample SED-1) or in the large dug pond downgradient of the landfill (sample SED-3). Based on these findings, the landfill is not considered a likely source of arsenic in the sediment sample at SED-2. The source of arsenic may be naturally occurring; an alternative source for the arsenic may include the shooting range as arsenic is used as a hardener in lead shot. The presence of arsenic in groundwater upgradient of the landfill (at MW-4S/D), however, suggests that the detections may more likely be associated with naturally occurring arsenic.

Total Cyanide

Total cyanide was detected during CSA Round 3 (October 2007) in six monitoring wells: MW-3, MW-4S, MW-4D, MW- 5, MW-6S, and MW-6D at concentrations between 6 and 15 µg/L. Total cyanide was not detected in groundwater above laboratory reporting limits in previous or subsequent sampling rounds. The concentrations of total cyanide detected were less than the MMCL (200 µg/L), the RCGW-1 and RCGW-2 limit (30 µg/L), and MCP Method 1 GW-1 and GW-3 risk characterization standards (30 µg/L). Total cyanide was detected in surface water sample SW-2 (October 2007) at 6.0 µg/L as compared to the chronic AWQC limit of 5.2 µg/L.

Cyanide was analyzed for "total cyanide" in accordance with 310 CMR 19.132. S E A notes that human health standards and guidance are based on "physiologically available" or "free" cyanide. EPA indicates that principal sources of cyanide releases to water include discharges from metal finishing industries, iron and steel mills, organic chemical industries and wastewater treatment plants; none of these sources are located in the vicinity of the Hamilton Landfill. Cyanide is also naturally occurring and is present in certain plants and produced by bacteria, fungi, and algae. Although the detection of cyanide in the groundwater and at surface water location SW-2 was isolated to the Round 3 monitoring event, it is appropriate to continue monitoring for this parameter as part of the post-CSA environmental monitoring program, at which time samples will be analyzed for physiologically available cyanide (PAC) as opposed to total cyanide.

Lead

Lead was detected in downstream sediment sample SED-2 above the sediment TEC but below the PEC, which DEP recommends for risk characterization (see Chapter Seven). The source of lead is not believed to be the Hamilton Landfill, given the proximity of SED-2 to the shooting range and the comparatively low lead levels at SED-2 and SED-3.

Environmental risks to benthic (sediment-dwelling) organisms are not considered significant for lead.

Sodium

Sodium was detected in excess of its MMCL standard of 20 mg/l at wells MW-4S, MW-4D, and MW-5. The highest sodium concentrations recorded at these wells were 41 mg/l at MW-4S, 33 mg/l at MW-4D, and 43 mg/l at MW-5. Sodium is a naturally occurring element found in water and soil. The 20 ppm MMCL drinking water standard represents a level of sodium in water that physicians and sodium-sensitive individuals should be aware of in cases where sodium exposures are carefully controlled. Since the detection of sodium at monitoring wells MW-4S/D and MW-5 does not represent an exposure potential to humans, the presence of sodium is not interpreted as having an adverse environmental impact.

Iron and Manganese

The presence of iron and manganese at concentrations above their respective SMCLs indicates that aesthetic impacts such as odor, taste, and color would likely be encountered if the groundwater were utilized for drinking water purposes. Elevated iron and manganese are not associated with adverse public health impacts.

Landfill Gas

S E A performed four rounds of soil gas monitoring at the Hamilton Sanitary Landfill between January 2007 and January 2008. The results of the landfill gas monitoring activities are presented in Chapter Six.

Table 5.2
Summary of Groundwater Analytical Results
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	WATER QUALITY STANDARDS GUIDELINES			Units	MW-1				MW-2				MW-3			
	MMCL	RCGW-1	SMCL		05-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	5-Jul-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
					L0703070-01	L0709578-01	L0716044-01	L0801067-01	L0703115-01				L0703115-02	L0709578-02	L0716044-02	L0801067-02
pH			6.5-8.5	S.U.	6.75	5.48	6.38	6.26	6.83				7.12	5.71	5.62	5.51
Specific Conductence				mS/cm	0.173	0.132	0.144	0.163	0.179				0.031	0.174	0.219	0.083
Temperature				°C	7.3	9.71	9.63	7.95	4.57				1.63	10.49	10.36	4.67
Dissolved Oxygen				mg/l	1.21	0.76	0.24	0.4	3.51				8.89	0.73	0.2	10.6
Alkalinity, Total				mg CaCO3/L	16	30	26	13	83				8.8	62	82	96
Solids, Total Dissolved			500	mg/l	130	140	82	52	160				55	91	120	230
Cyanide, Total	0.2	0.03		mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005				< 0.005	< 0.005	0.007	<0.005
Chloride			250	mg/l	21	19	12	8.8	7.6				7	6	6.3	40
Nitrogen, Nitrate	10			mg/l	< 0.1	< 0.1	<0.1	0.52	0.86				0.14	0.17	0.1	<0.5
Sulfate			250	mg/l	20	38	18	<10	34				< 10	12	16	44
Chemical Oxygen Demand				mg/l	< 20	30	<20	<20	45				< 20	< 20	41	<20
Dissolved Metals by MCP 6000/7000 series																
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005				< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	2		mg/l	0.02	0.018	0.014	0.032	0.033				0.027	0.062	0.069	0.038
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.0005	< 0.004	<0.004	<0.004	< 0.004				< 0.004	< 0.004	<0.004	<0.004
Calcium, Dissolved				mg/l	7.6	6.8	6.3	6.2	18				4.8	15	19	30
Chromium, Dissolved	0.1	0.1		mg/l	< 0.01	< 0.01	<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	0.024	<0.01
Iron, Dissolved			0.3	mg/l	12	12	11	<0.05	1.5		D		< 0.05	2	1.6	9.9
Lead, Dissolved	0.015	0.02		mg/l	< 0.0005	< 0.01	<0.01	<0.01	< 0.01				< 0.01	< 0.01	<0.01	<0.01
Manganese, Dissolved			0.05	mg/l	0.749	0.645	0.676	0.069	2.22				0.385	5.87	7.33	5.44
Mercury, Dissolved	0.002	0.002		mg/l	< 0.0002	< 0.0002	<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	<0.01	<0.01
Silver, Dissolved		0.007	0.1	mg/l	< 0.0005	< 0.0005	<0.007	<0.007	< 0.007		R		< 0.007	< 0.007	<0.007	<0.007
Sodium, Dissolved	20*			mg/l	11	14	11	6.1	7.2				5.1	5	6.6	20
Zinc, Dissolved		0.9	5	mg/l	0.0088	< 0.05	<0.05	<0.05	< 0.05				< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)																
1,2,4-Trimethylbenzene		10		mg/l	< 0.0025	<0.0025	<0.0025	<0.0025	0.022				< 0.0025	< 0.0025	< 0.0025	< 0.0025
1,3,5-Trimethylbenzene		0.1		mg/l	< 0.0025	<0.0025	<0.0025	<.006	0.0084				< 0.0025	< 0.0025	< 0.0025	<0.006
Benzene	0.005	0.005		mg/l	<0.0005	<0.0005	<0.0005	<.0005	<0.0005		Y		<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	0.1		mg/l	< 0.0005	< 0.0005	<0.0005	<.0005	< 0.0005				< 0.0005	0.0034	0.0029	<0.0005
Chloroform		0.005		mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075				< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	0.07		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005				< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether		1		mg/l	< 0.0025	< 0.0025	<0.0025	<.0025	< 0.0025				< 0.0025	< 0.0025	<0.0025	<0.0025
Ethylbenzene	0.7	0.7		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.002				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Isopropylbenzene		10		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00067				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl tert butyl ether		0.07	20	mg/l	< 0.001	< 0.001	<0.001	<.001	< 0.001				< 0.001	< 0.001	<0.001	<0.001
n-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0042				< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene		1		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0028				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene		0.14		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	0.0031				< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	0.0045				< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0014				< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	0.0096				< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0014				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)																
SVOCs				mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)																
PCBs				mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)																
Pesticides				mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA

Notes:

1. MMCL = Massachusetts DEP Maximum Contaminant Level for Drinking Water (Spring 2008).
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 2006). SMCLs are non-enforceable standards; however, these limits have been developed to protect the aesthetic quality of drinking water (i.e. odor and taste).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which 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 on Office of Research and Standards Guidelines (ORSG). The ORS guideline of 20 ppm in drinking water represents a level of sodium in water that physicians and sodium-sensitive individuals should be aware of in cases where sodium exposures are carefully controlled. People who have difficulty regulating fluid volume as a result of several diseases such as hypertension and kidney failure are particularly affected by elevated levels of sodium (MDPH 2007).

Table 5.2
Summary of Groundwater Analytical Results
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	WATER QUALITY STANDARDS GUIDELINES			Units	MW-4S				MW-4D				MW-5			
					06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	05-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
	MMCL	RCGW-1	SMCL		L0703115-03	L0709578-03	L0716044-03	L0801067-03	L0703115-04	L0709578-04	L0716044-04	L0801067-04	L0703070-02	L0709578-05	L0716044-05	L0801067-05
pH			6.5-8.5	S.U.	5.67	4.93	6.29	5.19	7.06	5.68	5.81	6.05	7.12	5.36	6.6	6.18
Specific Conductence				mS/cm	0.029	0.053	0.209	0.077	0.552	0.342	0.571	0.572	0.75	0.532	0.654	0.67
Temperature				°C	4.38	9.94	10.89	6.63	6.35	10.51	9.62	7.87	8.3	12.98	12.48	8.76
Dissolved Oxygen				mg/l	8.91	1.09	1.29	4.85	13.95	1.13	0.27	0.24	2.05	1.28	0.25	6.16
Alkalinity, Total				mg CaCO3/L	<2	2.1	220	3.7	100	200	70	240	270	280	240	210
Solids, Total Dissolved			500	mg/l	31	47	310	36	140	250	94	310	420	360	340	370
Cyanide, Total	0.2	0.03		mg/l	< 0.005	< 0.005	0.009	<0.005	< 0.005	< 0.005	0.006	<0.005	< 0.005	< 0.005	0.015	<0.005
Chloride			250	mg/l	7.9	6.4	42	10	15	20	16	34	57	48	55	67
Nitrogen, Nitrate	10			mg/l	< 0.1	0.1	<0.1	<0.1	< 0.1	< 0.1	<0.1	<0.5	4.1	1.7	1.3	7.5
Sulfate			250	mg/l	< 10	< 10	13	11	< 10	< 10	<10	10	12	< 10	12	<10
Chemical Oxygen Demand				mg/l	< 20	< 20	34	<20	< 20	32	<20	23	< 20	30	20	<20
Dissolved Metals by MCP 6000/7000 series																
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005	< 0.005	0.005	<0.005	0.015	0.024	<0.005	<0.005	< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	2		mg/l	0.029	0.026	0.051	0.03	0.065	0.043	0.043	0.05	0.311	0.32	0.447	0.183
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.004	< 0.004	<0.004	<0.004	< 0.004	< 0.004	<0.004	<0.004	< 0.0005	< 0.004	<0.004	<0.004
Calcium, Dissolved				mg/l	1.2	1.2	42	3.6	36	36	20	44	80	73	63	74
Chromium, Dissolved	0.1	0.1		mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 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	<0.01	< 0.01	< 0.01	<0.01	<0.01
Iron, Dissolved			0.3	mg/l	< 0.15	0.11	4.5	0.05	10	25	0.53	4.6	4.2	1.4	3.8	0.3
Lead, Dissolved	0.015	0.02		mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.0005	< 0.01	<0.01	<0.01
Manganese, Dissolved			0.05	mg/l	0.037	0.021	8.3	0.156	6.23	1.24	0.446	9.11	0.548	1.04	4.77	2.8
Mercury, Dissolved	0.002	0.002		mg/l	< 0.0002	< 0.0002	<0.0002	<0.0002	< 0.0002	< 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	<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	<0.007	< 0.0005	< 0.0005	<0.007	<0.007
Sodium, Dissolved	20*			mg/l	5.1	4.2	41	8	27	19	14	33	40	43	42	36
Zinc, Dissolved		0.9	5	mg/l	< 0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	0.067	< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)																
1,2,4-Trimethylbenzene		10		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
1,3,5-Trimethylbenzene		0.1		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
Benzene	0.005	0.005		mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00056	0.00064	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	0.1		mg/l	< 0.0005	< 0.0005	0.00055	<0.0005	0.0014	< 0.0005	0.0029	0.004	< 0.0005	< 0.0005	<0.0005	<0.0005
Chloroform		0.005		mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	0.0016	<0.00075	<0.00075	<0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	0.07		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.00063	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether		1		mg/l	< 0.0025	< 0.0025	0.0055	<0.0025	0.018	0.0057	0.026	0.028	0.0046	0.0044	<0.0025	0.0028
Ethylbenzene	0.7	0.7		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Isopropylbenzene		10		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl tert butyl ether		0.07	20	mg/l	< 0.001	< 0.001	<0.0001	<0.001	< 0.001	< 0.001	<0.0001	<0.001	< 0.001	< 0.001	<0.001	<0.001
n-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene		1		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene		0.14		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene				mg/l	0.00073	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)																
SVOCs				mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)																
PCBs				mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)																
Pesticides				mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA

Notes:

1. MMCL = Massachusetts DEP Maximum Contaminant Level for Drinking Water (Spring 2008).
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 2006). SMCLs are non-enforceable standards; however, these limits have been developed to protect the aesthetic quality of drinking water (i.e. odor and taste).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which 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 on Office of Research and Standards Guidelines (ORSG). The ORS guideline of 20 ppm in drinking water represents a level of sodium in water that physicians and sodium-sensitive individuals should be aware of in cases where sodium exposures are carefully controlled. People who have difficulty regulating fluid volume as a result of several diseases such as hypertension and kidney failure are particularly affected by elevated levels of sodium (MDPH 2007).

Table 5.2
Summary of Groundwater Analytical Results
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	WATER QUALITY STANDARDS GUIDELINES			Units	MW-6S				MW-6D			
	MMCL	RCGW-1	SMCL		06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
					L0703115-05	L0709578-06	L0716044-06	L0801067-06	L0703115-06	L0709578-07	L0716044-07	L0801067-07
pH			6.5-8.5	S.U.	6.71	5.38	5.61	6.22	6.26	6.23	6.51	6.12
Specific Conductence				mS/cm	1.145	0.239	0.353	0.511	0.165	0.352	0.347	0.401
Temperature				°C	1.57	9.85	9.78	7.38	6.47	10.19	10.09	8.38
Dissolved Oxygen				mg/l	17.33	1.02	0.48	10.19	0.79	1.32	0.45	1.14
Alkalinity, Total				mg CaCO3/L	38	44	43	75	79	76	66	96
Solids, Total Dissolved			500	mg/l	130	240	210	280	220	230	210	230
Cyanide, Total	0.2	0.03		mg/l	< 0.005	< 0.005	0.007	<0.005	< 0.005	< 0.005	0.007	<0.005
Chloride			250	mg/l	9.8	32	33	57	40	43	46	40
Nitrogen, Nitrate	10			mg/l	1.4	0.27	<0.1	0.87	< 0.1	< 0.1	<0.1	<0.5
Sulfate			250	mg/l	31	69	84	60	35	34	35	44
Chemical Oxygen Demand				mg/l	< 20	< 20	<20	<20	< 20	20	<20	<20
Dissolved Metals by MCP 6000/7000 series												
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	2		mg/l	0.018	0.038	0.034	0.051	0.031	0.029	0.032	0.038
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.004	< 0.004	<0.004	<0.004	< 0.004	< 0.004	<0.004	<0.004
Calcium, Dissolved				mg/l	21	34	32	49	28	25	26	30
Chromium, Dissolved	0.1	0.1		mg/l	< 0.01	< 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	<0.01
Iron, Dissolved			0.3	mg/l	< 0.05	2.7	3.4	<0.05	6.4	9.6	11	9.9
Lead, Dissolved	0.015	0.02		mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Manganese, Dissolved			0.05	mg/l	< 0.01	0.536	0.769	<0.01	5	3.88	3.36	5.44
Mercury, Dissolved	0.002	0.002		mg/l	< 0.0002	< 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	<0.01
Silver, Dissolved		0.007	0.1	mg/l	< 0.007	< 0.007	<0.007	<0.007	< 0.007	< 0.007	<0.007	<0.007
Sodium, Dissolved	20*			mg/l	12	15	16	35	19	20	20	20
Zinc, Dissolved		0.9	5	mg/l	0.09	0.116	0.068	0.103	< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)												
1,2,4-Trimethylbenzene		10		mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
1,3,5-Trimethylbenzene		0.1		mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
Benzene	0.005	0.005		mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	0.1		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	0.00073
Chloroform		0.005		mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	0.07		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether		1		mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	0.0027
Ethylbenzene	0.7	0.7		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Isopropylbenzene		10		mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Methyl tert butyl ether		0.07	20	mg/l	< 0.001	< 0.001	<0.0001	<0.001	0.0019	0.0021	0.0023	0.0018
n-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene		1		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene		0.14		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	6		mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene				mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)												
SVOCs				mg/l	ND	NA	ND	NA	ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)												
PCBs				mg/l	ND	NA	ND	NA	ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)												
Pesticides				mg/l	ND	NA	ND	NA	ND	NA	ND	NA

Notes:

1. MMCL = Massachusetts DEP Maximum Contaminant Level for Drinking Water (Spring 2008).
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 2006). SMCLs are non-enforceable standards; however, these limits have been developed to protect the aesthetic quality of drinking water (i.e. odor and taste).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which 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 on Office of Research and Standards Guidelines (ORSG). The ORS guideline of 20 ppm in drinking water represents a level of sodium in water that physicians and sodium-sensitive individuals should be aware of in cases where sodium exposures are carefully controlled. People who have difficulty regulating fluid volume as a result of several diseases such as hypertension and kidney failure are particularly affected by elevated levels of sodium (MDPH 2007).

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	
				05-MAR-07	25-OCT-07	05-MAR-07	25-OCT-07	05-MAR-07	25-OCT-07
	ACUTE (CMC)	CHRONIC (CCC)	Units	L0703070-03		L0703070-04	L0716044-08	L0703070-05	L0716044-09
pH				5.33		6.2	6.04	8.87	6.73
Specific Conductence				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 CaCO3/L	< 2		18	62	21	75
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
Dissolved Metals by MCP 6000/7000 series									
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*	*< 0.0002*	*< 0.0005*	*< 0.0002*
Calcium, Dissolved			mg/l	3.5	D	16	22	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	R	< 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	Y	15	10	4.6	7.6
Zinc, Dissolved	0.12	0.12	mg/l	0.0148		0.0137	0.0076	0.0086	< 0.005
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)									
VOCs			mg/l	ND		ND	ND	ND	ND
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)									
SVOCs			mg/l	ND		ND	ND	ND	ND
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)									
PCBs			mg/l	ND		ND	ND	ND	ND
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)									
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 indefinitiely 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.
Italics 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	
				5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07
	TEC	PEC	Units	0703022-01	L0716044-10	0703022-02	L0716044-11	0703022-03	L0716044-12
Metals									
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**	**28**
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	**130**	**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**
Pesticides by 8081 (Results Above Detection Limits Only)									
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
Polychlorinated Biphenyls by 8082 (Results Above Detection Limits Only)									
PCBs	**60**		µg/Kg	ND	ND	ND	ND	ND	ND
Volatile Organics by 8260 (Results Above Detection Limits Only)									
Acetone			µg/Kg	< 510	<1200	**1200**	<2800	**830**	<1300
Methylene chloride			µg/Kg	**580**	<1200	**1300**	<2800	< 720	<1300
Semi-Volatile Organics by 8270 (Results Above Detection Limits Only)									
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.

CHAPTER SIX
Landfill Gas Monitoring

Introduction

In accordance with the Massachusetts Solid Waste Management Facility Regulations and the State's Landfill Technical Guidance Manual, soil gas monitoring was proposed as part of the DEP-approved CSA Scope of Work. The purpose of the soil gas monitoring program was to evaluate the nature and extent of landfill gas at the Hamilton Landfill. Chapter Six presents the background and results of the soil gas survey, as well as an overview of landfill gas characteristics and applicable regulations governing landfill gas emissions. Chapter Six also presents the basis for calculating the landfill's gas emission rate and, based upon the calculated emission rate, concludes with an evaluation assessing whether active gas collection is necessary at the site.

General Landfill Gas Information

Gases present in landfills are comprised of several different constituents. The majority of landfill gas is a result of the decomposition of the solid waste deposited in the landfill. Once the atmospheric oxygen that was trapped in the landfill has been substantially depleted and the aerobic and facultative bacteria have died, methanogenic bacteria anaerobically digest the deposited waste (DEP, 1997). Anaerobic digestion results in the production of methane, carbon dioxide, hydrogen and moisture. Landfill gases also typically contain residual amounts of atmospheric oxygen and nitrogen, as well as volatile organic compounds referred to as Non-Methane Organic Compounds (NMOCs), which originate directly from the deposited waste and are not a product of decomposition. Because NMOCs are placed in the landfill, the specific constituents present may vary greatly from one landfill to another.

Benzene, toluene, vinyl chloride and trichloroethene are examples of volatile organic compounds that may be found in landfill gases. The concentrations of NMOCs are typically low in landfill gases. While methane and carbon dioxide are detected and reported as percent by volume, NMOCs are usually only present in the part per million (ppm) or part per billion (ppb) range. Typical ranges for landfill gas composition are shown in Table 6.1.

TABLE 6.1
TYPICAL LANDFILL GAS COMPOSITION (RICE, 1994)

Constituent	Percent by Volume
Methane (CH_4)	50% to 58%
Carbon Dioxide (CO_2)	35% to 45%
Hydrogen (H_2)	1% to 2%
Oxygen (O_2)	1% to 2%
Nitrogen (N_2)	2% to 5%
NMOCs	3% to 5%

Landfill gases can pose a number of hazards, including explosion hazards, asphyxiation hazards and air quality hazards. Many of the constituents in landfill gas are combustible. Because of its prevalent nature, methane is typically the focus of concern. Methane is explosive when it is present in concentrations between 5 percent and 15 percent in air. These volumetric percentages represent the Lower Explosive Limit (LEL) and Upper Explosive Limit (UEL) of methane, respectively. A methane concentration above the UEL will still be flammable, however, it will not be explosive. Table 6.2 identifies some of the potentially explosive gases encountered at landfill sites and their respective explosive limits.

TABLE 6.2
EXPLOSIVE LIMITS OF TYPICAL GASES FOUND IN LANDFILL GAS

GASEOUS COMPOUND	ELEMENT SYMBOL	VAPOR DENSITY[1]	LOWER EXPLOSIVE LIMIT %[2] (PPM)	UPPER EXPLOSIVE LIMIT %[2] (PPM)
Air	—	1.000	N/A[3]	N/A
Methane	CH_4	0.554	5 (50,000)	15 (150,000)
Carbon Dioxide	CO_2	1.529	N/A	N/A
Hydrogen Sulfide	H_2S	1.191	4.3 (40,000)	46 (440,000)
Carbon Monoxide	CO	0.967	12.5 (125,000)	74 (740,000)

Notes:

1. Vapor Density: less than 1= gas is lighter than air; greater than 1= gas is heavier than air.
2. % = percent by volume in air (1% by volume = 10,000 ppm).
3. N/A = Not Applicable.

Hydrogen sulfide (H_2S) gas is usually always present at some concentration in landfill gas. Hydrogen sulfide, like methane, is an explosive gas, but is one of the landfill gas constituents that is detected in trace quantities and is measured in terms of parts per million. For the most

part, hydrogen sulfide is measured at municipal landfills generally below 100 ppm. It is unlikely that hazardous concentrations of hydrogen sulfide will build up, except in confined spaces where oxygen deficiency may be a hazard. However, in special circumstances where there is a presence of gypsum in the waste along with moisture, a potential for high concentrations of hydrogen sulfide may be produced. To this end, higher concentrations of hydrogen sulfide can be produced at landfill sites that accept construction and demolition debris where gypsum wallboard is a notable component of the waste stream. Specifically, a large amount of construction debris containing wallboard, concentrated in one location at a landfill, could pose a potential for producing unusually high concentrations of hydrogen sulfide.

It should be noted that hydrogen sulfide is one of the few explosive gases that can be detected by its odor. The odor is similar to that of rotten eggs and the odor threshold is extremely low (in the 0.02 ppm range, where concentrations in the 3 to 5 ppm range can cause an offensive odor), making it a nuisance gas at very low concentrations. Hydrogen sulfide also has physiological effects at concentrations well below its explosive limit. These physiological effects include headache, dizziness, and nausea at concentrations between 10 and 50 ppm (as compared to the LEL of 40,000 ppm). For these reasons, the presence of hydrogen sulfide at landfill sites represents more of nuisance condition with potential physiological effects than an explosive risk.

In evaluating the potential migration of landfill gas, it is important to understand the density characteristics of the various gases present within the landfill. Some gaseous compounds are heavier than air, which will cause them to sink or settle into low areas. Other gaseous compounds are lighter than air, which enables them to rise and vent to the atmosphere. The vapor density (specific density) of a gaseous compound is used to determine if a gas is lighter or heavier than air. The vapor densities greater than air will tend to sink. Methane, with a vapor density of 0.554, is lighter than air and will tend to rise.

Landfill gas migration can create a hazard, particularly where methane is present. For the most part, methane will migrate in the path of least resistance, which is generally in a vertical direction upward through the cover material, ultimately venting to the atmosphere. However, if methane encounters a low permeability cover material, which prevents venting to the atmosphere, the gas will travel horizontally and migrate underground until it finds a path to the surface. Saturated soils and bodies of water will, however, act as physical barriers against soil gas migration.

Governing Regulations and Criteria

Because of the potential hazards, Federal and State regulations have prescribed monitoring procedures and criteria for landfill gases. The Massachusetts Solid Waste Management Facility Regulations (310 CMR 19.132(4)(e)) directs the owner/operator of any landfill to sample and analyze landfill gases both during operation and after closure. The goal of the monitoring program is to identify the characteristics of the landfill gas and to define the migratory patterns of the gas. Explosive gases, hydrogen sulfide and volatile organic compounds are the most commonly monitored constituents. In the course of monitoring, the DEP must be notified if combustible gases are detected in concentrations exceeding 10 percent of the LEL in structures or underground utilities, or exceeding 25 percent of the LEL near the property line.

The Massachusetts regulation is intended to protect health and safety at locations near the landfill and is the State equivalent of the Resource Conservation and Recovery Act (RCRA) regulations. An additional federal regulation, entitled *Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills* (40 CFR Parts 51, 52 and 60) seeks to protect general air quality. Adopted in March 1996, the regulations target the total emissions of methane, carbon dioxide and NMOCs from the landfill to improve ambient air conditions and reduce global warming. Because of its focus, the regulations are often referred to as the New Source Performance Standards for Solid Waste Landfills (or NSPS.)

Soil Gas Monitoring Parameters

S E A completed four rounds of CSA soil gas sampling between January 2007 and January 2008. During the CSA monitoring rounds, a Photo-Ionization Detector (PID) and a combustible gas meter (Landtec GEM 500 for Rounds 1 and 3 and a GEM 2000+ for Rounds 2 and 4) were used by S E A to field screen and analyze gas from the probe network. The PID determines the presence of volatile organic compounds (VOCs) in parts per million, calibrated to a benzene equivalent using 100 ppm isobutylene. The combustible gas meter quantitatively determines the amount of oxygen, carbon dioxide, hydrogen sulfide and methane concentrations in the soil gas samples. The CSA sampling program conducted by S E A adhered to all DEP protocols and consisted of measuring the following parameters:

- percentage of methane (% by volume in air)

- lower explosive limit (LEL) for methane;
- percentage of carbon dioxide;
- percentage of oxygen;
- concentration of hydrogen sulfide in parts per million (ppm); and
- total VOCs in ppm.

Soil Gas Monitoring Network

The Hamilton Landfill soil gas monitoring network consists of twenty-four soil gas probes located along the landfill perimeter. Three of the perimeter probes are located near the Miles River Marsh Rats skeet shooting range (SG-17, SG-18 and SG-19) and two are located north of the groundwater ditch in the vicinity of the Hamilton/Wenham Rod & Gun Club shooting range (probes SG-23 and SG-24). The probes located near the two gun ranges were installed to determine whether landfill gases may be migrating to these two on-site recreational use areas. The probe locations are shown on the CSA Base Plan (Figure 1-2).

The gas probe network was installed by S E A personnel on January 19, 2007. The probes consist of 3/16-inch diameter polyethylene tubing and stainless steel sampling points and were installed using a hammer drill. Typical probe installation depths ranged between 3 and 4-feet below ground surface.

Soil Gas Monitoring Results

The results of the four rounds of soil gas monitoring are summarized in Appendix H. The CSA soil gas monitoring program revealed that there were no landfill gases (methane, hydrogen sulfide, or total VOCs) present in any of the probes during any of the monitoring rounds. Therefore, in the event the landfill is generating any landfill gas, the results of the CSA soil gas monitoring reveal that it is not migrating into adjacent soils and, consequently, there is no apparent migration off-site or on-site towards the two gun club recreational use areas. There were also no odors detected at the site during any of the monitoring rounds.

It should be noted that neither the Area 1 or Area 2 portions of the landfill are equipped with passive landfill gas vents. The findings from the CSA gas monitoring program suggests that passive gas vents are not needed to maintain perimeter gas control at the site. This is perhaps most notable with respect to Area 1, which was capped in 1980 in accordance with DEP-approved plans (see Chapter Three), suggesting that the Area 1 cover system need not be augmented with passive gas vents since there is no apparent concentration of landfill gases

residing within the soils surrounding the landfill. It should also be noted that the groundwater ditch that separates the northern portion of the landfill (Area 2) from the Hamilton/Wenham Rod & Gun Club is expected to act as a natural barrier to gas migration to the north. As such, in the event the landfill was generating landfill gas, the ditch is expected to prevent its migration to the gun club.

Based on the results of the CSA soil gas monitoring activities, landfill gas does not represent a public health risk, nuisance condition, or environmental impact under current site conditions or site uses.

Estimate of Landfill Gas Emissions

Estimating the quantity of gas generated at a landfill site is an important consideration, particularly when preparing a facility for closure. Capping a landfill with low permeability material substantially reduces the tendency for landfill gases to vent to the atmosphere, thereby increasing their concentration and likelihood to migrate off-site. To address this issue, the Environmental Protection Agency (EPA) published *Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills* (40 CFR Parts 51, 52, and 60) in March of 1996. These regulations, commonly referred to as the New Source Performance Standards (NSPS), provide empirical equations which are to be used when calculating a landfill's gas emission rate. If the calculated emission rate exceeds a specific threshold established in the regulations, the landfill owner is required to install a gas collection and control system. If the threshold is not exceeded, passive gas venting is appropriate.

The remainder of this chapter describes the process by which the landfill gas emission rate was calculated for the Hamilton Landfill. Included is a discussion regarding: (1) the EPA's emission standards; (2) the basis for estimating the quantity of municipal solid waste disposed of at the landfill; and (3) the results of the gas emission calculations and the impact these results have on gas control requirements at the site.

Gas Emission Standards

According to the NSPS standards, the first step in determining whether active gas collection is required at a landfill site involves calculating the volume of refuse in the landfill, referred to in the regulations as the facility's "Design Capacity". Presently, if the design capacity exceeds 2.5

million megagrams (Mg, 1 Mg = 1.1023 tons), the landfill owner must then calculate the landfill's gas emission rate.

The following emission rate equation is used when the actual year-to-year solid waste acceptance rate is unknown:

$$M_{NMOC} = 2\ L_o\ R\ (e^{-kc} - e^{-kt})(C_{NMOC})(3.6x10^{-9})$$

where,

M_{NMOC} = Mass Emission Rate of NMOC, Mg/year;
L_o = Methane Generation Potential, m^3/Mg;
R = Average Annual Acceptance Rate, Mg/year;
K = Methane Generation Rate Constant, $year^{-1}$ = 1/year;
t = Age of Landfill, years;
c = time since closure (years);
C_{NMOC} = Concentration of NMOC, ppm by volume as hexane;

The variables in the equation are limited to the values for R, c and t, which are specific to each landfill site. The remaining terms in the equation are constants ("defaults") whose values are identified in the NSPS regulations. Table 6.3 summarizes the current NSPS gas emission values.

TABLE 6.3
MUNICIPAL SOLID WASTE LANDFILL
NEW SOURCE PERFORMANCE STANDARDS AND EMISSIONS GUIDELINES

Item	Value
Action Levels (per 40 CFR 60.752(b)	
Design Capacity Exemption	2,500,000 Mg (2,755,750 tons)
NMOC Emission Rate Cutoff[1]	50 Mg/year (55 ton/year)[1]
Defaults (per 40 CFR 60.754(a)(1)	
NMOC Generation (C_{NMOC})	4,000 ppm
Gas Generation Rate (k)	0.05 per year
Gas Generation Potential (L_o)	170 m^3/Mg

1. If the NMOC Emission Rate Cutoff of 50 Mg/yr is met or exceeded, 40 CFR 60.752(b)(2) requires that an active gas collection and control system be installed.

Waste Disposal Estimate

Since the design capacity action level serves as the basis for determining whether an emission rate calculation must be performed, a reasonable estimation of MSW disposed at the site is necessary.

The total in-place volume of waste at the Hamilton Landfill was estimated by using topographic information prepared by ABR in 1970 in connection with their evaluation for converting the Hamilton burn dump operations to a sanitary landfill operation. The existing conditions grades shown on the ABR drawing corresponds well with USGS topographic information from 1970 and is a good representation of pre-landfilling topography at the site. Therefore, the 1970 topography was compared with current topographic conditions as depicted on the CSA Base Plan to estimate the volume of fill within the landfill.

The base elevation represented by the 1970 topography was further refined to incorporate information obtained by S E A during the CSA groundwater monitoring well installation and waste delineation test pitting activities. The results of these refined bottom-of-waste conditions are reflected in the geologic cross-sections provided in Figure 4-3. Comparing the bottom-of-waste surface developed in connection with the geologic cross-sections with current topographic conditions yields a total in-place landfill volume of approximately 270,000 cubic yards. This volume takes into account the estimated bedrock contouring beneath the landfill. To ensure that the estimated bedrock topography is not unreasonably reducing the fill volume estimate, S E A also calculated the in-place landfill volume by assuming a constant bottom of waste elevation of 60 feet above mean seal level (NGVD 1929), which is lower than the variable bedrock elevation estimated beneath the landfill. The results of this more conservative volume estimate yields an in-place landfill volume of approximately 405,000 cubic yards. In the interest of selecting a more conservative value for the in-place waste volume (resulting in a higher estimate of landfill gas generation), S E A selected the 405,000 cubic yard figure as the volume from which to estimate the landfill gas generation rate.

The total in-place waste volume (gas generating volume) was derived from the total landfill volume of 405,000 cubic yards (solid waste, daily cover, and final cover soil volume) by reducing this volume to account for: 1) the thickness of the final cover soils placed on Area 1 and Area 2; and 2) the estimated daily cover within the landfill mass. The total thickness of the cover soils for Area 1 and Area 2 was estimated at 30,000 cubic yards (24-inches of cover soil on the 7.1 acre Area 1 and 16-inches of cover soil on the 2.9 acre Area 2). This results in a combined solid waste and daily cover landfill volume of 375,000 cubic yards (405,000 cubic yards – 30,000 cubic yards). The 375,000 cubic yard volume was then reduced by approximately 25 percent to account for daily cover placed in the landfill. Daily

cover material would not contribute to the production of gases, therefore, the estimated 25 percent quantity was removed from the total waste estimate to calculate a conservative net volume of gas-generating waste within the landfill. The resulting net in-place volume of waste estimated for the Hamilton Landfill equals approximately 290,000 cubic yards. Using an assumed in-place waste density of 1,000 pounds per cubic yard, the total estimated amount of waste deposited in the landfill equals 145,000 tons, or approximately 132,000 Mg.

Using the net weight 132,000 Mg of MSW calculated for the landfill, an average annual waste disposal rate can be determined. The annual disposal rate was estimated on the basis that sanitary landfill disposal operations began at the site in 1970 and terminated in 1983, when Area 2 ceased operating and was covered (note: waste disposal began at the site in 1958, however, these were burn dump operations and therefore not representative of waste volumes that are gas-generating). Therefore, the sanitary landfill "operational" period is estimated to span a fourteen year period, resulting in an average annual landfill disposal rate of 9,430 Mg/year (132,000 Mg/14 years).

Gas Emission Rate Calculation

Having identified an annual waste disposal rate for the landfill, the gas emission rate can be calculated. The NSPS Action Levels and Defaults, together with the site-specific landfill data, are presented as part of the following gas emission rate calculation.

Action Levels

Design Capacity (MSW Quantity)	2,500,000 Mg solid waste (2,755,750 ton)
Emission Rate Cutoff	50 Mg NMOC/year (55 ton/year)

Defaults

Concentration of NMOC, C_{NMOC}	4,000 ppm (as hexane)
Gas Generation Potential, L_O	170 m^3/Mg
Gas Generation Rate, k	0.05 /year

Hamilton Sanitary Landfill Operations

Age of Landfill, t	39 years (1970 to 2008)
Average annual disposal rate, R	9,430 Mg/year (132,000 tons/14 years)
Time since closure, c ("closure" defined as cease waste disposal)	25 years (1984-2008)

Mass Emission Rate Equation (year-to-year solid waste acceptance rate is unknown):

$M_{NMOC} = 2\ L_o\ R\ (e^{-kc} - e^{-kt})(C_{NMOC})(3.6x10^{-9})$

$M_{NMOC} = 2(170\ m^3/Mg)(9{,}430\ Mg/year)(e^{-(0.05)(25)} - e^{-(0.05)(39)})(4{,}000\ ppm)(3.6x10^{-9})$

$M_{NMOC} = 6.66$ Mg/year (Less than NSPS action level of 50 Mg/year)

Interpretation of Gas Emission Rates

The net tonnage of waste within the Hamilton Landfill is estimated at 132,000 Mg, which does not exceed the EPA's current action level of 2,500,000 Mg. Therefore, in accordance with the NSPS Solid Waste Landfill Regulations, 40 CFR 60, it is not necessary to calculate the NMOC gas emission rate and no further action is required. Although the calculation of the NMOC gas emission rate is not a requirement for the Hamilton Landfill according to EPA guidelines, the DEP has indicated that emission rate calculations should be performed by landfill owners, regardless of the quantity of refuse disposed of at the site.

Based upon the NSPS Mass Emission Rate Equation, the current gas emission rate at the landfill is approximately 7 Mg/year, which is significantly below the NMOC action level of 50 Mg/year, and the 7 Mg/year emission rate will decrease further with time. Therefore, active gas collection and control is not required pursuant to 40 CFR 60. Accordingly, post-closure gas control at the site, if required in connection with the Area 2 portion of the landfill, would be accomplished by installing a passive gas venting system.

CHAPTER SEVEN
Baseline Qualitative Risk Assessment

Introduction

A baseline qualitative risk assessment was completed to evaluate the potential impact of the Hamilton Sanitary Landfill on sensitive human and environmental receptors in the site area. The data evaluated in the risk assessment consists of all media analyzed during the CSA (groundwater, surface water, sediment, and landfill gas). Although not classified as a disposal site under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000, this risk characterization is based, in part, on MCP risk characterization methods and standards.

Potential Sensitive Receptors

The following is a list of potentially sensitive receptors on and near the Hamilton Landfill:

- Gravelly Pond, Manchester's surface water supply located approximately 400 feet west of the site;
- Maple Swamp east of the site and the wetland area to the south (the NHESP database notes that the Blue-Spotted Salamander, a state listed rare species, has been found in the vicinity of the site and two certified vernal pools are mapped in the wetland area south of the landfill);
- Private water supply wells located on residential properties north of the site on Chebacco Road;
- Users of the two gun clubs on site;
- Tresspassers;
- Town workers visiting the site.

The CSA Base Plan (Figure 1-2) and the Priority Resource Map (Figure 1-4) depict several of the above receptors on and adjacent to the landfill.

Current Uses and Property Conditions

Current site conditions are described in detail under the *Regional Environmental Setting* section of Chapter Five. A summary of the site setting information presented in Chapter Five is re-iterated below for ease of reference in connection with the risk assessment presented herein.

The Hamilton Landfill is located in a sparsely developed, residentially zoned area of Town. The closest home is located approximately 750 feet north of the landfill and the only other development in the site area is limited to the Town of Manchester's Gravelly Pond water treatment plant, located approximately 250 feet west of the landfill, and the capped Manchester Landfill, located approximately 450 feet south of the site. Gravelly Pond itself, used by the Town of Manchester as a surface water supply, is located approximately 400 feet west of the landfill. The Zone A protection area for Gravelly Pond is shown on Figure 1-4, the outer boundary of which runs along Chebacco Road just to the west of the landfill. The approximate location of the Zone A protection area is also shown on the CSA Base Plan (Figure 1-2). A groundwater ditch is located north of the landfill, as is a large dug pond (see Chapter Four for description of ditch and pond). Extensive wetlands and forested lands surround the landfill.

The landfill is divided by an unpaved road that traverses the western border of the landfill before turning east/northeast through the landfill. The portion of the landfill south of the access road is referred to as Area 1 and the portion north of the road is referred to as Area 2. A third discrete area identified by S E A to contain debris is located south of the unpaved road bordering Area 2 to the southeast, referred to as Area 2A. Two shooting ranges, accessed by the unpaved road, are located north and east of the landfill. The Hamilton/Wenham Rod & Gun Club lease land located northeast of the landfill and the Miles River Marsh Rats Skeet and Trap Club lease the area on and around Area 2A for skeet shooting.

As presented in Chapter Three, the 7.1-acre Area 1 portion of the landfill was closed and capped in 1980. The closure of Area 1 was performed in connection with DEP-approved plans that specified the placement of a 24-inch final cover system over the waste. The results of the CSA test pit activities revealed that the cover system was installed in substantial conformance with the approved plans. The 2.9-acre Area 2 portion of the landfill ceased operating in 1983, however, the record reveals that this portion of the landfill was not closed in accordance with DEP-approved plans. A cover system was installed over Area 2 shortly after operations ceased in this area and the test pits advanced during the CSA suggest that the cover system has a typical depth of 15 to 18-inches.

The Natural Heritage and Endangered Species Program (NHESP) database documents that the Blue-Spotted Salamander, a state-listed rare species, is located in the vicinity of the site.

The Priority Resource Map (Figure 1-4) also identifies the presence of two certified vernal pools located south of the landfill in the wetland area that resides between the Manchester and Hamilton landfills.

Future or Foreseeable Use Exposure Scenarios

The Town of Hamilton has expressed interest in developing portions of the landfill site for commercial use and the Town's economic development committee is presently evaluating specific development opportunities. A re-zoning of the area to allow such use is possible within the foreseeable future. Use of the landfill and surrounding on-site areas for residential purposes is not foreseeable. Although zoning would allow such use, it is not reasonable to presume that the Town would approve use of the former landfill for residential purposes. Continued use of the site by the Hamilton/Wenham Rod & Gun Club and the Miles River Marsh Rats Skeet and Trap Club is foreseeable.

Site Specific Risk Criteria

Chapter Five compares the CSA analytical results to DEP-accepted standards established for each media type. For example, in an effort to conservatively screen for potential impact to groundwater quality, Chapter Five discusses the groundwater data in the context of exceedences to drinking water standards (Maximum Contaminant Levels, MCLs). This reflects the requirement in 310 CMR 19.132(1)(i) that groundwater data be compared to MCLs to establish a standard means of assessing water quality impact at landfill sites. However, when evaluating risk to potential receptors, risk assessment standards for groundwater and soil are developed on a site-specific basis in accordance with procedures defined in the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000) and these standards differ from the MCL drinking water quality standards. Therefore, before discussing the qualitative risk issues associated with the Hamilton CSA data, it is appropriate to first identify the risk criteria standards that will be used for the various media evaluated. The following section summarizes the process by which the appropriate site-specific risk-based standards were selected for qualitatively assessing groundwater, surface water, sediment and landfill gas impact at the Hamilton Landfill.

Identification of Site-Specific Soil Category

Although soil samples were not collected during the CSA, this risk characterization briefly discusses potential exposure scenarios associated with the existence of the landfill. The

discussion is provided for informational purposes related to possible future development opportunities at the site.

The MCP classifies soils into three categories: S-1, S-2, and S-3, where S-1 soils are associated with the highest potential for exposure and S-3 having the lowest potential. The soils are classified on the potential for human exposure based on Table 40.0933(9) of the MCP, *Soil Category Selection Matrix-Human Exposure Potential.* Table 40.0933(9) correlates the frequency and intensity of use of the site by humans based upon whether children (age 15 or younger) are present at the site and the degree to which the soils are accessible.

The Frequency of Use indicates how often a receptor makes use of or has access to the disposal site. For classification purposes, the human receptor characteristics are divided into two categories: 1) adults-only present at the disposal site; and 2) adults and children present at the disposal site. The Intensity of Use describes the nature of the site activities and uses which could result in exposure to the receptor. The final step in determining the soil category for the site is to determine the accessibility of the soil. Per 40.0933(4)(c)(1), impacted soil is "Accessible" if it is located less than 3 feet below the ground surface and the surface is not completely covered by pavement.

Based on the current and foreseeable use of the property and the locations of contaminants, the applicable Soil Cleanup Standards for the landfill were determined as follows.

Frequency of Use (310 CMR 40.0933 (4)(a))

No full-time or part-time employees are present on the property on a daily basis. Accordingly, frequency of use for adults is characterized as "low." Visitor frequency of use for children is characterized as "low." Although the presence of children at the site is expected to be minimal it cannot be eliminated.

Intensity of Use (310 CMR 40.0933 (4)(b))

Current and foreseeable intensity of use at the site may be classified as "low." During repeat site visits S E A personnel did not observe evidence of trespassers or uses such as mountain or dirt-biking that could be interpreted as a high intensity use. The shooting range activities at both the Hamilton/Wenham Rod & Gun Club and Miles River Marsh Rats Skeet and Trap Club do not appear to disturb surface or subsurface soils.

Accessibility 310 CMR 40.0933 (4)(c):

Access to the property is limited to the west by a chain link fence that runs along Chebacco Road, whereas wetlands north, south and east of the site limit access from these directions. The landfill is covered by vegetation including grass, small trees and shrubs and the depth of cover soil is less than 3 feet below the ground surface throughout the majority of the landfill (see Chapter Three for a discussion of the landfill cover system).

Based on the potential exposure scenarios, and the provisions outlined under 310 CMR 40.0933, soils at the site are generally considered "accessible." Based on these use scenarios, Method 1 S-2 risk characterization standards are applicable for characterization of soil risk at the site.

Identification of Site-Specific Groundwater Category

In addition to considerations of direct exposure to soil, MCP Method 1 soil standards also consider potential indirect exposures that could result from leaching of contaminants from soil into groundwater. As with soil, the MCP classifies groundwater into three categories: GW-1, GW-2, and GW-3. The definitions and site-specific applicability for each category are provided in Table 7.1.

TABLE 7.1
MCP-DEFINED GROUNDWATER CATEGORIES

Groundwater Category	Definition/Site Applicability
GW-1 *310 CMR 40.0932(4)*	GW-1 groundwater standards are applicable to groundwater that is or could be used as drinking water (for example, within "Zone II" aquifer protection areas, interim wellhead protection areas, "Potentially Productive" aquifers, and Zone A/Class A surface water bodies). Although the landfill is slightly beyond the Zone A protection area of Gravelly Pond, the proximity of the Zone A warrants that, for conservative purposes, GW-1 standards be adopted for evaluating risk to groundwater at the site. *It should be noted that groundwater east of the groundwater divide (discharging to Maple Swamp as opposed to Gravelly Pond) could technically be categorized as GW-3 but was not done so in order to maintain the most conservative interpretation of potential risk to groundwater throughout the entire site area.*
GW-2 *310 CMR 40.0932(6)*	Groundwater at a disposal site is defined as GW-2 if it is located within 30 feet of an existing occupied building and the average annual depth to groundwater in that area is 15 feet or less. Category GW-2 groundwater is considered to be a potential source of vapors of oil and/or hazardous material to indoor air. Because the landfill and surrounding site areas are undeveloped, the GW-2 Groundwater Category is not applicable.
GW-3 *310 CMR 40.0932(2)*	All groundwater in Massachusetts is, at a minimum, classified as GW-3 (including groundwater additionally classified as GW-1 or GW-2). The GW-3 category considers ecological exposures resulting from the potential for groundwater at any disposal site to discharge to surface water. Therefore, since groundwater discharges to wetlands south and east of the site, as well as to Gravelly Pond west of the site, GW-3 standards must be considered in addition to the site-specific GW-1 standards referenced above.

Based on the definitions provided in Table 7.1, GW-1 and GW-3 standards are applicable for characterization of groundwater risk at the site.

Method 1 Risk Standards for Groundwater and Soil

S E A has assumed that if a quantitative risk assessment were to be performed at the site, a Method 1 risk methodology, as defined in the MCP, would be used to evaluate groundwater and soil exposure risks. Based on future site uses remaining consistent with current uses, the Method 1 risk-based standards for soil at the landfill would be subject to S-2/GW-1&3 standards (assuming all soils under consideration are within 3-feet of the ground surface). Method 1 risk-based standards for groundwater would be subject to GW-1 and GW-3 groundwater standards.

A summary of the Method 1 groundwater and soil risk categories applicable to the Hamilton Landfill is provided in Table 7.2.

TABLE 7.2
SOIL AND GROUNDWATER RISK CATEGORIES AND METHOD 1 RISK STANDARDS FOR HAMILTON SANITARY LANDFILL

Media		Risk Category	Method 1 Risk Standards (provided in MCP regulatory section specified below)
Groundwater		GW-1 & GW-3 (see note 1)	Table 1 of 40.0974
Soil	Less than 3 feet below ground surface	S-2/GW-1&3	Table 3 of 40.0975
	3 feet to 15 feet below ground surface	S-3/GW-1&3	Table 4 of 40.0975
	Greater than 15 feet below ground surface	S-3/GW-1&3	Table 4 of 40.0975

1. Where GW-3 standards are lower than GW-1 standards for a specific parameter, the GW-3 standard for the parameter shall apply.
2. Since soil sampling was not performed as part of the CSA, the risk-based soil standards referenced above are not drawn upon as part of the CSA qualitative risk assessment. These standards are provided for informational purposes and are based on the assumption that future site uses remain consistent with current uses.

With the above information, we have Method 1 risk assessment standards against which to compare the groundwater data collected during the CSA. The following section summarizes the risk-based standards adopted for the remaining media evaluated during the CSA (surface water, sediment, and landfill gas).

Risk-Based Standards for Surface Water, Sediment and Landfill Gas

The standards used to evaluate surface water, sediment and landfill gas data in Chapters Five and Six will also be used as screening benchmarks for the baseline qualitative risk assessment presented in this chapter.

Ambient Water Quality Criteria (AWQC) published by the United States Environmental Protection Agency will serve as the risk-based standards for surface water. Public health risks associated with surface water are based on physical exposure and/or consumption. Surface water risk analyses also consider risks potentially posed to organisms living within the surface water.

Sediment impacts are evaluated by comparison with concentrations provided in the DEP's January 2006 Technical Update entitled *Revised Sediment Screening Values*. The revised criteria presented in the Technical Update use Probable Effect Concentrations (PECs) for the majority of metals that comprise the sediment screening criteria and Threshold Effect Concentrations (TECs) for Polycyclic Aromatic Hydrocarbons. The PECs represent concentrations above which adverse effects to sediment-dwelling organisms are expected to occur more often than not, whereas TECs are defined as contaminant concentrations below which harmful effects are not expected to occur. As noted in the Technical Update, using PECs for metals (with the exception of mercury, which holds to a TEC-based standard) is based on experience that has shown that a condition of "no significant risk of harm" to the environment generally occurs when sediment is impacted by metals at levels below PECs.

Public health risks associated with landfill gas pertain to explosive risks. Section 310 CMR 19.132(4) of the DEP's solid waste regulations defines threshold concentrations of landfill gas that represent a potential public health risk. These threshold concentrations serve as the risk-based standards for evaluating landfill gas data collected during the CSA.

A summary of the standards used to evaluate risk in connection with surface water, sediment and landfill gas is summarized in Table 7.3.

TABLE 7.3
SURFACE WATER, SEDIMENT, AND LANDFILL GAS RISK-BASED STANDARDS ADOPTED FOR HAMILTON SANITARY LANDFILL

Media	Risk-Based Standard
Surface Water	Ambient Water Quality Criteria (AWQC), published by the US EPA
Sediment	Freshwater Sediment Screening Benchmarks (Threshold Effect Concentrations and Probable Effect Concentrations) from DEP's January 2006 Technical Update
Soil Gas	Lower Explosive Limit exceeding 10 percent in buildings, structures or underground utility conduit (per 310 CMR 19.132(4)(g))
	Lower Explosive Limit exceeding 25 percent at the property boundary or beyond (per 310 CMR 19.132(4)(h))

Identification of Landfill-Impacted Media

An initial screening of the landfill's potential impact to human health and the environment can be performed using the risk-based standards summarized in Tables 7.2 and 7.3 and comparing these standards to the environmental monitoring data collected during the CSA. Where the monitoring data reveal exceedences to the risk-based standards, specific media and areas of impact can be isolated and potential exposure routes evaluated. A comparison of the CSA monitoring data to the risk-based standards adopted for the Hamilton Sanitary Landfill is presented below and summarized by media type (groundwater, surface water, sediment, and soil gas).

Groundwater

Using the GW-1and GW-3 risk-based standards provided in 310 CMR 40.0974 (Table 1) and comparing these standards to the groundwater analytical results (see Table 7.8 provided at the end of this chapter) revealed one monitoring well location where arsenic was detected in excess of its GW-1 standard. The exceedence occurred at MW-4D during the first two rounds of CSA monitoring, as summarized in Table 7.4

TABLE 7.4
MONITORING WELLS WHERE GW-1 OR GW-3 STANDARDS WERE EXCEEDED

Analyte	Standard		MW-4D	
	GW-1	GW-3	Round 1	Round 2
Arsenic	0.01 mg/l	0.9 mg/l	0.015	0.024

Therefore, from a risk-based perspective, groundwater impact is limited to arsenic deeper within the aquifer in the location of MW-4D, where the well is screened from 27-feet to 37-feet below the ground surface (set above the bedrock/overburden interface). The potential risk-based impact of arsenic at this location can be further refined by calculating an exposure point concentration derived from the four rounds of monitoring data obtained from MW-4D. Exposure point concentrations are defined as the average concentration of a compound sampled during each monitoring round. If a non-detect for the parameter is recorded during any of the monitoring rounds, one-half (½) of the laboratory reporting limit is used to calculate an exposure point concentration for that particular parameter. Exposure point concentrations were calculated in accordance with the EPA's *Test Methods for Evaluating Solid Waste,*

Physical/Chemical Methods, Volume II. Using this methodology, the exposure point concentration for arsenic at MW-4D is 0.011 mg/l, as presented in Table 7.5

TABLE 7.5
GROUNDWATER EXPOSURE POINT CONCENTRATIONS[1]

Analyte	Standard		MW-4D
	GW-1	GW-3	
Arsenic	0.01 mg/l	0.9 mg/l	**0.011 mg/l**

1. Exposure point concentrations were calculated at all well locations where monitoring parameters were detected in excess of the GW-3 risk-based standards.
2. Bolded values indicate exposure point concentrations in excess of GW-1 or GW-3 standards (whichever standard is lower).

Although the exposure point concentration for arsenic at MW-4D is slightly above the GW-1 standard, the non-detect recorded during the final two rounds of CSA monitoring may be indicative of trends that could lead to a continued reduction in the exposure point concentration. At this stage, given the absence of arsenic in the remaining wells (with the exception of one detection at MW-4S, albeit well below the GW-1 standard), arsenic is not interpreted as representing a public or ecological health risk. As discussed in Chapter Five, naturally occurring arsenic in soil has been reported throughout the North Shore, including in the neighboring communities of Beverly and Essex. As arsenic was not detected in monitoring wells located downgradient of the landfill, its detection seasonally in MW-4D could be more likely attributed to naturally occurring arsenic as opposed to waste materials within the landfill.

With respect to nearby residential private wells located north of the site along Chebacco Road, the groundwater contour mapping suggests that these wells are not downgradient of the landfill as groundwater flow from the landfill diverts either to the west (Gravelly Pond) or east (Maple Swamp), but not northerly in the direction of the homes. Furthermore, water quality obtained at SW-1 and "background" monitoring well MW-1, both of which are monitoring points representative of groundwater quality north of the site, has not been negatively impacted by the landfill. As such, private wells further north of the site are not expected to be adversely impacted.

Based on the CSA monitoring results, S E A has concluded that groundwater quality in the vicinity of the landfill does not represent a public or ecological health risk and therefore does not require further risk evaluation.

Surface Water

Surface water analyte concentrations were compared to AWQC for risk characterization purposes. EPA has developed AWQC for exposure of both humans (consumption of water and/or organisms living in the surface water) and for organisms living in the surface water. The surface water samples were collected from the groundwater ditch and pond north of the site, both of which are located east of the groundwater divide, where groundwater flow is towards Maple Swamp. Since human consumption of surface water within the ditch and pond is unlikely and not foreseeable, it is appropriate to compare the surface water analytical results to the standards established to protect aquatic-living organisms. These standards and the CSA surface water analytical results are provided in Table 5.3 of Chapter Five. As shown in Table 5.3, exceedences of AWQC concentrations for organisms living in surface water were limited to cyanide and iron.

Iron was detected consistently at each of the three surface water monitoring locations, however, the iron concentration only exceeded its respective AWQC (chronic concentration for organisms) at SW-2 during the first of the two rounds of CSA monitoring. The exposure point concentration for iron at SW-2, using the methodology described previously, is 1.89 mg/l. The cyanide AWQC exceedence (chronic concentration) was limited to SW-2 during one surface water monitoring event. The exposure point concentration for cyanide at SW-2 is 0.004 mg/l. The surface water exposure point concentrations are summarized in Table 7.6.

TABLE 7.6
SURFACE WATER EXPOSURE POINT CONCENTRATIONS[1]

Analyte	AWQC (chronic) Standard	SW-1 (ditch)	SW-2 (ditch)	SW-3 (pond)
Cyanide	0.0052 mg/l	---	0.004 mg/l	---
Iron	1.0 mg/l	---	**1.89 mg/l**	---

1. Exposure point concentrations were calculated at all surface water locations where monitoring parameters were detected in excess of EPA Ambient Water Quality Criteria (AWQC) chronic concentrations for organisms.
2. Bolded values indicate exposure point concentrations in excess of AWQC standards.

Since the exposure point concentration for cyanide is below the AWQC standard, further discussion is not warranted. Nevertheless, it should be noted that cyanide detected in SW-2 was total cyanide and not physiologically available cyanide (PAC), on which the AWQC risk standard is based (total cyanide returns higher concentrations than PAC). Based on the detected concentration of total cyanide and, as the tested surface water body is not utilized for drinking water purposes and as such use is not reasonably foreseeable, no significant risk is believed associated with this one-time detection.

Based on the concentrations of iron recorded during the CSA surface water monitoring program, it is possible that iron may have a negative impact on surface water organisms within the groundwater ditch near SW-2. However, given the prevalence of iron in the environment (both naturally occurring and at landfill sites), as well as its classification as a Nonpriority Pollutant AWQC, its presence at exposure point concentrations exceeding the AWQC is not considered a significant risk.

Based on the CSA monitoring results, S E A has concluded that surface water quality in the groundwater ditch and large dug pond do not represent a public or ecological health risk and therefore further risk evaluation of these on-site surface water bodies is not warranted.

Sediment

The CSA sediment monitoring results are compared to the *Revised Sediment Screening Values* provided in the DEP's January 2006 Technical Update. These values have been established to identify potential risk of harm to sediment-dwelling organisms. The sediment samples were collected from the groundwater ditch (SED-1 and SED-2) and the large dug pond (SED-3), where each sediment monitoring location corresponded to the three surface water monitoring locations (SW-1, SW-2, and SW-3). Table 7.9, provided at the end of this chapter, presents the results of the two rounds of sediment monitoring and highlights those locations where the results exceeded the DEP's revised sediment screening values (TECs and PECs).

As shown in Table 7.9, the only exceedence of a sediment screening benchmark occurred at SED-2, where arsenic was detected at 40 mg/kg in comparison to the arsenic PEC of 33 mg/kg. Based on this exceedence, an exposure point concentration of 31 mg/kg was calculated at SED-2. The sediment exposure point concentration is highlighted in Table 7.7.

TABLE 7.7
SEDIMENT EXPOSURE POINT CONCENTRATIONS[1]

Analyte	Sediment Screening Value	SED-2 (ditch)
Arsenic	33 mg/kg (PEC)	31 mg/kg

1. Exposure point concentrations were calculated at all sediment locations where monitoring parameters were detected in excess of DEP Revised Sediment Screening Values as provided in the DEP's January 2006 Technical Update.
2. Bolded values indicate exposure point concentrations in excess of Sediment Screening Values.
3. Probable Effect Concentration (PEC) = concentrations above which adverse effects are expected to occur more often than not

Since the exposure point concentration for arsenic is below the Sediment Screening Value, further discussion is not warranted. Therefore, based on the CSA monitoring results, it is S E A's opinion that sediment quality in the groundwater ditch and large dug pond does not require further risk evaluation.

Landfill Gas

Four rounds of soil gas monitoring were performed during the CSA. Soil gas was field screened for methane, carbon dioxide, hydrogen sulfide and total VOCs, where readings were collected from twenty-four soil gas probes located along the landfill perimeter. Three of the perimeter probes are located near the skeet shooting range (SG-17, SG-18 and SG-19) and two are located north of the groundwater ditch in the vicinity of the Hamilton/Wenham Rod & Gun Club shooting range (probes SG-23 and SG-24). The probes located near the two gun ranges were installed to determine whether landfill gases may be migrating to these two on-site recreational use areas.

As discussed in Chapter Six, there were no detections of landfill gas (methane, hydrogen sulfide, total VOCs) at any of the monitoring locations during any of the four rounds of CSA monitoring (refer to Appendix H for soil gas monitoring results). Therefore, in the event the landfill is generating any landfill gas, the results of the CSA soil gas monitoring reveal that it is not migrating into adjacent soils. As such, landfill gas does not represent a risk to public health or safety under current site conditions and does not warrant further risk evaluation.

Risk Assessment Summary

The groundwater, surface water, sediment, and landfill gas analytical data collected during the CSA field investigations were evaluated to identify landfill-impacted media in the vicinity of the site. For the purposes of performing the baseline qualitative risk assessment, this evaluation included the identification of site-specific risk-based standards for the various media analyzed during the CSA. The majority of these standards were derived using methodologies provided in the MCP and related guidance documents. The risk-based standards were then compared to the CSA analytical results to interpret the potential risk the landfill presents to human health and the environment.

Arsenic was the only compound detected above a GW-1 standard, and this was limited to monitoring well MW-4D, located south (upgradient) of the landfill. Given the isolated detection of arsenic at MW-4D during two of the four rounds of monitoring, its presence is not interpreted as representing a public or ecological health risk. With respect to surface water, elevated levels of iron and total cyanide were detected once in the groundwater ditch at monitoring location SW-2. The iron concentration may have a negative impact on surface water organisms in the vicinity of SW-2, however, the presence of this Nonpriority Pollutant, as defined by DEP, is not considered significantly detrimental to warrant further risk evaluation. The cyanide exposure point concentration at SW-2 did not exceed the AWQC for cyanide, therefore, further risk evaluation with respect to this compound is not warranted. Nevertheless, the detection of cyanide at this location warrants that future (post-CSA) landfill monitoring include physiologically available cyanide (PAC), as opposed to total cyanide analysis.

Sediment monitoring revealed an elevated level of arsenic at monitoring location SED-2 (collected from the groundwater ditch), however, the calculated exposure point concentration at this location was less than the DEP's PEC Sediment Screening Value. Based on the results of the CSA sediment monitoring, sediment quality in the ditch and large dug pond does not warrant further risk evaluation.

Since no landfill gas readings were recorded during the four rounds of soil gas monitoring, landfill gas does not present a risk to public health, safety or the environment. Accordingly, landfill gas does not warrant further risk evaluation.

Table 7.8
Comparison of Groundwater Analytical Results to MCP Risk-Based Standards
Hamilton Landfill Comprehensive Site Assessment

PARAMETERS	MCP RISK-BASED GROUNDWATER STANDARDS*		Units	MW-1				MW-2				MW-3			
				05-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	5-Jul-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
	GW-1	GW-3		L0703070-01	L0709578-01	L0716044-01	L0801067-01	L0703115-01				L0703115-02	L0709578-02	L0716044-02	L0801067-02
Alkalinity, Total			mg CaCO3/L	16	30	26	13	83				8.8	62	82	96
Solids, Total Dissolved			mg/l	130	140	82	52	160				55	91	120	230
Cyanide, Total	0.2	0.03	mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005				< 0.005	< 0.005	0.007	<0.005
Chloride			mg/l	21	19	12	8.8	7.6				7	6	6.3	40
Nitrogen, Nitrate			mg/l	< 0.1	< 0.1	<0.1	0.52	0.86				0.14	0.17	0.1	<0.5
Sulfate			mg/l	20	38	18	<10	34				< 10	12	16	44
Chemical Oxygen Demand			mg/l	< 20	30	<20	<20	45				< 20	< 20	41	<20
Dissolved Metals by MCP 6000/7000 series															
Arsenic, Dissolved	0.01	0.9	mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005				< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	50	mg/l	0.02	0.018	0.014	0.032	0.033				0.027	0.062	0.069	0.038
Cadmium, Dissolved	0.005	0.004	mg/l	< 0.0005	< 0.004	<0.004	<0.004	< 0.004				< 0.004	< 0.004	<0.004	<0.004
Calcium, Dissolved			mg/l	7.6	6.8	6.3	6.2	18				4.8	15	19	30
Chromium, Dissolved	0.1	0.3	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01				< 0.01	< 0.01	<0.01	<0.01
Copper, Dissolved			mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01				< 0.01	< 0.01	0.024	<0.01
Iron, Dissolved			mg/l	12	12	11	<0.05	1.5				< 0.05	2	1.6	9.9
Lead, Dissolved	0.015	0.01	mg/l	< 0.0005	< 0.01	<0.01	<0.01	< 0.01				< 0.01	< 0.01	<0.01	<0.01
Manganese, Dissolved			mg/l	0.749	0.645	0.676	0.069	2.22				0.385	5.87	7.33	5.44
Mercury, Dissolved	0.002	0.02	mg/l	< 0.0002	< 0.0002	<0.0002	<0.0002	< 0.0002				< 0.0002	< 0.0002	<0.0002	<0.0002
Selenium, Dissolved	0.05	0.1	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01				< 0.01	< 0.01	<0.01	<0.01
Silver, Dissolved	0.1	0.007	mg/l	< 0.0005	< 0.0005	<0.007	<0.007	< 0.007		D		< 0.007	< 0.007	<0.007	<0.007
Sodium, Dissolved			mg/l	11	14	11	6.1	7.2				5.1	5	6.6	20
Zinc, Dissolved	5	0.9	mg/l	0.0088	< 0.05	<0.05	<0.05	< 0.05				< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)															
1,2,4-Trimethylbenzene			mg/l	< 0.0025	<0.0025	<0.0025	<0.0025	0.022				< 0.0025	< 0.0025	< 0.0025	< 0.0025
1,3,5-Trimethylbenzene			mg/l	< 0.0025	<0.0025	<0.0025	<.006	0.0084		R		< 0.0025	< 0.0025	< 0.0025	<0.006
Benzene	0.005	10	mg/l	<0.0005	<0.0005	<0.0005	<.0005	<0.0005				<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	1	mg/l	< 0.0005	< 0.0005	<0.0005	<.0005	< 0.0005				< 0.0005	0.0034	0.0029	<0.0005
Chloroform	0.07	20	mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075				< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	50	mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005				< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether			mg/l	< 0.0025	<.0025	<0.0025	<.0025	< 0.0025		Y		< 0.0025	< 0.0025	<0.0025	<0.0025
Ethylbenzene	0.7	5	mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.002				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Isopropylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00067				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl tert butyl ether	0.07	50	mg/l	< 0.001	< 0.001	<0.001	<.001	< 0.001				< 0.001	< 0.001	<0.001	<0.001
n-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0042				< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0028				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene	0.14	20	mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	0.0031				< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	0.0045				< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0014				< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	0.0096				< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0014				< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)															
SVOCs			mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)															
PCBs			mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)															
Pesticides			mg/l	ND	NA	ND	NA	ND				ND	NA	ND	NA

Notes:

* GW-1 and GW-3 standards obtained from Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2), *Identification of Applicable Groundwater Standards in Method 1.*

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which exceed groundwater 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 groundwater standard based on Office of Research and Standards Guidelines (ORSG).

Table 7.8
Comparison of Groundwater Analytical Results to MCP Risk-Based Standards
Hamilton Landfill Comprehensive Site Assessment

PARAMETERS	MCP RISK-BASED GROUNDWATER STANDARDS*		Units	MW-4S				MW-4D				MW-5			
				06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	05-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
	GW-1	GW-3		L0703115-03	L0709578-03	L0716044-03	L0801067-03	L0703115-04	L0709578-04	L0716044-04	L0801067-04	L0703070-02	L0709578-05	L0716044-05	L0801067-05
Alkalinity, Total			mg CaCO3/L	<2	2.1	220	3.7	100	200	70	240	270	280	240	210
Solids, Total Dissolved			mg/l	31	47	310	36	140	250	94	310	420	360	340	370
Cyanide, Total	0.2	0.03	mg/l	< 0.005	< 0.005	0.009	<0.005	< 0.005	< 0.005	0.006	<0.005	< 0.005	< 0.005	0.015	<0.005
Chloride			mg/l	7.9	6.4	42	10	15	20	16	34	57	48	55	67
Nitrogen, Nitrate			mg/l	< 0.1	0.1	<0.1	<0.1	< 0.1	< 0.1	<0.1	<0.5	4.1	1.7	1.3	7.5
Sulfate			mg/l	< 10	< 10	13	11	< 10	< 10	<10	10	12	< 10	12	<10
Chemical Oxygen Demand			mg/l	< 20	< 20	34	<20	< 20	32	<20	23	< 20	30	20	<20
Dissolved Metals by MCP 6000/7000 series															
Arsenic, Dissolved	0.01	0.9	mg/l	< 0.005	< 0.005	0.005	<0.005	0.015	0.024	<0.005	<0.005	< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	50	mg/l	0.029	0.026	0.051	0.03	0.065	0.043	0.043	0.05	0.311	0.32	0.447	0.183
Cadmium, Dissolved	0.005	0.004	mg/l	< 0.004	< 0.004	<0.004	<0.004	< 0.004	< 0.004	<0.004	<0.004	< 0.0005	< 0.004	<0.004	<0.004
Calcium, Dissolved			mg/l	1.2	1.2	42	3.6	36	36	20	44	80	73	63	74
Chromium, Dissolved	0.1	0.3	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Copper, Dissolved			mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Iron, Dissolved			mg/l	< 0.15	0.11	4.5	0.05	10	25	0.53	4.6	4.2	1.4	3.8	0.3
Lead, Dissolved	0.015	0.01	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.0005	< 0.01	<0.01	<0.01
Manganese, Dissolved			mg/l	0.037	0.021	8.3	0.156	6.23	1.24	0.446	9.11	0.548	1.04	4.77	2.8
Mercury, Dissolved	0.002	0.02	mg/l	< 0.0002	< 0.0002	<0.0002	<0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002	< 0.0002	< 0.0002	<0.0002	<0.0002
Selenium, Dissolved	0.05	0.1	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Silver, Dissolved	0.1	0.007	mg/l	< 0.007	< 0.007	<0.007	<0.007	< 0.007	< 0.007	<0.007	<0.007	< 0.0005	< 0.0005	<0.007	<0.007
Sodium, Dissolved			mg/l	5.1	4.2	41	8	27	19	14	33	40	43	42	36
Zinc, Dissolved	5	0.9	mg/l	< 0.05	< 0.05	<0.05	<0.05	< 0.05	< 0.05	<0.05	0.067	< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)															
1,2,4-Trimethylbenzene			mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
1,3,5-Trimethylbenzene			mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
Benzene	0.005	10	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00056	0.00064	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	1	mg/l	< 0.0005	< 0.0005	0.00055	<0.0005	0.0014	< 0.0005	0.0029	0.004	< 0.0005	< 0.0005	<0.0005	<0.0005
Chloroform	0.07	20	mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	0.0016	<0.00075	<0.00075	<0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	50	mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.00063	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether			mg/l	< 0.0025	< 0.0025	0.0055	<0.0025	0.018	0.0057	0.026	0.028	0.0046	0.0044	<0.0025	0.0028
Ethylbenzene	0.7	5	mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Isopropylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl tert butyl ether	0.07	50	mg/l	< 0.001	< 0.001	<0.0001	<0.001	< 0.001	< 0.001	<0.0001	<0.001	< 0.001	< 0.001	<0.001	<0.001
n-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene	0.14	20	mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene			mg/l	0.00073	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)															
SVOCs			mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)															
PCBs			mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)															
Pesticides			mg/l	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA

Notes:

* GW-1 and GW-3 standards obtained from Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2), *Identification of Applicable Groundwater Standards in Method 1.*

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which exceed groundwater 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 groundwater standard based on Office of Research and Standards Guidelines (ORSG).

Table 7.8
Comparison of Groundwater Analytical Results to MCP Risk-Based Standards
Hamilton Landfill Comprehensive Site Assessment

PARAMETERS	MCP RISK-BASED GROUNDWATER STANDARDS*		Units	MW-6S				MW-6D			
				06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08	06-MAR-07	05-JUL-07	25-OCT-07	23-JAN-08
	GW-1	GW-3		L0703115-05	L0709578-06	L0716044-06	L0801067-06	L0703115-06	L0709578-07	L0716044-07	L0801067-07
Alkalinity, Total			mg CaCO3/L	38	44	43	75	79	76	66	96
Solids, Total Dissolved			mg/l	130	240	210	280	220	230	210	230
Cyanide, Total	0.2	0.03	mg/l	< 0.005	< 0.005	**0.007**	<0.005	< 0.005	< 0.005	**0.007**	<0.005
Chloride			mg/l	9.8	32	33	57	40	43	46	40
Nitrogen, Nitrate			mg/l	1.4	0.27	<0.1	0.87	< 0.1	< 0.1	<0.1	<0.5
Sulfate			mg/l	31	69	84	60	35	34	35	44
Chemical Oxygen Demand			mg/l	< 20	< 20	<20	<20	< 20	20	<20	<20
Dissolved Metals by MCP 6000/7000 series											
Arsenic, Dissolved	0.01	0.9	mg/l	< 0.005	< 0.005	<0.005	<0.005	< 0.005	< 0.005	<0.005	<0.005
Barium, Dissolved	2	50	mg/l	0.018	0.038	0.034	0.051	0.031	0.029	0.032	0.038
Cadmium, Dissolved	0.005	0.004	mg/l	< 0.004	< 0.004	<0.004	<0.004	< 0.004	< 0.004	<0.004	<0.004
Calcium, Dissolved			mg/l	21	34	32	49	28	25	26	30
Chromium, Dissolved	0.1	0.3	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Copper, Dissolved			mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Iron, Dissolved			mg/l	< 0.05	2.7	3.4	<0.05	6.4	9.6	11	9.9
Lead, Dissolved	0.015	0.01	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Manganese, Dissolved			mg/l	< 0.01	0.536	0.769	<0.01	5	3.88	3.36	5.44
Mercury, Dissolved	0.002	0.02	mg/l	< 0.0002	< 0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0002
Selenium, Dissolved	0.05	0.1	mg/l	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01	<0.01
Silver, Dissolved	0.1	0.007	mg/l	< 0.007	< 0.007	<0.007	<0.007	< 0.007	< 0.007	<0.007	<0.007
Sodium, Dissolved			mg/l	12	15	16	35	19	20	20	20
Zinc, Dissolved	5	0.9	mg/l	0.09	0.116	0.068	0.103	< 0.05	< 0.05	<0.05	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)											
1,2,4-Trimethylbenzene			mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
1,3,5-Trimethylbenzene			mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	<0.0025
Benzene	0.005	10	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	1	mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	0.00073
Chloroform	0.07	20	mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	50	mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Ethyl ether			mg/l	< 0.0025	< 0.0025	<0.0025	<0.0025	< 0.0025	< 0.0025	<0.0025	**0.0027**
Ethylbenzene	0.7	5	mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Isopropylbenzene			mg/l	< 0.0005	< 0.0005	<0.0005	<0.0005	< 0.0005	< 0.0005	<0.0005	<0.0005
Methyl tert butyl ether	0.07	50	mg/l	< 0.001	< 0.001	<0.0001	<0.001	**0.0019**	**0.0021**	**0.0023**	**0.0018**
n-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene	0.14	20	mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	5	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene			mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)											
SVOCs			mg/l	ND	NA	ND	NA	ND	NA	ND	NA
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)											
PCBs			mg/l	ND	NA	ND	NA	ND	NA	ND	NA
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)											
Pesticides			mg/l	ND	NA	ND	NA	ND	NA	ND	NA

Notes:

* GW-1 and GW-3 standards obtained from Massachusetts Contingency Plan (MCP) 310 CMR 40.0974(2), *Identification of Applicable Groundwater Standards in Method 1.*

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which exceed groundwater 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 groundwater standard based on Office of Research and Standards Guidelines (ORSG).

Table 7.9
Summary of Sediment Analytical Results
Hamilton Landfill Comprehensive Site Assessment

PARAMETER	RECOMMENDED FRESHWATER SEDIMENT SCREENING VALUES*			SED-1		SED-2		SED-3	
				5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07	5-Mar-07	25-OCT-07
	TEC	PEC	Units	0703022-01	L0716044-10	0703022-02	L0716044-11	0703022-03	L0716044-12
Metals									
Arsenic		33	mg/Kg	**0.97**	**1.6**	**40**	**22**	**6.2**	**3.7**
Barium			mg/Kg	**8.6**	**7.3**	**23**	**33**	**34**	**28**
Cadmium		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		110	mg/Kg	**13**	**9.1**	**10**	**11**	**12**	**15**
Copper		150	mg/Kg	**8.8**	**11**	**10**	**14**	**16**	**7.1**
Iron			mg/Kg	**8100**	**6900**	**24000**	**26000**	**17000**	**10000**
Lead		130	mg/Kg	**6.0**	**6.1**	**33**	**43**	**8.6**	**18**
Manganese			mg/Kg	**130**	**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		460	mg/Kg	**36**	**41**	**54**	**100**	**54**	**40**
Pesticides by 8081 (Results Above Detection Limits Only)									
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
Polychlorinated Biphenyls by 8082 (Results Above Detection Limits Only)									
TOTAL PCBs	**60**		µg/Kg	ND	ND	ND	ND	ND	ND
Volatile Organics by 8260 (Results Above Detection Limits Only)									
Acetone			µg/Kg	< 510	<1200	**1200**	<2800	**830**	<1300
Methylene chloride			µg/Kg	**580**	<1200	**1300**	<2800	< 720	<1300
Semi-Volatile Organics by 8270 (Results Above Detection Limits Only)									
SVOCs	compound specific		µg/Kg	ND	ND	ND	ND	ND	ND

Notes:
* Sediment Screening Values obtained from From DEP's January 2006 Technical Update entitled: "Revised Sediment Screening Values".
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 Sediment Screening Values.

CHAPTER EIGHT
Findings, Conclusions and Recommendations

Introduction

A summary of the CSA findings and conclusions are presented below, followed by recommendations that will move the project from the CSA to the post-CSA phase of the landfill assessment and closure process.

Findings

Landfill Delineation, Landfill Areas and Cover Soil Observations

1. During the CSA a total of forty-one test pits were advanced at the Hamilton Sanitary Landfill for the purposes of delineating the limit of waste. These delineation activities have established the landfill as encompassing an area of approximately 12.7 acres.

2. During the test pitting program S E A documented the nature of cover soils encountered at each pit for the purposes of comparing our findings with the cover soils approved by DEQE for the Area 1 closure (per CDM's July 1976 Landfill Feasibility Study), as well as documenting the cover system placed on Area 2, for which there was no apparent DEQE-approved plan. S E A's file review revealed that a cover system for the Area 1 portion of the landfill was installed in 1980 and a cover system for Area 2 was installed in 1984.

3. The majority of the sixteen test pits advanced in Area 1 met the minimum cover soil thickness (2 feet) and general material types (loam and silty sand) approved by DEQE for this portion of the landfill. The Area 1 portion of the landfill is estimated to cover an area of approximately 7.1 acres.

4. The test pits advanced along the perimeter of Area 2 revealed a more varying cover system thickness and material type, which could be attributed to the work being performed in the absence of engineered plans that would have aided in a more uniform placement of the cover soils. The total cover thickness at six of the eight test pits advanced in Area 2 was less than the DEQE-required minimum depth of 24 inches required by the regulations in effect at the time the Area 2 cover was placed. The Area 2 portion of the landfill is estimated to cover an area of approximately 2.9 acres.

5. The fill material observed in Areas 1 and 2 consisted of material commonly associated with municipal solid waste (MSW), including glass, metal, plastic, paper, wood, and rags.

6. In addition to Areas 1 and 2, the test pit investigations led to the delineation of three additional areas that contribute to the total 12.7 acre landfill area. These areas are referred to as Area 1A, Area 2A, and Area 2B.

7. Area 1A, which encompasses 1.3 acres, abuts Area 1 and is located in the fairly level terrain between the landfill access road and Chebacco Road. The test pits advanced in this area revealed that waste material was located at a depth of approximately 6-inches beneath the surface of the gravel access road and extends westerly beneath the DPW soil stockpiles towards the property line that runs along Chebacco Road. The waste in this area was fairly deep, extending to an average of 11 feet below the ground surface. The composition of the waste included burn material, wood, tires, stumps, leaves, brick, concrete, plastic, glass, and metal.

8. Area 2A encompasses approximately 0.7 acres and underlies the shooting area used by the Miles River Marsh Rats Skeet and Trap Club. Test pits were excavated in this area to determine whether there was evidence of septage disposal in the area (per information provided on CDM's 1991 ISA Base Plan). None of the eight CSA test pits advanced in this area uncovered septage, however, miscellaneous waste was encountered consisting mainly of construction debris, including shingles, drywall, and wood, as well as general waste such as rags, plastic and metal debris. The depth of the fill was typically no greater than 6 feet, with a cover soil thickness ranging from 6 to 12-inches.

9. Area 2B encompasses approximately 0.7 acres and is located on the northwestern perimeter of Area 2. The fill limit along the western-most edge of this area was not confirmed due to the presence of abutting wetlands, however, the boundary is assumed to follow the wetland edge, resulting in a fill area of approximately 0.7 acres. The waste material encountered included wood, rags, plastic and metal debris intermixed with soil. The depth of the fill was typically no greater than 5 feet, with a cover soil thickness ranging between 6 inches in several locations to 2 feet at TP-18A.

Current Site Uses and Future Development Considerations

1. A small portion of the landfill is used for yard waste drop-off, where residents may bring branches, brush, leaves and grass clippings to the site approximately one Wednesday per month between the months of April and November, as weather conditions permit. The branches and brush are stockpiled near the site entrance within a 40-foot by 60-foot area at the southwestern corner of the landfill. This material is chipped as necessary by the Hamilton Department of Public Works and used within Town as erosion control material. Grass clippings and leaves are mixed with clean fill stockpiled at the site and used by the DPW for loaming and seeding along Town roads.

2. In addition to the soil stockpile used to mix grass clippings and leaves, the DPW also has other soil and miscellaneous material stockpiles at the site. These stockpiles are located in the level, 80-foot wide corridor between the landfill access road and Chebacco Road. The DPW stockpile area forms part of the Area 1A portion of the landfill.

3. The Town leases portions of the landfill site to two local gun clubs. The Hamilton/Wenham Rod & Gun Club lease approximately 8 acres of land located in the northeastern corner of the site and the Miles River Marsh Rats Skeet and Trap Club lease approximately 5 acres of land adjacent to the eastern perimeter of the landfill. The Rod & Gun Club activities include a rifle and pistol shooting range, as well as an archery area. The Miles River Marsh Rats operate a skeet and trap shooting range.

4. The area leased by the Rod & Gun Club does not encompass any portion of the landfill area and the range activities are located more than 500 feet northeast of the northernmost portion of the landfill. In contrast, the lease area for the Miles River Marsh Rats includes approximately 0.7 acres of the landfill (Area 2A), where the 0.7-acres serves as the shooting area that also hold the high and low skeet houses and trap house (structures from which the clay targets are launched).

5. The Town of Hamilton is interested in pursuing opportunities that would assist it in generating non-residential tax revenue. The landfill site, given its size and proximity to Route 128, represents the Town's best opportunity for creating a commercially-zoned area within which private development could take place. In its pursuit of this potential development opportunity, the Town is considering creating a commercial zoning overlay district that would allow development at the site for such uses as research and development (biotechnology, medical, environmental science, computer technology), light

manufacturing, office, and public space (areas used for passive recreation, including outdoor cafes or restaurant seating).

6. Potential site development considerations are in the preliminary evaluation stage. Currently, the Town's development objectives are broadly defined to include all portions of the site, including areas that may include all or part of the landfill itself.

Hydrogeology

1. The site is located in the North Coastal Watershed basin of northeastern Massachusetts; within the sub-basin that drains to the Essex River. Regionally, groundwater flow is generally to the north/northeast towards Maple Swamp and Chebacco Lake. The site and vicinity has been heavily reworked through historic activities including gravel mining, excavation and filling due to landfill operations, dewatering, and possibly peat mining.

2. The landfill is located along the edge of a groundwater divide that bisects the disposal area along its north/south axis. Local groundwater and surface flow in the site area discharges either to Gravelly Pond, approximately 400 feet west of the landfill, or to wetlands that drain to Maple Swamp.

3. The surficial geologic deposits in the area consist of sand and gravel deposits (west near Gravelly Pond), swamp deposits, and bedrock outcrops overlain by deposits of glacial till. Bedrock at the site is Cape Ann Granite. A major northeast trending fault is mapped about 700 feet to the southeast of the site.

4. The site-specific geology has been characterized based on the results of advancing borings in six locations along the landfill perimeter. The borings were advanced for the purposes of installing the CSA groundwater monitoring well network (MW-1 through MW-6), as well as confirming the depth to bedrock at several locations. Bedrock was confirmed by coring a minimum of 5-feet into the bedrock surface. Monitoring well couplets were installed at locations MW-4 (MW-4S/D) and MW-6 (MW-6S/D). Well MW-4D was set just above the bedrock surface and well MW-6D was set within bedrock.

5. The deposits observed in the CSA borings are consistent with the descriptions of local geology in published literature. The overburden at the site generally ranges from nonexistent to less than 50 feet thick, and consists of gravelly coarse sands overlying

finer deposits of sand, silt and some clay. Site observations are consistent with regional reports of thicker overburden deposits in valleys, with thinner deposits at higher elevations (Carnevale, 1979).

6. The overburden is thickest at MW-4S/D (38 feet), mainly consisting of sand with some clay between 25 and 35 feet below ground surface.

7. The understanding of site geology has been characterized based on several sources, including: 1) the compilation of previous studies presented in the Hamilton ISA Report; 2) the January 1996 Manchester Landfill CSA Report; 3) the May 1996 Zone II Delineation for Round Pond Wells 1 and 2; and 4) stratigraphic information obtained from the borings advanced by S E A during the Hamilton Landfill CSA field investigations. This information was used to prepare a bedrock contour map and geologic cross-sections in the site area.

8. The geologic cross-sections depict the removal of sandy overburden deposits down close to the groundwater table and the replacement of these deposits with landfill material. The deeper undisturbed sands appear to become finer to the east with distance from Gravelly Pond, consistent with a deltaic deposit (Reed, 1976). The landfill itself, consisting of Area 1 to the south and Area 2 to the north, has an estimated maximum fill thickness ranging between 30 and 40 feet deep.

9. The bedrock contouring was generated based on the observed depth to rock in the borings, field observations of outcropping bedrock, previous investigations, and regional topographic and geologic maps. Because bedrock structure generally controls topography, the depth to bedrock at the site varies with topography, ranging from 0 to 50 feet below grade, and outcropping in many locations across the site and surrounding areas. The bedrock surface in the site area is quite variable, with elevations beneath the landfill ranging from approximately 30 feet to 90 feet (NGVD 1929). The bedrock ridge lying beneath the central portion of the landfill is a major feature of the bedrock surface, and influences the site hydrogeology.

10. Water table elevations were measured during the four rounds of CSA water quality monitoring: March 2007, July 2007, October 2007, and January 2008. Measurements were collected from the six shallow groundwater wells (MW-1, MW-2, MW-3, MW-4S, MW-5, and MW-6S) installed at the Hamilton Landfill and four shallow groundwater

wells that comprise part of the Manchester Landfill well network (MW-1S_{manch}, MW-2S_{manch}, MW-5S and MW-6S_{manch}). In addition, three surface water piezometers (PZ-1, PZ-2, and PZ-3), installed by S E A as part of the CSA were also used to map groundwater in the site area.

11. Based upon the four rounds of monitoring performed, high groundwater conditions were observed during the January 2008 monitoring round (Round 4) and low groundwater conditions were observed during the October 2007 monitoring round (Round 3). Groundwater contour maps were generated for both high and low groundwater conditions. Water levels were generally 2 to 3 feet lower during the October 2007 round as compared to the January 2008 round.

12. The high and low groundwater contour plans confirm the presence of a groundwater divide as previously mapped by CDM in 1976. The groundwater contour plans show the divide runs roughly along the north-south axis of the landfill, and appears to curve towards the west (away from the landfill) in the northern portion of the site. Groundwater flow west of the divide flows westerly towards Gravelly Pond and groundwater flow east of the divide flows northeasterly towards Maple Swamp.

13. Horizontal gradients were calculated east and west of the divide under high and low groundwater conditions. The average high and low groundwater gradients calculated for each side of the divide were then averaged to generate a typical representative horizontal gradient east of the divide (heading towards Maple Swamp) and west of the divide (heading towards Gravelly Pond). The representative gradient east of the divide is 0.0038, whereas the gradient west of the divide is roughly five times higher at 0.021.

14. Vertical hydraulic gradients were obtained from three piezometers (PZ-1, PZ-2 and PZ-3) and monitoring well couplets MW-4S/D and MW-6S/D. Interpretation of the gradients recorded at the three piezometer locations indicates that groundwater on the eastern side of the groundwater divide has predominantly an upward vertical flow component. The gradients for the well couplets are consistent with observations of groundwater flow patterns. Well couplet MW-4S/D, located at the top of the flat part of the divide, south of the landfill, varied between low to moderate upward and downward gradients. In contrast, the couplet of MW-6S/D had pronounced upward vertical gradients for all measurements.

15. The horizontal hydraulic conductivities at monitoring wells MW-1 through MW-6 were calculated using rising head slug tests. The values of overburden hydraulic conductivity ranged from a low of 9.5 feet per day at MW-4D to a high of 47.5 feet per day at MW-4S. These values are within the range reported for clean sand to silty sand (Freeze and Cherry, 1979) and consistent with the descriptions of the deposits in which the wells are installed.

16. Using the typical horizontal hydraulic gradients for each side of the groundwater divide and using an assumed porosity of 0.25 for sands, the calculated groundwater seepage velocities for the overburden range from 0.24 feet per day for MW-2 to 2.42 feet per day for MW-6S. Averaging the individual seepage velocities calculated on each side of the divide yields a typical seepage velocity east of the divide of 0.33 ft/day. The average seepage velocity west of the divide is more than seven times greater at 2.41 ft/day.

Groundwater

1. A total of eight ground water monitoring wells were installed in connection with the CSA Scope of Work (MW-1, MW-2, MW-3, MW-4S, MW-4D, MW-5, MW-6S, and MW-6D).

2. Monitoring wells located south of the landfill (MW-3 and MW-4S/D) are located upgradient of the Hamilton Landfill. While upgradient wells would normally be considered as representing background conditions, groundwater quality in this area may be influenced by the immediately upgradient Manchester Landfill, as well as by mounding from the Hamilton Landfill. Accordingly, these wells were not considered representative of true background water quality conditions.

3. Monitoring wells MW-2, MW-5, MW-6S/D, which flank the landfill to the east and west, were installed as downgradient monitoring locations.

4. Monitoring well MW-1, located approximately 250 feet north of the landfill (and north of the west-to-east groundwater ditch that borders the north end of the site) is most representative of background groundwater conditions, based on the results of the groundwater contour mapping, which suggest that groundwater moving from the direction of the landfill is not intersecting the area of monitoring well MW-1.

5. During the CSA, groundwater was monitored for dissolved metals, general chemistry parameters, VOCs, SVOCs, PCBs and pesticides. Metals detected in excess of MMCL or RCGW-1 standards were limited to arsenic at one groundwater location (MW-4D) and sodium at groundwater wells MW-4S, MW-4D and MW-5. Iron and manganese were also detected at the majority of the well locations at concentrations in excess of their respective SMCL standards.

6. Throughout the CSA monitoring program, various metals were detected at concentrations below MMCL and GW-1 standards. These metals included barium and calcium during each of the monitoring rounds, an isolated detection of copper at MW-3 during the Round 3 monitoring event, and zinc at MW-6 during each of the four rounds of monitoring and during the Round 1 monitoring event at MW-1.

7. During the Round 3 monitoring event, cyanide was detected at each of the monitoring wells except for well MW-1. The cyanide detections were well below their respective MMCL and RCGW-1 standards.

8. VOCs were predominantly non-detect during the four rounds of CSA monitoring. No VOCs were detected above their respective MMCL and/or RCGW-1 standards.

9. No SVOCs, PCBs, or pesticides were detected during the two rounds of extended parameters analysis (Rounds 1 and 3).

10. The groundwater data was compared to MCP-defined risk-based standards to evaluate the potential risk the groundwater may present to human health and the environment. Using methodologies provided in the MCP, GW-1 and GW-3 were identified as the appropriate groundwater categories for the Hamilton Sanitary Landfill, based on current site uses.

11. Using the GW-1and GW-3 risk-based standards provided in 310 CMR 40.0974 (Table 1) and comparing these standards to the groundwater analytical results revealed one monitoring well location where arsenic was detected in excess of its GW-1 standard. The exceedence occurred at MW-4D during the first two rounds of CSA monitoring.

Surface Water

1. Surface water monitoring was performed during the Round 1 and Round 3 CSA monitoring events. Surface water samples were collected from three locations: two from the groundwater ditch that borders the northern end of the site and flows in a west-to-east direction towards Maple Swamp (samples SW-1 and SW-2); and one sample was collected from the large dug pond located in the northeastern corner of the site (SW-3). Sample SW-1 was collected from the upstream end of the groundwater ditch and SW-2 was collected approximately 1,100 feet downstream of SW-1 near the landfill property line. Sample location SW-2 is located near the Hamilton/Wenham Rod & Gun Club rifle range.

2. Surface water samples were analyzed for dissolved metals, general chemistry parameters, VOCs, SVOCs, PCBs and pesticides.

3. Of the parameters analyzed, barium, calcium, iron, lead, manganese, sodium, zinc, total cyanide, chloride, sulfate, and nitrate nitrogen were detected above laboratory reporting limits. These detections were compared to the EPA's chronic and acute AWQCs and, for comparison purposes only, with MCP GW-1 and GW-3 standards.

4. Iron and total cyanide were detected above their respective chronic AWQC at SW-2. The total iron exceedence occurred during the first round of surface water monitoring and the cyanide exceedence occurred during the second round.

5. No VOCs, SVOCs, PCBs, or pesticides were detected during the two rounds of surface water monitoring.

Sediment

1. As with the surface water monitoring program, sediment samples were collected during the Round 1 and Round 3 CSA monitoring events. Three sediment samples were collected during the CSA (SED-1, SED-2, and SED-3), where each sediment monitoring location corresponded to the three surface water monitoring locations (SW-1, SW-2, and SW-3).

2. Sediment samples were collected from the top 6-inches of the sediment layer underlying the surface water body and analyzed for total metals, VOCs, SVOCs, PCBs, and pesticides.

3. The CSA sediment monitoring results were compared to the *Revised Sediment Screening Values* provided in the DEP's January 2006 Technical Update. These values have been established to identify potential risk of harm to sediment-dwelling organisms. The Technical Update was issued as a follow-up to earlier sediment standards provided in the DEP's May 2002 Technical Update entitled *Freshwater Sediment Screening Benchmarks for Use Under the MCP*. The January 2006 Technical Update advises that Probable Effect Concentrations (PECs) are the most appropriate risk-based screening values to use in connection with metals analysis, with the exception of mercury, which retains the lower Threshold Effect Concentration (TEC) standard.

4. Of the parameters analyzed, only arsenic and lead were detected above a regulatory standard or guidance concentration. Arsenic was detected at sampling location SED-2 in excess of its TEC during both rounds of sediment monitoring and lead was detected in excess of its TEC at SED-2 during the second round of sediment monitoring. Sample location SED-2 is located near the Hamilton/Wenham Rod & Gun Club rifle range.

5. Based upon the DEP's January 2006 *Revised Sediment Screening Values*, the elevated concentrations of arsenic and lead recorded at SED-2 should be compared to PECs as an initial screen for potential impact to sediment dwelling organisms. The only exceedence of a sediment screening PEC occurred at SED-2, where arsenic was detected at 40 mg/kg in comparison to the arsenic PEC of 33 mg/kg.

Landfill Gas Monitoring

1. Four rounds of soil gas monitoring were performed as part of the CSA field investigations. The gas monitoring network consists of twenty-four soil gas probes located along the landfill perimeter (SG-1 through SG-24). Three of the perimeter probes are located near the Miles River Marsh Rats skeet shooting range and two are located north of the groundwater ditch in the vicinity of the Hamilton/Wenham Rod & Gun Club shooting range. The probes located near the two gun ranges were installed to determine whether landfill gases may be migrating to these two on-site recreational use areas.

2. During each gas monitoring round the probes were field screened for total VOCs, oxygen (O_2), carbon dioxide (CO_2), hydrogen sulfide (H_2S) and methane (CH_4).

3. The CSA soil gas monitoring program revealed that there were no landfill gases (methane, hydrogen sulfide, or total VOCs) present in any of the probes during any of the monitoring rounds.

Landfill Gas Emissions

1. The gas emission rate of the Hamilton Sanitary Landfill was calculated using the Mass Emission Rate Equation provided in the EPA's *New Source Performance Standards for Solid Waste Landfills* (NSPS).

2. Use of the Mass Emission Rate Equation requires that an estimate of the total volume of solid waste disposed of at the landfill be calculated. The total in-place volume of waste was estimated using topographic information prepared by ABR in 1970 in connection with their evaluation for converting the Hamilton burn dump operations to a sanitary landfill operation. The 1970 topography was compared with current topographic conditions to estimate the total volume of fill within the landfill. The total fill volume (solid waste, daily cover, and cover soils) was adjusted to estimate the net quantity of gas-generating solid waste within the landfill, calculated at 132,000 Mg.

3. Based upon the NSPS Mass Emission Rate Equation and the current NSPS action level and default criteria, the current NMOC gas emission rate for the landfill is approximately 7 Mg/year, which will continue to decrease with time. This calculated value is significantly below the 50 Mg/year action level that, if exceeded, would necessitate the installation of an active gas collection system.

Conclusions

Landfill Delineation, Landfill Areas and Cover Soil Observations

1. Based upon S E A's review of landfill operations and closure documentation dating back to 1975, DEP-approved closure plans were prepared for the 7.1-acre Area 1 portion of the landfill. The DEQE issued its conditional approval of the proposed Area 1 closure plan and Area 2 interim operating plan in its letter to the Town dated December 21, 1977. The record indicates that the cover soils were installed on Area 1 in the summer of 1980.

2. Based upon the results of the CSA test pit activities, the Area 1 cover system was installed in substantial conformance with the DEQE-approved plans for this area. As such, S E A has concluded that it is reasonable to advocate that the Town not be required

to re-cap Area 1 to meet the DEP's current capping standards. This opinion is further supported by the results of the CSA monitoring program, which reveals that the landfill has had a minimal environmental impact.

3. Based upon S E A's file review, it is evident that DEP-approved closure drawings were not prepared for the 2.9 acre Area 2 portion of the landfill. The depth of cover in Area 2 documented during the CSA test pit activities revealed depths that were predominantly less than the minimum 24-inch thickness required at the time the landfill cover system was installed in 1984.

4. Given the absence of any formal closure design plans for Area 2 or DEQE approval of such plans, S E A concludes that it is appropriate to defer to DEP as to whether the cover system in this area is acceptable as-is or whether it would be subject to the DEP's current capping standards.

5. The results of S E A's file review and the findings from the CSA test pit investigations suggest that the 1.3 acre Area 1A was not included in the 1980 closure activities performed for Area 1. Therefore, S E A concludes that this area should be addressed pursuant to further DEP coordination.

6. The results of S E A's file review and findings from the CSA test pit investigations suggest that Area 2A and Area 2B, each approximately 0.7 acres in size, were not closed and covered in accordance with DEP-approved plans. Therefore, S E A concludes that these areas should be addressed pursuant to further DEP coordination.

Current Site Uses and Future Development Considerations

1. At the present time, continued use of the site by the Hamilton DPW for residential yard waste drop-off and material stockpiling is expected to continue. These activities are performed in Area 1A, therefore, any cover system corrective actions that may be performed in this area should be compatible with the current drop-off and stockpiling activities.

2. Continued use of the site by the two gun clubs is expected to continue until such time that the Town's commercial development objectives can be realized. Because the shooting range operations are distinct from and conducted at different times than when the landfill had operated, environmental impacts that may be attributed to the shooting

ranges should be managed in connection with the DEP's Lead Shot Initiative and should not be linked to the landfill assessment process.

Groundwater

1. The four rounds of water quality monitoring performed during the CSA suggest that the landfill has had a minimal impact on groundwater quality. Only arsenic and sodium were detected in excess of their respective MMCL standards, where the arsenic exceedence was isolated to MW-4D and sodium was detected sporadically in excess of its MMCL standard at MW-4S/D and MW-5. From a risk perspective, sodium does not have a risk-based standard, leaving arsenic as the only parameter detected above its risk-based GW-1 standard.

2. Arsenic occurs naturally in Massachusetts soils; average statewide soil concentrations for arsenic are noted by DEP to be approximately 17 µg/g. Concentrations of arsenic in soil in Worcester County and in portions of Essex County can be orders of magnitude higher. The source of arsenic in soil is understood to be erosion and degradation of arsenic bearing bedrock. As arsenic was not detected in monitoring wells located downgradient of the landfill, the arsenic detected seasonally in MW-4D may be associated with naturally occurring arsenic or, potentially, the upgradient Manchester Landfill.

3. An exposure point concentration was calculated for arsenic at MW-4D and was found to slightly exceed the GW-1 risk-based standard. At this stage, given the absence of arsenic in the remaining wells (with the exception of one detection at MW-4S, albeit well below the GW-1 standard), arsenic is not interpreted as representing a public or ecological health risk.

4. Sodium is a naturally occurring element found in water and soil. Since the detection of sodium in excess of its MMCL at monitoring wells MW-4S/D and MW-5 does not represent an exposure potential to humans, the presence of sodium is not interpreted as having an adverse environmental impact.

5. Iron and manganese was detected routinely at all CSA groundwater monitoring locations at concentrations exceeding their respective SMCL standards. The presence of iron and manganese at concentrations above SMCLs indicates that aesthetic impacts such as odor, taste, and color would likely be encountered if the groundwater were utilized for drinking

water purposes. Elevated iron and manganese are not associated with adverse public health impacts.

6. The analysis for VOCs revealed minimal impact to groundwater quality, with only isolated concentrations of various compounds detected well below MMCL and GW-1 risk-based standards.

7. The absence of SVOCs, PCBs and pesticides during the CSA monitoring program suggest that these compounds are not present at the site and were not introduced to the environment from past disposal activities.

8. The results of the groundwater monitoring program confirm that monitoring well MW-1 is most representative of background groundwater quality at the site.

9. Although the landfill may represent a source of impact to groundwater quality, the results of the CSA monitoring program reveal that the impact is not dramatic, nor does it represent a significant degradation to groundwater quality in the site area. Furthermore, the results of the qualitative risk assessment indicate that the limited impact to groundwater quality (arsenic at MW-4D) is not expected to pose a health-based risk to human or environmental receptors.

Surface Water

1. The surface water samples reveal insignificant impact from the landfill. The iron and cyanide detection at SW-2 were the only exceedences of EPA AWQC. Based on these detections, exposure point concentrations were calculated for iron and cyanide at SW-2.

2. The exposure point concentration for cyanide did not exceed the chronic AWQC standard. It should also be noted that cyanide detected in SW-2 was total cyanide and not physiologically available cyanide (PAC), on which the AWQC risk standard is based (total cyanide returns higher concentrations than PAC). Based on the detected concentration of total cyanide and, as the tested surface water body is not utilized for drinking water purposes and as such use is not reasonably foreseeable, no significant risk is believed associated with this one-time detection.

3. The exposure point concentration for iron at SW-2 did exceed its chronic AWQC, suggesting that iron may have a negative impact on surface water organisms within the

groundwater ditch near SW-2. However, given the prevalence of iron in the environment (both naturally occurring and at landfill sites), as well as its classification as a Nonpriority Pollutant AWQC, its presence at exposure point concentrations exceeding the AWQC is not considered a significant risk.

4. Based on the CSA monitoring results, S E A has concluded that surface water quality in the groundwater ditch and large dug pond do not represent a public or ecological health risk and therefore further risk evaluation of these on-site surface water bodies is not warranted

Sediment

1. The only parameter detected in excess of its ecological risk-based sediment screening value was arsenic and this was isolated to sampling location SED-2 (located near the Hamilton/Wenham Rod & Gun Club rifle range) where arsenic was detected in excess of its PEC. The presence of lead at SED-2, although not in excess of its PEC, was notable given that the highest lead concentrations in sediment were found at SED-2.

2. Based on the comparatively low concentrations of arsenic and lead at SED-1 and SED-3, the elevated concentration of these two metals at SED-2 could be attributed to lead shot impact associated with the Hamilton/Wenham Rod & Gun Club, where storm water run-off from the range could be the source of the lead and arsenic concentrations (arsenic is used as a hardener in lead shot).

3. The results of the CSA monitoring program suggest that sediment has not been impacted by the landfill, therefore, further risk evaluation for sediment is not recommended in connection with the landfill assessment program.

Landfill Gas Monitoring

1. There were no detections of landfill gas (methane, hydrogen sulfide, total VOCs) at any of the monitoring locations during any of the four rounds of CSA monitoring. Therefore, in the event the landfill is generating any landfill gas, the results of the CSA soil gas monitoring reveal that it is not migrating into adjacent soils and, consequently, there is no apparent migration off-site or on-site towards the two gun club recreational use areas. As such, landfill gas does not represent a risk to public health or safety under current site conditions and does not warrant further risk evaluation.

Landfill Gas Emissions

1. The results of the waste quantity and emission rate calculations for the Hamilton Sanitary Landfill reveal that the facility does not exceed the EPA's 2,500,000 Mg/year total waste disposal "design capacity" threshold, nor does the landfill exceed the NMOC emission rate threshold of 50 Mg/year. Therefore, in accordance with the EPA's NSPS regulations, an active gas collection system is not required to address landfill gas emissions at the landfill.

Recommendations

Based upon the results of the CSA monitoring activities, S E A has identified several recommendations that will serve as the basis for proposing post-CSA environmental monitoring activities at the site. Recommendations have also been prepared in connection with the operation of the two gun clubs, followed by corrective action recommendations for the landfill cover system. With respect to the landfill cover corrective action recommendations, S E A has identified several items where the DEP's input is requested prior to preparing a site-specific scope of work for the next phase of the assessment process.

Post-CSA Environmental Monitoring Program

1. Based upon the understanding of site hydrogeology developed as a result of the CSA investigations, as well as the minimal impact to groundwater quality demonstrated during the four rounds of CSA monitoring, S E A recommends that the groundwater well network be preserved as-is for post-CSA monitoring purposes (the installation of additional wells is not warranted at this time). In the event future circumstances (i.e. changes in water quality trends) warrant the installation of additional groundwater monitoring wells in the site area, the Town will coordinate such activities with the DEP and include a rationale for the proposed modifications at that time.

2. With the completion of the groundwater contour mapping for the site, further water level gauging from the Manchester Landfill monitoring wells ($MW\text{-}1S_{manch}$, $MW\text{-}2S_{manch}$, MW-5S and $MW\text{-}6S_{manch}$) is not recommended.

3. The post-CSA monitoring program should be developed to continue sampling for those parameters consistently detected during the CSA, while eliminating or reducing the frequency of monitoring for those parameters that were either not detected during the CSA or detected only sporadically and at low concentrations (detected at concentrations below applicable risk standards).

4. S E A recommends that semi-annual (two times per year) groundwater monitoring be performed during the post-CSA period. The groundwater monitoring program will include field screening for temperature, pH, specific conductivity and dissolved oxygen, and laboratory analysis for "indicator parameters" (as defined in 310 CMR 19.132(1)(h)(1)), and dissolved metals. In addition, due to the detection of total cyanide (albeit at low concentrations) during Round 3 of the CSA, continued cyanide analysis during the post-CSA period will be performed for physiologically available cyanide (PAC). Due to the limited detections of VOCs during the CSA, S E A recommends that continued surveillance of these compounds be reduced to an annual monitoring frequency. Further SVOC, PCB, and pesticide monitoring is not recommended as these compounds were not detected during the CSA.

5. Further surface water and sediment sampling from the large dug pond (SW-3/SED-3) is not recommended based upon the results of the CSA monitoring activities, which showed minimal if any impact to the pond (all concentrations recorded were below EPA surface water Ambient Water Quality Criteria and DEP's *Revised Sediment Screening Values*).

6. Further surface water and sediment sampling at the upstream location of the groundwater ditch (SW-1/SED-1) is not recommended based upon the results of the CSA monitoring activities, which showed minimal if any impact to surface water and sediment quality at this location.

7. Continued surface water sampling is recommended at SW-2, located adjacent to the Hamilton/Wenham Rod & Gun Club, due to the detection of cyanide at this location in excess of its chronic AWQC. Continued sediment monitoring at this location is also recommended (SED-2) due to the detection of arsenic in excess of its PEC, as well as the detection of lead at concentrations that are notably higher than lead recorded at SED-1 and SED-3. Given the proximity of the Rod & Gun Club, continued monitoring at SW-2/SED-2 is aimed at maintaining surveillance on potential environmental impacts within this portion of the groundwater ditch.

8. In tandem with the continued sediment and surface water monitoring recommended at SW-2/SED-2, S E A recommends that a new surface water and sediment monitoring location be included in the post-CSA monitoring network. The new location, referenced as SW-1A/SED-1A on the CSA Base Plan, would be located in the groundwater ditch in

the vicinity of the Rod & Gun Club office/clubhouse. This proposed location is approximately 300 feet upstream of SW-2/SED-2 and would provide additional information regarding the extent of arsenic and lead levels immediately upstream of SW-2/SED-2.

9. S E A recommends that semi-annual surface water and sediment monitoring be performed during the post-CSA period. The surface water monitoring, performed at SW-1A and SW-2, will consist of the same parameters and sampling frequencies as recommended for the groundwater monitoring program (Item 4 above). The sediment monitoring, performed at SED-1A and SED-2, will consist of total metals and VOCs, where metals analysis will be performed semi-annually and VOCs will be performed annually. Further SVOC, PCB, and pesticide monitoring is not recommended at the surface water and sediment locations as these compounds were not detected during the CSA.

10. The results of the CSA monitoring program indicate that landfill gas migration is not an issue at the site. On this basis, S E A recommends that soil gas monitoring from the existing probe network be reduced to a semi-annual basis (winter and summer) for a period of two years. At the conclusion of the two-year period, if the gas monitoring results continue to demonstrate that landfill gas migration is not occurring, S E A will submit a formal request to DEP recommending that no further gas monitoring be performed at the site.

11. The post-CSA environmental monitoring recommendations outlined in Items 1 through 10 above are summarized in Table 8.1

TABLE 8.1
PROPOSED POST-CSA ENVIRONMENTAL MONITORING PROGRAM

Media	Sampling Location	Analytical Parameters and Sampling Frequency	
Groundwater	MW-1, MW-2, MW-3, MW-4S/4D, MW-5, MW-6S/D Water levels will be collected from all monitoring wells during each monitoring round	Dissolved Metals[1] General Chemistry[2]	Semi-Annually
		VOCs[3]	Annually
Surface Water	SW-1A, SW-2	Dissolved Metals[1] General Chemistry[2]	Semi-Annually
		VOCs[3]	Annually
Sediment	SED-1A, SED-2	Total Metals[1]	Semi-Annually
		VOCs[3]	Annually
Soil Gas	SG-1 through SG-24	Lower Explosive limit (LEL) Percent Methane (% by volume in air) Percent Carbon Dioxide Percent Oxygen Hydrogen Sulfide in parts per million	Semi-Annually

Notes:

1. ***Metals Analysis:*** Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, and Zinc.
2. ***General Chemistry:*** Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids (TDS), Chloride, Nitrate, Sulfate, Physiologically Available Cyanide (PAC), Chemical Oxygen Demand (COD).
3. ***Volatile Organic Compounds (VOCs):*** EPA Method 8260.

12. The results from each round of post-CSA groundwater, surface water, and sediment monitoring will be submitted to the DEP within 60 days of the sampling event, pursuant to the requirements of 310 CMR 19.132(1)(f). The results will be summarized in tabular format and accompanied by a brief letter report highlighting the results.

13. The groundwater monitoring results presented in the post-CSA monitoring reports will be compared to MCP GW-1 and GW-3 risk-based standards, which have been established in the CSA as the appropriate groundwater categories for the Hamilton Sanitary Landfill (refer to Chapter Seven). Therefore, S E A proposes that the GW-1 and

GW-3 standards serve as the controlling standards, or "alternative standards" to MMCLs, as provided for in 310 CMR 19.132(1)(i). Specifically, pursuant to 310 CMR 19.132 (1)(i), S E A proposes that groundwater exceedences be based on GW-1 and GW-3 standards (whichever standard is lower) as opposed to drinking water MMCL standards. The MMCL standards will be included in the data summary tables for reference purposes.

14. The results from each round of post-CSA soil gas monitoring will be submitted to the DEP within 60 days of the sampling event, pursuant to the requirements of 310 CMR 19.132(4)(d). The results will be summarized in tabular format and accompanied by a brief letter report highlighting the results.

Gun Club Activities

1. As noted in the *Conclusions* section of this Chapter, any environmental impacts that may be attributed to the shooting ranges should be managed in connection with the DEP's Lead Shot Initiative and should not be linked to the landfill assessment process. To that end, S E A identified several recommendations in Chapter Two that address environmental aspects of the Hamilton/Wenham Rod & Gun Club and Miles River Marsh Rats Skeet and Trap Club operations within the context of the Lead Shot Initiative. The recommendations identified in Chapter Two are reiterated below:

   A. The Hamilton/Wenham Rod & Gun Club has prepared an Environmental Stewardship Plan (ESP) in coordination with the DEP through the Massachusetts Lead Shot Initiative. The Town will encourage the Rod & Gun Club to implement the best management practices included in the ESP, including lead shot collection and recycling.

   B. Based upon the lead and arsenic concentrations recorded at sediment sampling location SED-2, located within a length of the groundwater ditch that abuts the Rod & Gun Club rifle range, S E A recommends that the Town notify the gun club that its ESP should include best management practices that will protect the ditch from potential lead shot impact. Such best management practices should take into account the potential for storm water run-off from the range to be a potential source of lead and arsenic impact to the stream.

   C. The Town will encourage the Miles River Marsh Rats Skeet and Trap Club to prepare an ESP that will establish the protocols (including lead shot collection from

the shotfall zone) and schedule for its lead shot management activities. S E A recommends that the ESP be prepared in coordination with the DEP's Lead Shot Initiative.

D. S E A recommends that the shallow depth of landfilled waste underlying the skeet shooting range (Area 2A) be excavated and consolidated along the western slope of Area 2 (near Area 2B). Further recommendations regarding the solid waste located in Area 2A are provided in the following section pertaining to S E A's landfill cover recommendations.

Landfill Cover System

1. S E A's recommendations regarding the adequacy of the Area 1 landfill cover system and proposed corrective action recommendations for Areas 1A, 2, 2A, and 2B are summarized in Table 8.2.

Table 8.2
Landfill Cover System Corrective Action Recommendations

Location	Acreage	Recommendation
Area 1	7.1	Based upon S E A's file review and the results of the CSA test pitting activities, Area 1 has been closed in substantial conformance with DEQE-approved plans. As such, S E A recommends that the DEP accept the existing cover system for Area 1 as-is.
Area 1A	1.3	S E A's file review and the findings from the CSA test pit investigations suggests that Area 1A was not included in the Area 1 closure completed in 1980. Therefore, S E A recommends that Area 1A be provided with a cover system that meets the criteria that were in effect when Area 1 was capped (i.e. Area 1A would be "grandfathered" to the final cover standards established in the DEQE's 1978 regulations).
Area 2	2.9	S E A's file review revealed that DEQE-approved closure drawings were not prepared for Area 2. Given the absence of any formal closure design plans for Area 2, it is appropriate to defer to DEP as to whether the cover system in this area is acceptable as-is or whether it would be subject to the DEP's current capping standards.
Area 2A (skeet range)	0.7	S E A recommends that the shallow depth of fill located in Area 2A be excavated and relocated to the western slope of Area 2 where it can be consolidated with the shallow fill of Area 2B. The consolidated waste from these two areas would be capped with a cover system consistent with the system required by DEP for Area 2 (a cover system grandfathered to 1978 standards or a cover system that meets current DEP standards).
Area 2B	0.7	

DEP Input Regarding Proposed Corrective Actions

The cover system recommendations presented in Table 8.2 are made in recognition that the DEP must approve of these recommendations before they can be implemented. Therefore, the Town of Hamilton requests that the DEP advise the Town as to whether the Department concurs with the recommendations presented in Table 8.2. Upon concurrence between the Town and DEP regarding the cover system corrective actions, the Town will prepare a Corrective Action Alternatives Analysis (CAAA) Scope of Work or Corrective Action Design (CAD) – whichever is determined to be most appropriate, as coordinated with DEP.

As the DEP reviews the corrective action recommendations presented in Table 8.2, the Town requests that the Department consider the following:

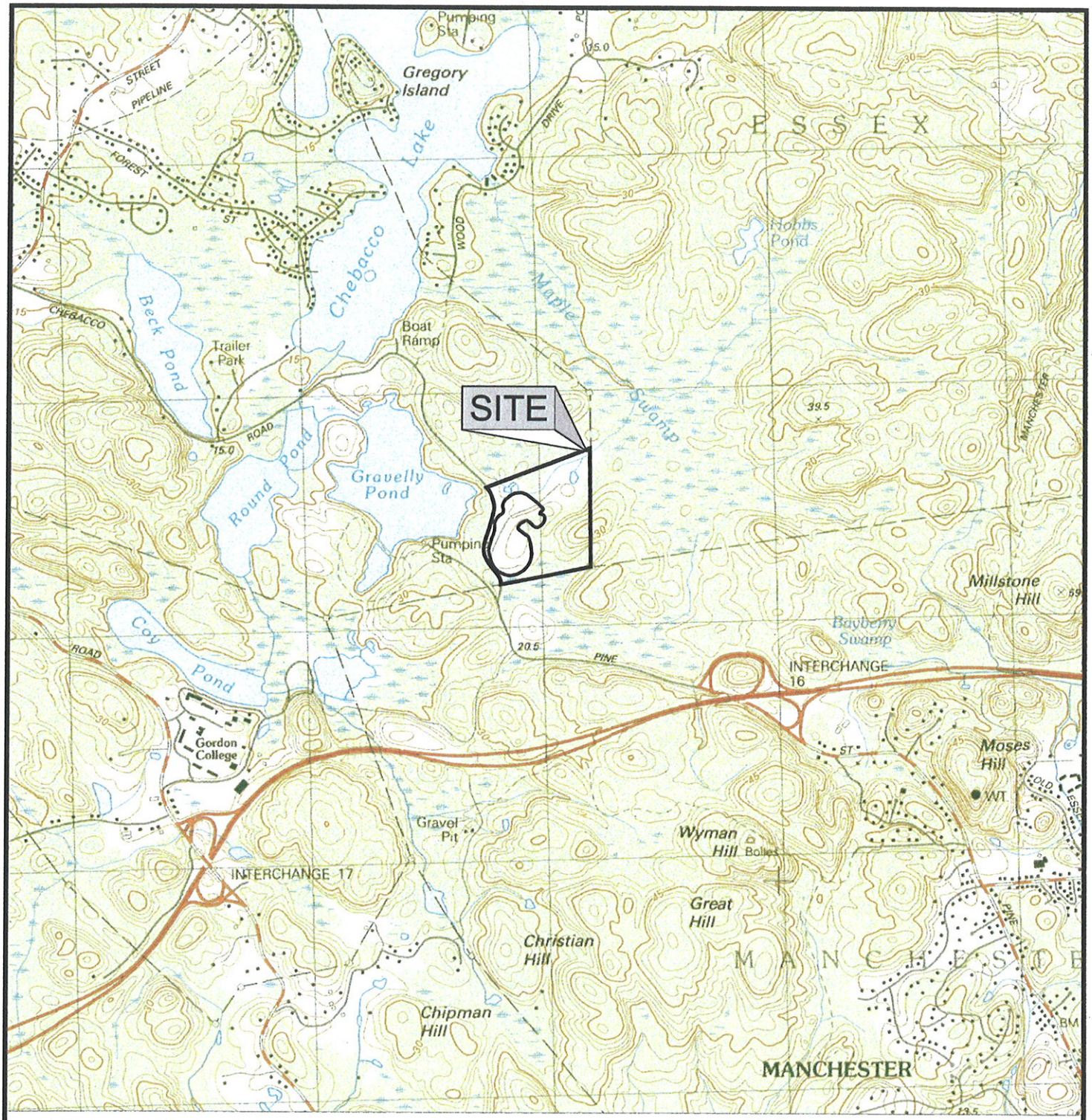
1. In the event solid waste is excavated from the skeet shooting range (Area 2A), one approach would be to strip the cover soils in this area (approximately 12-inches thick), stockpile the cover and relocate the underlying solid waste. Once the solid waste is relocated, the stockpiled cover soils would be returned to the shooting range area, assuming DEP would allow reuse of the soil without prior reclamation of lead shot and target fragments. The Town requests DEP's interpretation as to whether the cover soils located in Area 2A, which could include clay target fragments and potential lead shot, could be re-used as backfill or whether the cover soil should be relocated with the solid waste and not used as backfill.

2. S E A recommends that a portion of the cover system for Area 1A consist of a dense-graded gravel or pavement wearing surface. The wearing surface would be installed where yard waste and DPW stockpiling activities are performed.

3. Given the Town's interest in pursuing economic development opportunities at the site, which could include all or part of the landfill area itself, Hamilton welcomes the Department's input as to how these development opportunities might best be integrated into the landfill closure corrective action process.

S E A assumes that the Department will provide its comments to the above corrective action recommendations as part of its technical review of the CSA Report. Upon receipt of the DEP's technical review comments, the Town will prepare a proposed scope of work and project schedule for the next phase of the assessment process and submit this information to the Department for approval.

FIGURES



USGS MARBLEHEAD NORTH QUADRANGLE, ESSEX COUNTY MASSACHUSETTS MAP CIRCA 1982

SCALE: 1:24,000

FIGURE 1-1

LANDFILL SITE LOCUS

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

TOPOGRAPHIC DATUM ON THE USGS QUADRANGLE IS METRIC. MULTIPLY BY 3.28 TO CONVERT TO FEET

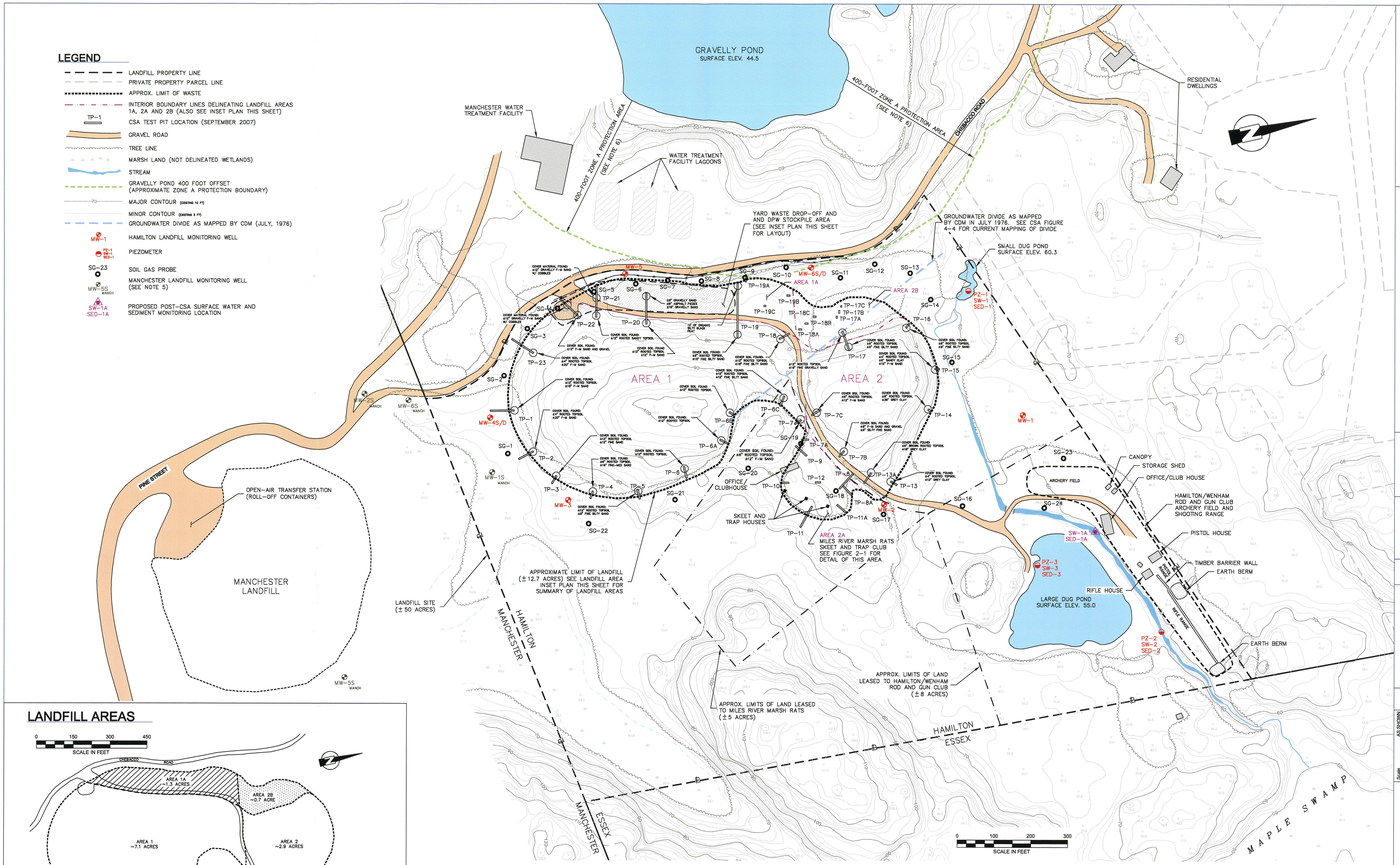
S E A

S E A CONSULTANTS INC.
Scientists/Engineers/Architects

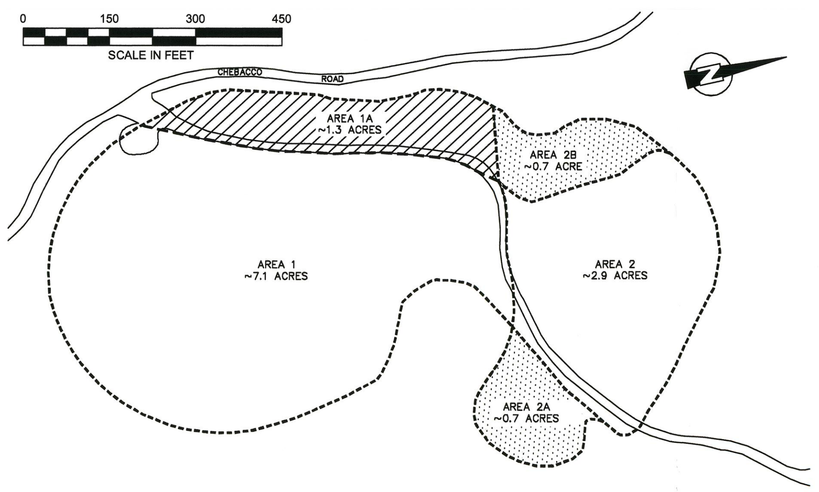
G:_CLIENTS\HAMILTON MA\2006054 – HAMILTON LANDFILL\GENERAL\CSA SITE LOCUS.DWG

LEGEND

- LANDFILL PROPERTY LINE
- PRIVATE PROPERTY PARCEL LINE
- APPROX. LIMIT OF WASTE
- INTERIOR BOUNDARY LINES DELINEATING LANDFILL AREAS 1A, 2A AND 2B (ALSO SEE INSET PLAN THIS SHEET)
- TP-1 CSA TEST PIT LOCATION (SEPTEMBER 2007)
- GRAVEL ROAD
- TREE LINE
- MARSH LAND (NOT DELINEATED WETLANDS)
- STREAM
- GRAVELLY POND 400 FOOT OFFSET (APPROXIMATE ZONE A PROTECTION BOUNDARY)
- 70 MAJOR CONTOUR (CONTOUR INTERVAL 10 FT)
- MINOR CONTOUR (CONTOUR INTERVAL 2 FT)
- GROUNDWATER DIVIDE AS MAPPED BY CDM (JULY, 1976)
- MW-1 HAMILTON LANDFILL MONITORING WELL
- PZ-1 SW-1 SED-1 PIEZOMETER
- SG-23 SOIL GAS PROBE
- MW-5S MANCH MANCHESTER LANDFILL MONITORING WELL (SEE NOTE 5)
- SW-1A SED-1A PROPOSED POST-CSA SURFACE WATER AND SEDIMENT MONITORING LOCATION



LANDFILL AREAS



DESCRIPTION OF LANDFILL AREAS

AREA 1:
BASED ON FILE REVIEW AND CSA TEST PITS, THIS AREA WAS CLOSED IN 1980 IN ACCORDANCE WITH DEQE-APPROVED PLANS.

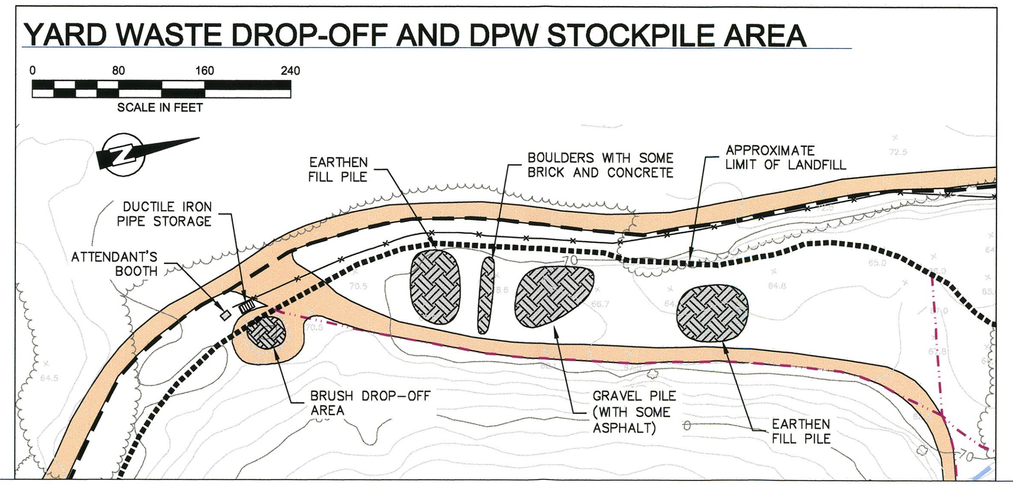
AREA 1A:
FILE REVIEW SUGGESTS THIS AREA WAS NOT INCLUDED IN THE AREA 1 CLOSURE.

AREA 2:
THERE IS NO RECORD OF CLOSURE PLANS HAVING BEEN PREPARED FOR THIS AREA, HOWEVER, FINAL COVER SOILS WERE INSTALLED ON AREA 2 IN 1984.

AREA 2A AND AREA 2B:
BASED ON FILE REVIEW AND CSA TEST PITS, THESE AREAS WERE NOT INCLUDED IN THE WORK PERFORMED IN 1984 TO COVER AREA 2.

REFER TO CHAPTER THREE OF CSA FOR ADDITIONAL INFORMATION AND RECOMMENDATIONS REGARDING THE ABOVE LANDFILL AREAS.

YARD WASTE DROP-OFF AND DPW STOCKPILE AREA



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.

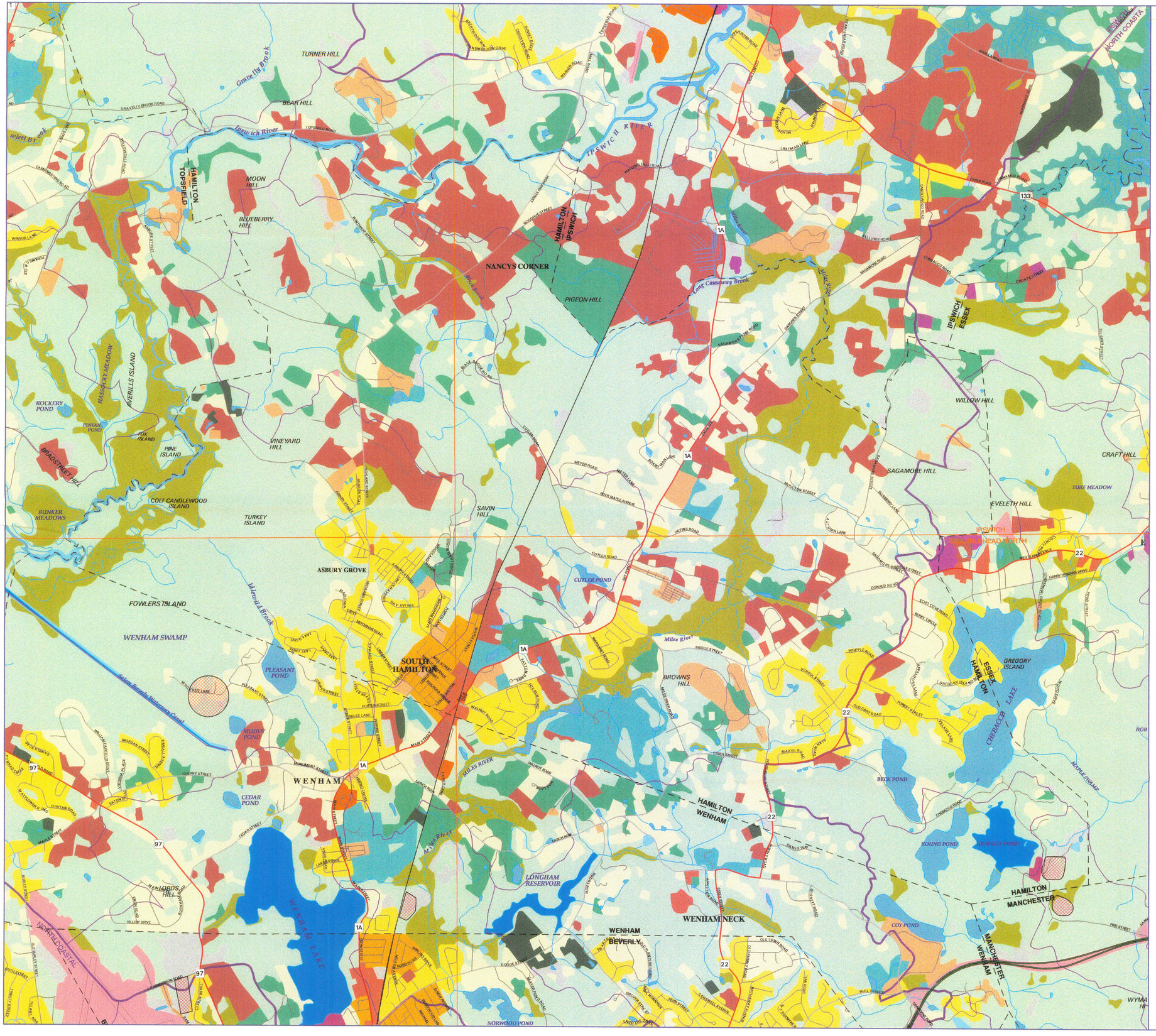
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

No.	Description	Date
	REVISIONS	

Scale	AS SHOWN
Date	OCTOBER 2008
Job No.	2006054.08A
Designed by	SEW
Drawn by	JMO
Checked by	SEW
Approved by	SEW

Client: TOWN OF HAMILTON, MASSACHUSETTS
Project: HAMILTON SANITARY LANDFILL COMPREHENSIVE SITE ASSESSMENT (CSA)
Drawing: CSA BASE PLAN
Sheet: FIGURE 1-2

PLOT DATE=11/5/2008 10:49:59 AM USER=JESSICA ORMSBY FILENAME=G:_clients\Hamilton MA\2006054.08A - CSA\civil\BasePlan.dwg



Solid Waste Assessment

Land Use Map

HAMILTON LANDFILL ASSESSMENT

LEGEND

- Cropland
- Pasture
- Forest
- Nonforested Wetland
- Mining
- Open Land
- Participation Recreation
- Spectator Recreation
- Water Based Recreation
- Multi-family Residential
- Residential < 1/4 Acres
- Residential 1/4-1/2 Acres
- Residential > 1/2 Acres
- Salt Marsh
- Commercial
- Industrial
- Urban Open Space
- Transportation
- Waste Disposal
- Open Water
- Woody Perennial
- Fresh or Salt Water Feature
- Solid Waste Landfill
- 1/2 and 1 Mile Landfill Buffer
- Limited Access Highway
- Multi-Lane Highway
- Other Numbered Highway
- Major Road - Connector
- Minor Street or Road
- Trail
- Municipal Boundary
- County Boundary
- Train
- Powerlines
- Pipeline
- Aqueduct
- Major Drainage Basin
- Sub Drainage Basin
- USGS Quadrangle Boundary

DEP BWP – Bureau of Waste Prevention

Map Extent

N W E S

Map Scale 1:17000

0 .5 1 MILES

0 .5 1 KILOMETERS

DATA SOURCES

LAND USE: UMass Amherst Resource Mapping Project (RMP)/MassGIS. 1:25,000. 37 land use categories, photointerpreted from 1985 and in some areas 1990 or 1991/1992 summer CIR aerial photography. 1999.

HYDROGRAPHY: USGS/MassGIS. 1:25,000/1:100,000 (enhanced). 1:25,000 hydro was generated using USGS 1:25,000 and 1:100,000 DLG data and enhanced with linework digitized from 1:25,000 USGS topographic quadrangles 1987.1:100,000 hydro generated and modified from USGS 1:100,000 DLG data. 2003.

DRAINAGE BASINS: USGS WRD/MassGIS/MA DEP DWP. 1:24,000. MassGIS digitized mylar manuscripts with sub-basins, interpreted by USGS WRD and compiled onto paper 1:24,000 USGS topographic quad maps. Major basins were generated by aggregating sub-basins. Individual basins for surface community public water supplies were added by DEP DWP. 2003.

USGS QUADRANGLE INDEX: USGS/MassGIS. 1:25,000. Automated from USGS 7.5 minute quad corner coordinates, converted to MA State Plane. 1989.

POLITICAL BOUNDARIES: USGS/MassGIS. 1:25,000, 1:100,000. Municipal boundaries, except coast, digitized from mylar USGS 7.5 minute quads. Coast automated from USGS 1:100,000 hydrography DLG files. October 2002.

TRAINS AND TRANSLINES: USGS/MassGIS. 1:100,000. Generalized and modified USGS DLG linework. Last updated 1996.

ROADS EOTA/MassGIS/MA DEP. linework from the 1:5,000 Road and Rail Centerlines that were interpreted as part of the Black and White Digital Orthophoto project. The EOT regularly updates this layer. MassGIS receives and makes available updated data at least once a year. Updated 2005.

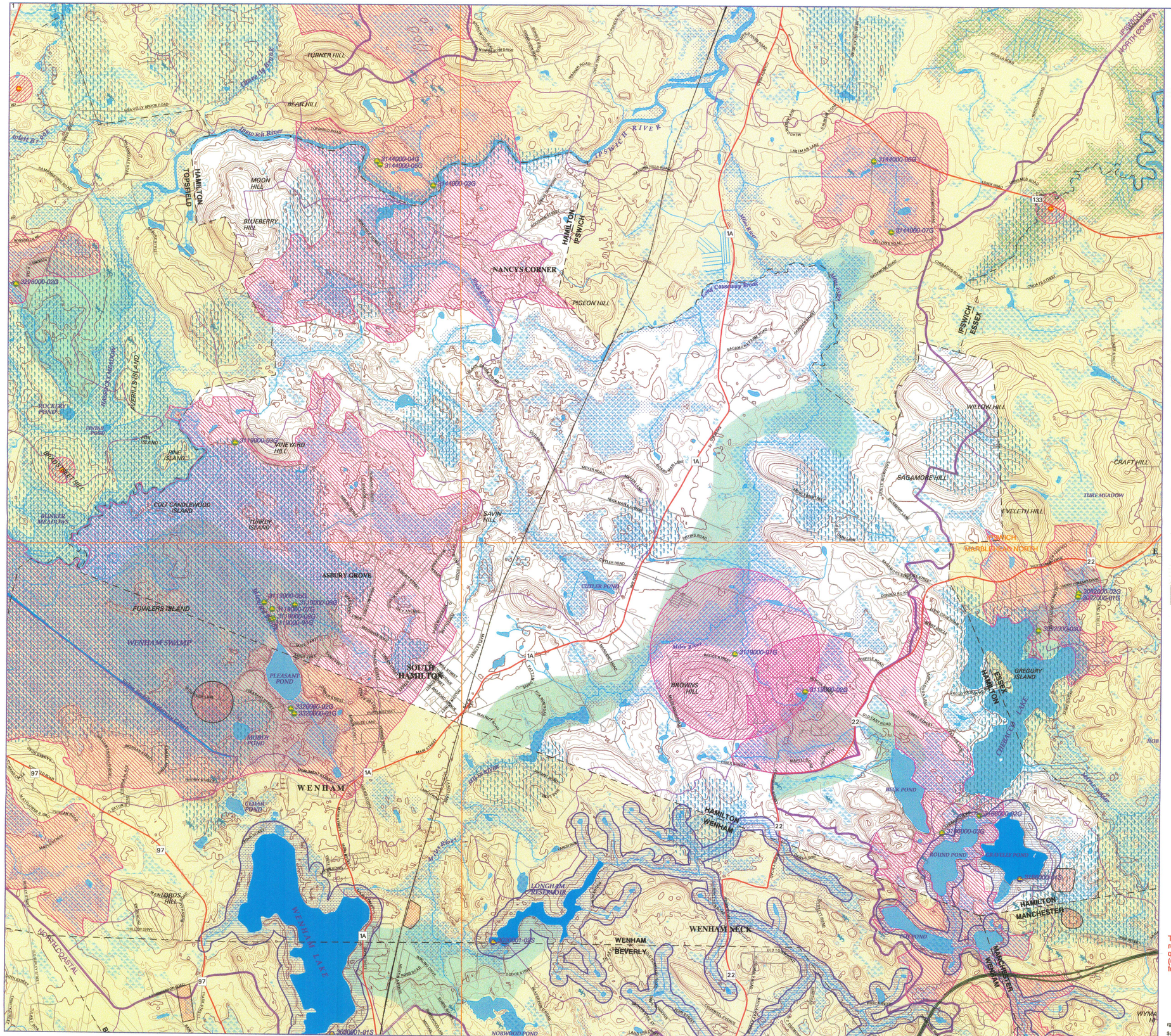
SOLID WASTE (SW) FACILITIES: MA DEP BWP. 1:25,000. Includes only SW facilities regulated since 1971. Facility boundaries compiled and digitized by DEP BWP or extracted from MassGIS landuse data and open space data. July, 2002.

This map is for illustrative and planning purposes only. The data shown represents the best available data at the date of printing. If you have questions about any of the data shown on this map contact EOEA MassGIS (617) 626-1000. Please refer to the MassGIS website www.state.ma.us/mgis/ for more detailed data source documentation.

FIGURE 1–3

rgaulin - March 30, 2007

$depthemes/dep-themes SWLU polygon $statecovs/towns 'town-id = 119' 33



Solid Waste Assessment

Priority Resources Map

HAMILTON LANDFILL ASSESSMENT

LEGEND

- Non Potential Drinking Water Source Area: Medium Yield
- Non Potential Drinking Water Source Area: High Yield
- Potentially Productive Medium Yield Aquifer
- Potentially Productive High Yield Aquifer
- EPA Designated Sole Source Aquifer
- FEMA 100-Year Floodplain
- DEP Approved Wellhead Protection Area (Zone II)
- DEP Interim Wellhead Protection Area (IWPA)
- Public Surface Water Supply Protection Area (Zone A)
- Lake Pond Stream or other Fresh Water Feature
- Bay Estuary or other Salt Water Feature
- Fresh Water Wetland
- Salt Water Wetland
- NHESP 2001-2003 Estimated habitats of Rare Wildlife: for Use with the MA Wetlands Protection Act regulations (310 CMR10)
- Protected and Recreational Open Space
- Areas of Critical Environmental Concern
- Solid Waste Landfill
- Public Surface Water Supply
- Community Public Water Supply - Surface Water
- Community Public Water Supply - Groundwater
- Non Community Public Water Supply
- Community PWS-Emergency
- NHESP 2001-2003 MA Certified Vernal Pool
- 1/2 and 1 Mile Landfill Buffer
- Limited Access Highway
- Multi-Lane Highway; NOT Limited Access
- Other Numbered Highway
- Major Road - Connector
- Minor Street or Road
- Trail
- Municipal Boundary
- County Boundary
- Train
- Powerline
- Pipeline
- Aqueduct
- Major Drainage Basin
- Sub Drainage Basin
- USGS Quadrangle Boundary
- Contour Lines
- 3m Interval
- 15m Interval

DEP BWP – Bureau of Waste Prevention

Massachusetts Department of Environmental Protection

Executive Office of Environmental Affairs

MASSGIS Office of Geographic and Environmental Information

Massachusetts Executive Office of Environmental Affairs - 2007

Map Extent

N W E S

DATA SOURCES

AQUIFERS: USGS-WRD/MassGIS, 1:48,000, Automated by MassGIS from the USGS Water Resources Division's (WRD) hydrologic atlas. June 2003.

POTENTIALLY PRODUCTIVE AQUIFERS: Aquifers delineated by the U.S.G.S. as medium or high yield, including the aquifers east of the Cape Cod Canal and on Martha's Vineyard, Nantucket and the Elizabeth Islands.

NON-POTENTIAL DRINKING WATER SOURCE AREAS: Any Potentially Productive Aquifer where the overlying land use is not high density residential, the land uses are industrial, commercial, transportation, urban open space, and dense residential, or any aquifer categorized as a non potential drinking water source area pursuant to 310CMR 40.0932(5)(c).

SOLE SOURCE AQUIFERS (SSA): US EPA/MA DEP GIS, various scales. SSAs are defined by the EPA as aquifers that are the 'sole or principal source' of drinking water for a given aquifer service area. Compiled by EPA and authorized by DEP GIS Program, 1998.

FEMA 100-YEAR FLOODPLAIN: US FEMA/MassGIS, 1:24,000. Vectorized from selected FEMA Flood Insurance Rate Maps (FIRMs). These data are generalized and should not be used to determine absolute delineations of flood boundaries. Data for Franklin County is unavailable. July, 1997.

TOPOGRAPHIC CONTOURS: 3 Meter contour lines, generated from digital cribs DTM's. June, 2003.

MA DEP APPROVED ZONE II: MA DEP DWP, 1:25,000. As stated in 310 CMR 22.02; 'that area of an aquifer which contributes water to a well under the most severe pumping and recharge conditions that can be reasonably anticipated.' Zone II boundaries are automated from source maps based on USGS 1:25,000 topographic manuscripts. Source maps are provided by consultants in either paper or mylar format and approved by DEP DWP prior to automation. Zone I data is updated on a quarterly basis.

INTERIM WELLHEAD PROTECTION AREAS (IWPA): MA DEP DWP, 1:25,000. Variable width IWPA's, represent a public water supply (PWS) source's wellhead protection area (WPA) where a Zone II has not yet been delineated. Automated from PWS distance and pumping rate information provided by DEP DWP. IWPA width is calculated as: IWPA radius = (30 x pumping rate in gallons per minute) + 400. The minimum radius of 100 feet (default) for community systems. Non-Transient Non Community (NTNC) supplies have a default IWPA radius of 750 feet. Transient Non Community (TNC) supplies have a default IWPA radius of 400 feet. DEP DWP is currently in the process of estimating pumping rates for all sources with default IWPA radii. As pumping rates are assessed, default radii are being replaced by calculated radii. Updated quarterly on a continuous basis

SURFACE WATER SUPPLY PROTECTION AREA (ZONE A): MADEP, 1:25,000. Zone A, represents a) the land area between the watershed divide and the upper boundary of the bank; b) the land area within a 400' lateral distance from the upper boundary of the bank; c) the land area within a 400' lateral distance of a 200' lateral distance from the upper boundary of the bank of a tributary or associated surface water body. Zone A is generated by buffering MassGIS 1:25,000 hydrography data according to the above criteria. This data is updated continuously.

HYDROGRAPHY: USGS/MassGIS, 1:25,000?/1:100,000 (wetlands), 1:25,000 hydro area generated using USGS 1:25,000 and 1:100,000 DLG data and enhanced with linework digitized from 1:25,000 USGS topographic quadrangles. Hydro 1:100,000 hydro generated and modified from USGS 1:100,000 DLG data. 2003.

WETLANDS: Ultras Resource Mapping Project (DMP)/USGS/CDW/MassGIS, 1:12,000/ 1:25,000. Wetland information shown on this map consists of several wetlands datasets available through MassGIS, including DEP Orthophoto 5K Wetlands, USGS 250K Hydrology wetland features and Non-Forested wetland feature classification extracted from the Ultras R&P Land Use data.

PUBLIC WATER SUPPLIES (PWS): MA DEP DWP. Located by US EPA and DEP DWP using several methodologies, including DGPS, USGS topographic map interpretation and photo interpretation. This data is updated quarterly on a Continuous basis.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC): MA DEM, MA CZM 1:25,000. Areas of Critical Environmental Concern (ACEC) are areas of valuable environmental features consisting. ACEC's are designated to preserve, restore and enhance areas of ecological significance and certain development projects in ACECs are subject to the highest standards of state environmental review. July, 2000.

PROTECTED AND RECREATIONAL OPEN SPACE (OS): MA EOEA/MassGIS, 1:25,000. Contains boundaries of Federal, State, county, municipal, and private conservation land. Boundary information is compiled by state conservation land EOEA land holding agencies, coordinated and automated by MassGIS. This database is currently under development and consultation.

NHESP ESTIMATED HABITATS OF RARE WILDLIFE: 1:24,000?/1:25,000. Delineated habitat areas were compiled onto 7.5 minute USGS quadrangles and digitized. NHESP Estimated Habitat of Rare wildlife. For use with MA Wetlands Protection Act regulations (310 CMR 10). 2003.

CERTIFIED VERNAL POOLS (CVP): CFW/LE/NHESP, 1:24,000 / 1:25,000 Generated from coordinate data compiled from USGS 7.5 minute topographic quadrangles. Estimated accuracy is +-300ft (91.4m) from cvp center. 2003.

DRAINAGE BASINS: USGS WRD/MassGIS/MA DCP DWP, 1:24,000. MassGIS digitized the major basins from the USGS Water Resources Division's (WRD) and compiled onto paper 1:24,000 USGS topographic quad maps. Major basins were generated by aggregating sub-basins. Individual basins for surface community public water supplies were added by DEP DWP. 2003.

USGS QUADRANGLE INDEX: USGS/MassGIS, 1:25,000. Automated from USGS 7.5 minute quad corner coordinates, converted to MA State Plane. 1998.

POLITICAL BOUNDARIES: USGS/MassGIS, 1:25,000, 1:100,000. Municipal boundaries, except coast, digitized from mylar USGS 7.5 minute quads. Coast automated from USGS 1:100,000 hydrography DLG files. October 2002.

TRANS AND TRANSLINES: USGS/MassGIS, 1:100,000. Generalized and modified USGS DLG linework. Last updated 1998.

ROADS EOTMassGIS/MA DCP. linework from the 1:3,000 Road and Rail Centerlines that were interpreted as part of the Black and White Digital Orthophoto project. The EOT regularly updates this layer. MassGIS received and makes extensive updates data at least once a year. Updated 2000

SOLID WASTE (SW) FACILITIES: MA DEP SWP, 1:25,000. Includes only SW facilities registered since 1977. Facility boundaries compiled and digitized by DEP SWP or extracted from MassGIS/ landuse data and open space data. July, 2002.

Map Scale 1:17000

0 1/2 1 MILES

0 1/2 1 KILOMETERS

This map is for illustrative and planning purposes only. The data shown represents the best available data at the date of printing. If you have questions about any of the data shown on this map contact EOEA MassGIS (617) 626-1000. Please refer to the MassGIS website www.state.ma.us/mgis/ for more detailed data source documentation.

FIGURE 1-4

rgaulin - March 30, 2007

$depthemes/dep-themes SWPR polygon $statecovs/towns 'town-id = 119' 33

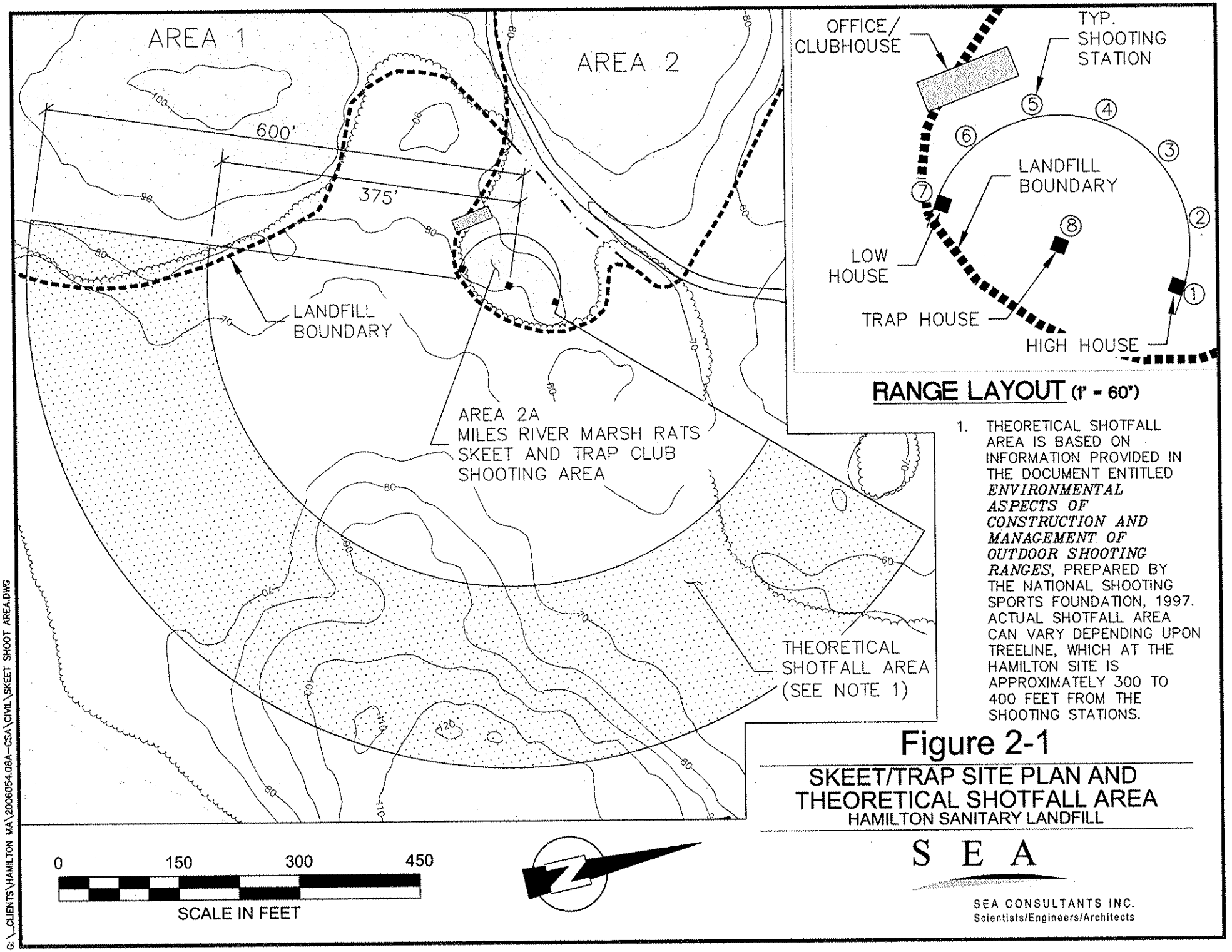
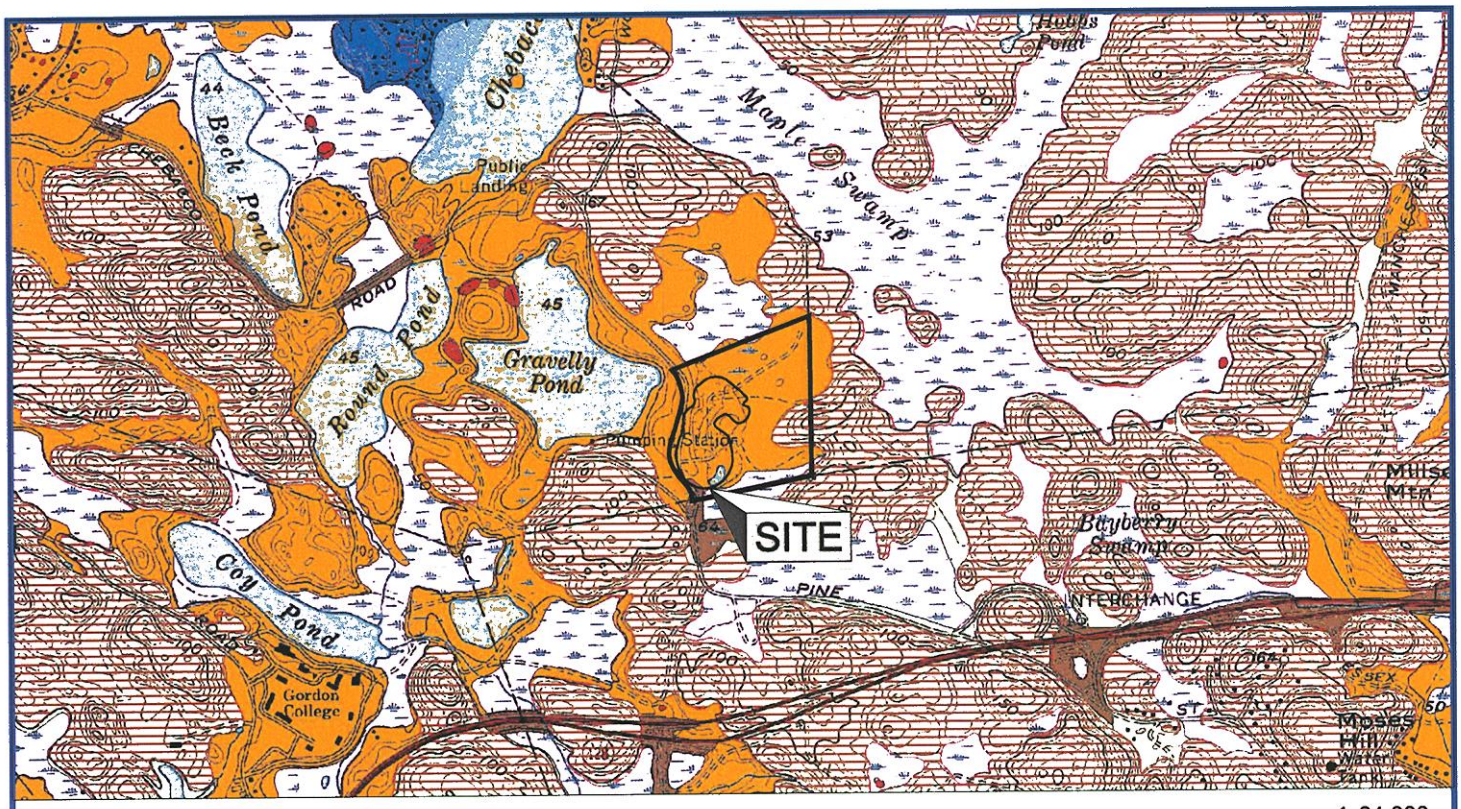


Figure 2-1

SKEET/TRAP SITE PLAN AND THEORETICAL SHOTFALL AREA

HAMILTON SANITARY LANDFILL



Description of Map Units

Postglacial Deposits

Artificial fill—Earth materials and manmade materials that have been artificially emplaced, primarily in highway and railroad embankments, and in dams; may also include landfills, urban development areas, and filled coastal wetlands

Glacial Stratified Deposits

Sorted and stratified sediments composed of gravel, sand, silt, and clay (as defined in particle size diagram, fig. 3) deposited in layers by glacial meltwater. These sediments occur as four basic textural units—gravel deposits, sand and gravel deposits, sand deposits, and fine deposits. On this interim map, gravel, sand and gravel, and sand deposits are not differentiated and are shown as *Coarse Deposits* where they occur at land surface. *Fine Deposits* also are shown where they occur at land surface. **Textural changes occur both areally and vertically (fig. 2), however subsurface textural variations are not shown on this interim map.**

Coarse deposits include: *Gravel deposits* composed mainly of gravel-sized clasts; cobbles and boulders predominate; minor amounts of sand within gravel beds, and sand comprises few separate layers. Gravel layers generally are poorly sorted and bedding commonly is distorted and faulted due to postdepositional collapse related to melting of ice. *Sand and gravel deposits* composed of mixtures of gravel and sand within individual layers and as alternating layers. Sand and gravel layers generally range from 25 to 50 percent gravel particles and from 50 to 75 percent sand particles. Layers are well to poorly sorted; bedding may be distorted and faulted due to postdepositional collapse. *Sand deposits* composed mainly of very coarse to fine sand, commonly in well-sorted layers. Coarser layers may contain up to 25 percent gravel particles, generally granules and pebbles; finer layers may contain some very fine sand, silt, and clay.

Glaciolacustrine Fine deposits include very fine sand, silt, and clay that occurs as well-sorted, thin layers of alternating silt and clay, or thicker layers of very fine sand and silt deposited in glacial lakes. Very fine sand commonly occurs at the surface and grades downward into rhythmically bedded silt and clay varves. Locally, this map unit may include areas underlain by fine sand.

Glacial Till Deposits

Thin till—Nonsorted, nonstratified matrix of sand, some silt, and little clay containing scattered gravel clasts and few large boulders; in areas where till is generally less than 10-15 ft thick and including areas of bedrock outcrop where till is absent. Predominantly upper till of the last glaciation; loose to moderately compact, generally sandy, commonly stony. Two facies are present in some places; a looser, coarser-grained ablation facies, melted out from supraglacial position; and an underlying more compact, finer-grained lodgement facies deposited subglacially. In general, both ablation and lodgement facies of upper till derived from fine-grained bedrock are finer grained, more compact, less stony and have fewer surface boulders than upper till derived from coarser grained crystalline rocks. Fine-grained bedrock sources include the red Mesozoic sedimentary rocks of the Connecticut River lowland, marble in the western river valleys, and fine-grained schists in upland areas.

Bedrock Areas

Bedrock outcrops and areas of abundant outcrop or shallow bedrock— Solid color shows extent of individual bedrock outcrops; line pattern indicates areas of shallow bedrock or areas where small outcrops are too numerous to map individually; in areas of shallow bedrock, surficial materials are less than 5-10 ft thick.

SOURCE:
MARBLEHEAD NORTH QUADRANGLE, EXCERPTED FROM:
SURFICIAL GEOLOGIC MAP OF THE SALEM DEPOT–NEWBURYPORT EAST–WILMINGTON–ROCKPORT 16–QUADRANGLE AREA IN NORTHEAST MASSACHUSETTS BY BYRON D. STONE, JANET RADWAY STONE, AND MARY L. DIGIACOMO–COHEN OPEN FILE REPORT 2006–1260B
USGS AND OFFICE OF THE STATE GEOLOGIST UNIVERSITY OF MASSACHUSETTS

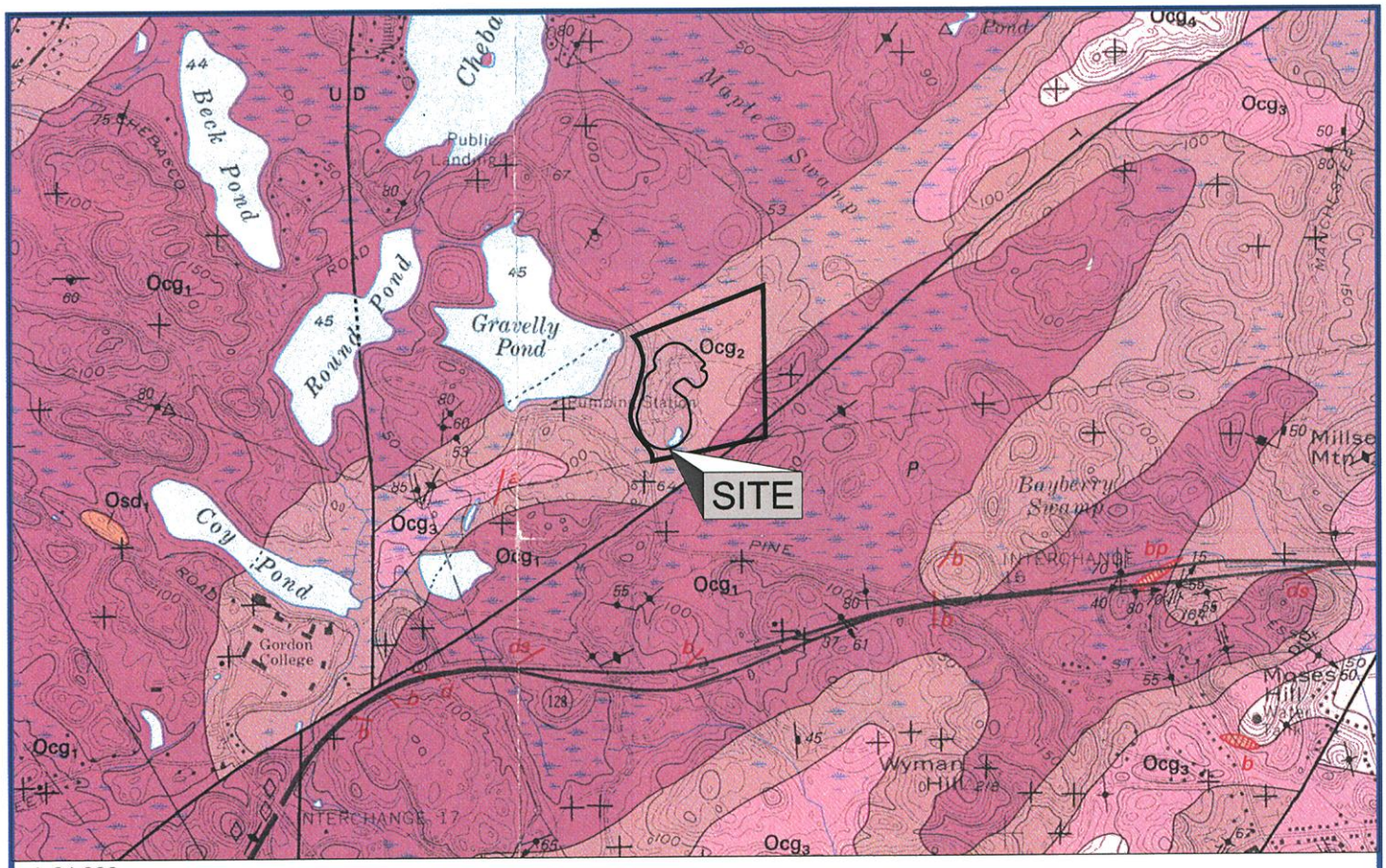
FIGURE 4-1

SURFICIAL GEOLOGY MAP
HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A

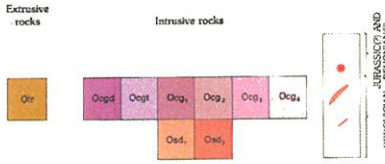
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

G:_CLIENTS\HAMILTON MA\2006054.08A CSA\GENERAL\BEDROCK.DWG



1: 24,000

CORRELATION OF MAP UNITS



Syenite facies, including Beverly Syenite of Clapp (1910)

- Ocgd — Diabasic alkali-feldspar syenite—Modal quartz content less than 5 percent
- Ocgt — Trachytic alkali-feldspar syenite—Modal quartz content less than 5 percent
- Ocg_3 — Granitic and coarse-grained alkali-feldspar syenite—Modal quartz content less than 5 percent
- Ocg_2 — Alkali-feldspar quartz syenite—Modal quartz content 5–15 percent

Granite facies

- Ocg_3 — Alkali-feldspar granite—Modal quartz content 15–25 percent
- Ocg_4 — Alkali-feldspar granite—Modal quartz content greater than 25 percent

Salem Gabbro-diorite (Ordovician)—Medium- to medium-coarse grained, texturally and compositionally variable diorite to gabbro. Commonly brecciated and typically cut by salmon-pink felsite stringers

- Osd_1 — Gabbro-diorite—Less than 5 percent pink felsite veining
- Osd_2 — Gabbro-diorite—Identical with Osd_1, but contains more than 5 percent pink felsite veining

DESCRIPTION OF MAP UNITS

EXTRUSIVE ROCKS

Olr — **Lynn Rhyolite (Ordovician)**—Dark-purplish-red to black, massive, flow-banded, and agglomeratic porphyritic rhyolite

INTRUSIVE ROCKS

Dike rocks (Ordovician and possibly younger)—See explanation of map symbols for description

Cape Ann Granite (Ordovician)—Ranges from quartose granites, through syenites, to diorites. The more widespread felsic phases are predominantly unfoliated, fine-medium to coarse-grained (0.3–1.5 cm (0.1–0.6 in.)), leucocratic alkali-feldspar granite, alkali-feldspar quartz syenite, or alkali-feldspar syenite. Rock fabric principally uneven granitic, but may be subporphyritic or cumulus. Syenitic facies are mineralogically similar to the granitic facies, but lack quartz and may contain nepheline and sodalite. Textural variability characterizes the syenitic facies; rock texture ranges from medium to very coarse grained (2–5 cm (0.8–2 in.)), massive, hypidiomorphic to diabasic and trachytic. Point-to-point variations in texture are common

EXPLANATION OF MAP SYMBOLS

Contact—Approximately located; dotted where concealed

Probable fault—Approximately located; dotted where concealed. U, upthrown side; D, downthrown side. Arrow shows direction of relative movement; T, upper plate of thrust fault

PLANAR FEATURES

(Symbols may be combined. Point of observation at intersection of symbols)

Strike and dip of bedding

- Inclined
- Vertical

Strike and dip of primary foliation—Oriented inclusions, minerals, or schlieren

- Inclined
- Vertical

Strike and dip of shearing—Single-sided open arrow shows sense of movement; closed arrow shows plunge of lineation where known

- Inclined
- Vertical

Strike and dip of joints

- Inclined
- Vertical

SPECIAL SYMBOLS IN GRANITE AND SYENITE

(May be combined)

- **Station for modal analysis**—Analyses also done at stations identified by planar symbols in felsic rocks
- Subporphyritic or cumulus texture
- Aplite or pegmatite present
- Noncognate inclusion
- Cognate inclusion
- P — **Pink phase**
- **Coarse-grained phase of syenite facies**
- **Hornblende diorite porphyry inclusions**—Characterized by large (up to 10 cm (4 in.) long), white-weathering, red-purple labradorite phenocrysts

DIKE

(Letter symbol indicates rock type, texture, or physical form)

- **Greater than 3 m (10 ft) wide**
- **Less than 3 m (10 ft) wide**
- a — Alkali-feldspar syenite or foid-bearing alkali-feldspar syenite—Texture may be trachytic, massive, or pegmatitic. Potassium-rich feldspar dominant, 75–95 percent; nepheline and sodalite, 0–10 percent; mafic minerals, 5–15 percent; and local, well-crystallized magnetite
- b — Basalt or gabbro—Variable texture and mineralogy. Fine to medium grained, granular, or porphyritic. Plagioclase, commonly altered labradorite, principal mineral; hornblende dominant mafic mineral, but may be pinkish pigeonite, pale-green augite, or biotite; olivine rare, apatite, titanite, magnetite, and pyrite may be accessory minerals. Dikes commonly separated and cut by unfoliated granite; dike margins chilled, but fractured ends of blocks are not
- d — Diabase—Medium grained, diabasic texture. Otherwise similar to b
- p — Porphyritic
- s — Isolated angular blocks surrounded by unfoliated country rock
- **Dike swarm**

OTHER FEATURES

- **Cataclastic rock**
- **Bedrock outcrop**—Solid where mapped; patterned where too abundant to map separately. Shown only in northwest part of map. Elsewhere, exposures are indicated by other symbols

FIGURE 4-2

BEDROCK GEOLOGY MAP

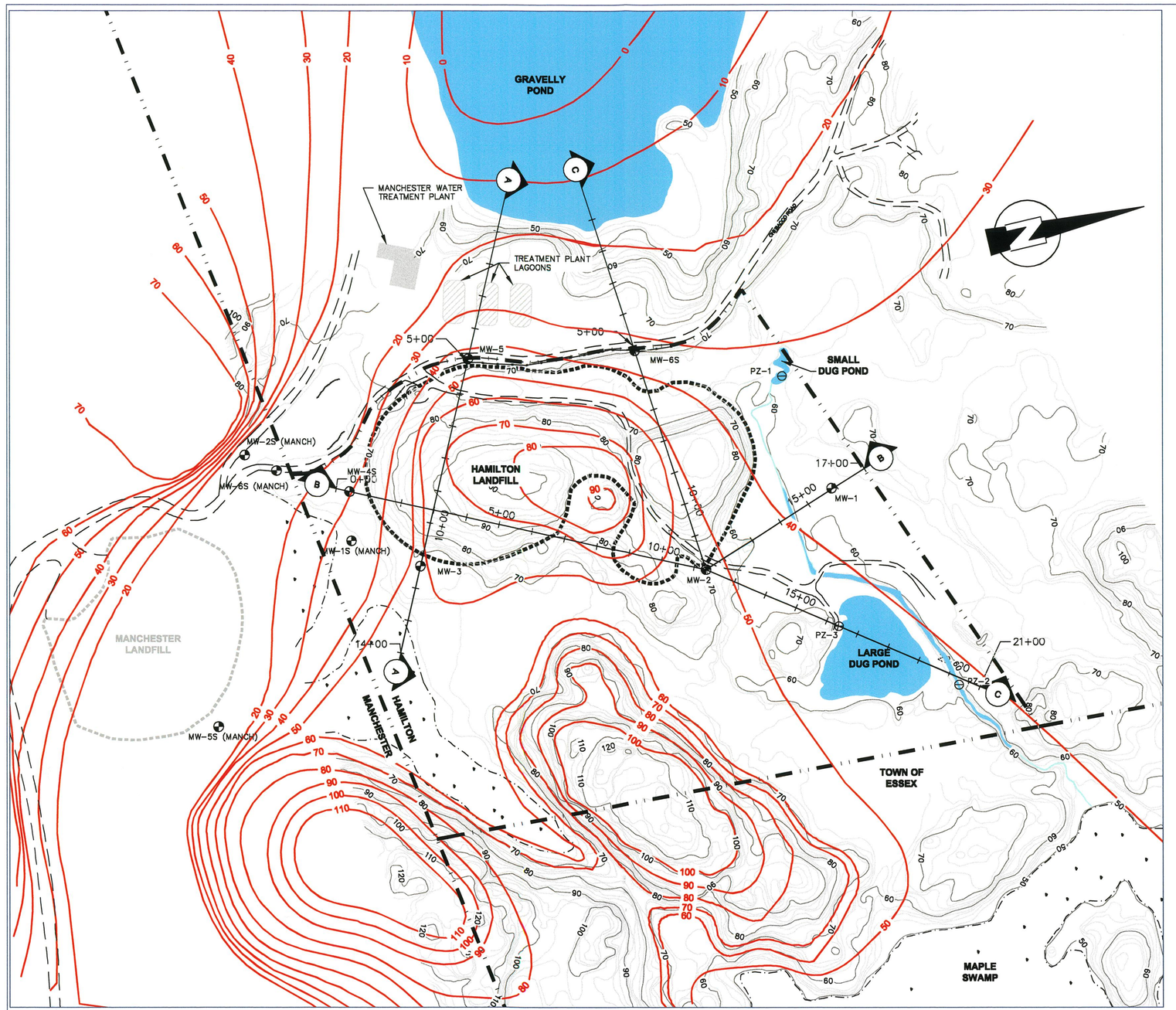
HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

BEDROCK GEOLOGIC MAP
MARBLEHEAD NORTH QUADRANGLE,
ESSEX COUNTY, MASSACHUSETTS
BY WILLIAM H. DENNEN 1991
PREPARED BY THE USGS IN
COOPERATION WITH THE
COMMONWEALTH OF
MASSACHUSETTS DEPARTMENT OF
PUBLIC WORKS

S E A

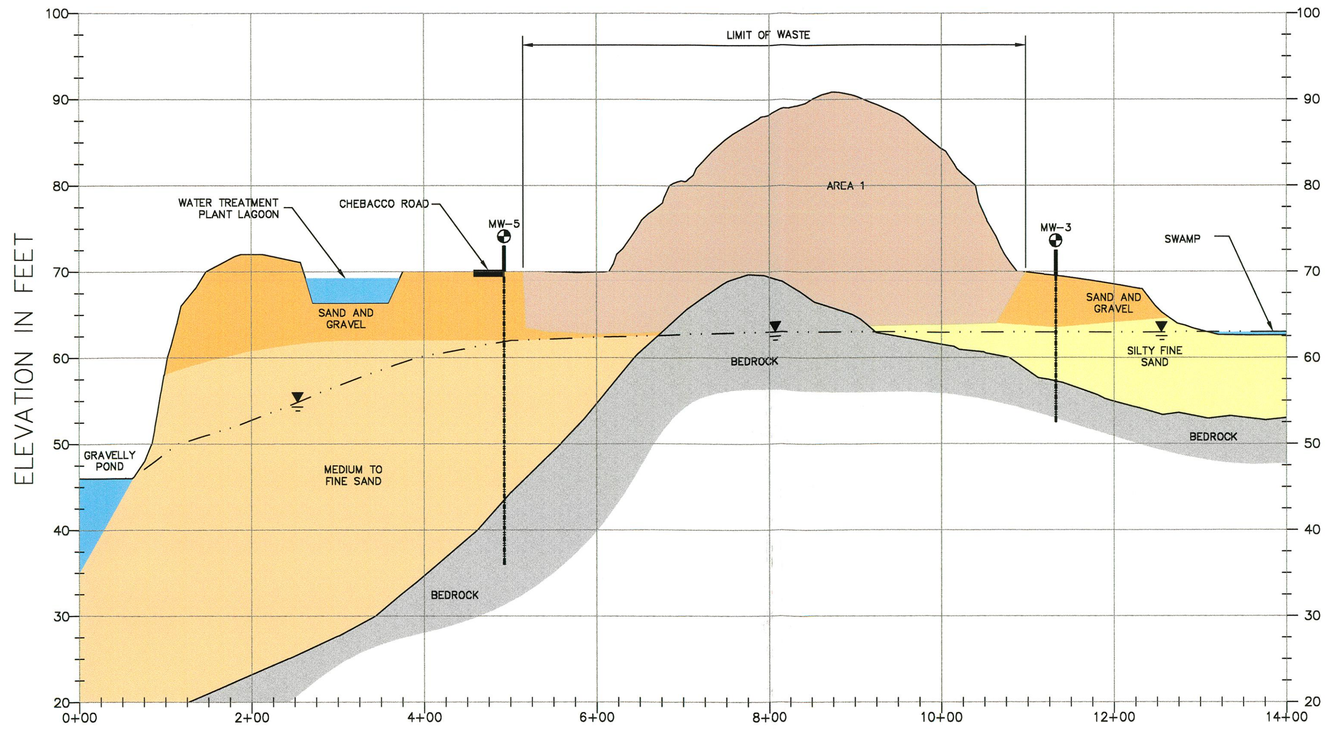
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

G:_CLIENTS\HAMILTON MA\2006054.08A CSA\GENERAL\BEDROCK.DWG



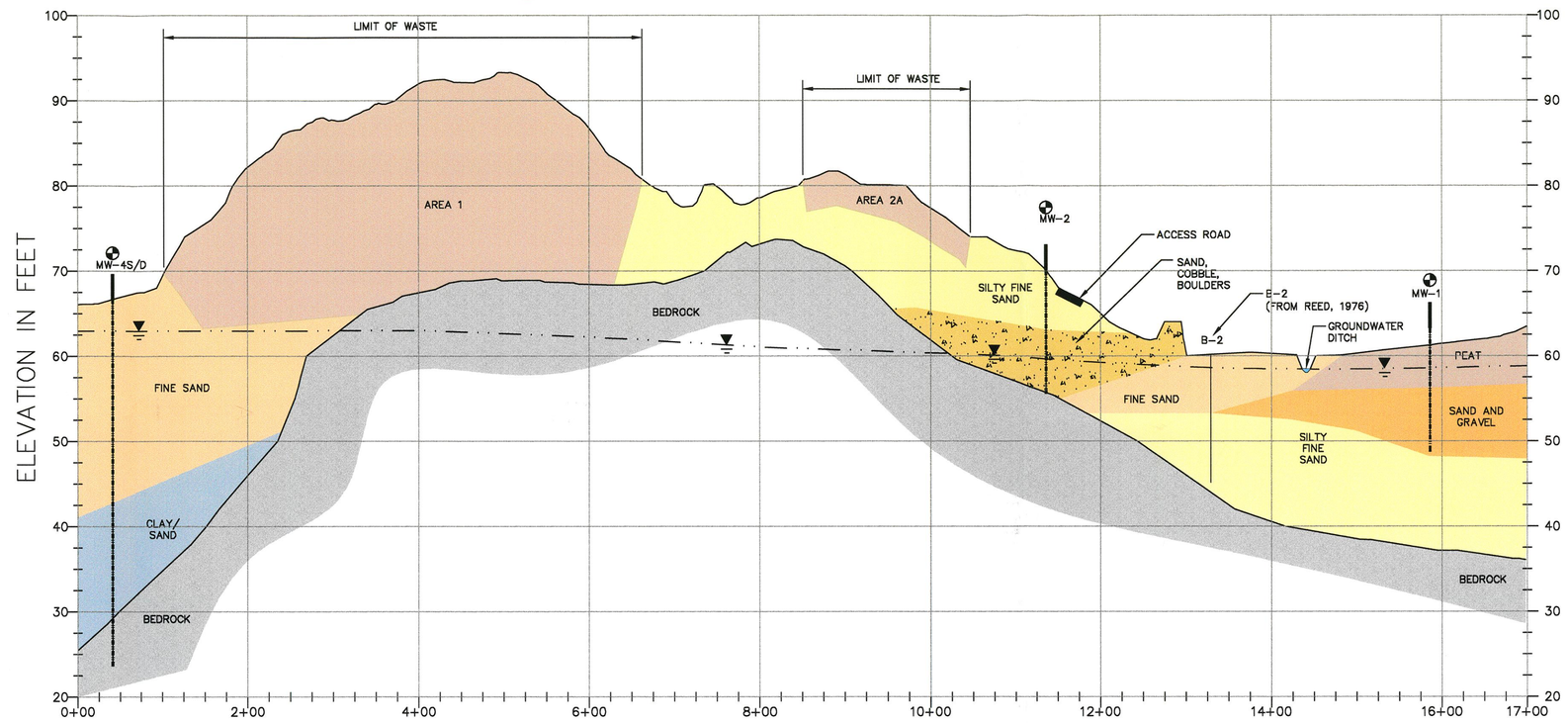
BEDROCK CONTOUR MAP

0 200 400 600
SCALE IN FEET



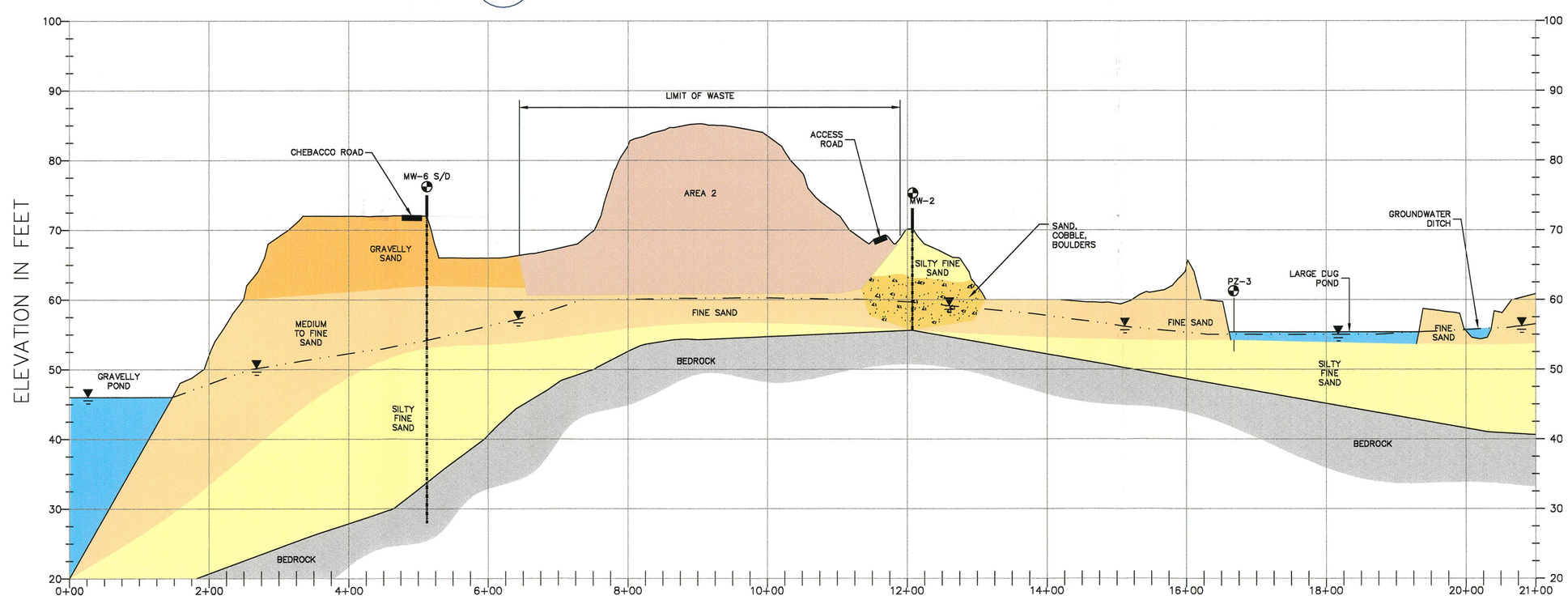
SECTION A-A

SCALE: H: 1"=100' V: 1"=10'



SECTION B-B

SCALE: H: 1"=100' V: 1"=10'



SECTION C-C

SCALE: H: 1"=100' V: 1"=10'

LEGEND

- PROPERTY LINE
- APPROX. LIMIT OF WASTE (PER SEPTEMBER 2007 TEST PITTING)
- GROUNDWATER TABLE
- 90 — BEDROCK CONTOURS (10 FT INTERVAL)
- 80 — MAJOR CONTOUR (EXISTING 10 FT)
- MINOR CONTOUR (EXISTING 2 FT)
- TREE LINE
- GRAVEL ROAD
- MW-1 — HAMILTON LANDFILL MONITORING WELL
- MW-6S (MANCH) — MANCHESTER LANDFILL MONITORING WELL (INCLUDED IN HAMILTON CSA MONITORING WELL NETWORK FOR WATER LEVELS)
- PZ-2 — CSA PIEZOMETER

NOTES

1. BEDROCK CONTOURS ARE APPROXIMATE AND WERE ESTIMATED USING THE FOLLOWING SOURCES:
   A. SEA BORING LOGS FROM HAMILTON LANDFILL CSA MONITORING WELL INSTALLATION, NOVEMBER, 2006.
   B. HAMILTON SANITARY LANDFILL SITE PLAN PREPARED BY ALONZO B. REED, INC., DECEMBER, 1970 (SITE PLAN SHOWS ON-SITE BEDROCK OUTCROP).
   C. BORINGS AND TEST PIT LOGS FROM JULY, 1976 HAMILTON SANITARY LANDFILL FEASIBILITY STUDY, PREPARED BY CDM. BORINGS AND TEST PITS WERE ADVANCED BY DONALD B. REED IN APRIL AND MAY OF 1976 AS PART OF HYDROGEOLOGIC INVESTIGATION PORTION OF THE FEASIBILITY STUDY.
   D. BEDROCK SURFACE ELEVATION MAP (FIGURE 4-1) FROM JANUARY, 1996, MANCHESTER LANDFILL COMPREHENSIVE SITE ASSESSMENT, PREPARED BY CDM.
   E. CROSS-SECTION FIGURES (SECTION A-A & B-B) THROUGH GRAVELLY POND PROVIDED IN MAY, 1996, TOWN OF MANCHESTER ZONE II DELINEATION FOR ROUND POND WELLS NO.1 AND NO.2.
2. ALL ELEVATIONS ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.
3. LINES REPRESENTING CHANGES IN STRATA ARE BASED UPON INTERPOLATION BETWEEN SUBSURFACE EXPLORATIONS.
4. WATER LEVELS SHOWN ON THE PROFILES WERE MEASURED FROM GROUNDWATER MONITORING WELLS INCLUDED IN THE HAMILTON LANDFILL CSA NETWORK. GROUNDWATER ELEVATIONS SHOWN REFLECT MEASUREMENTS OBTAINED DURING THE JANUARY 2008 ROUND OF CSA MONITORING (REFER TO FIGURE 4-4 OF CSA FOR JANUARY 2008 GROUNDWATER CONTOUR PLAN).

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Scale	AS SHOWN
Date	OCTOBER 2008
Job No.	2006054.08A
Designed by	MSL/SEW
Drawn by	MSL
Checked by	SEW
Approved by	SEW

No.	Description	Date
	REVISIONS	

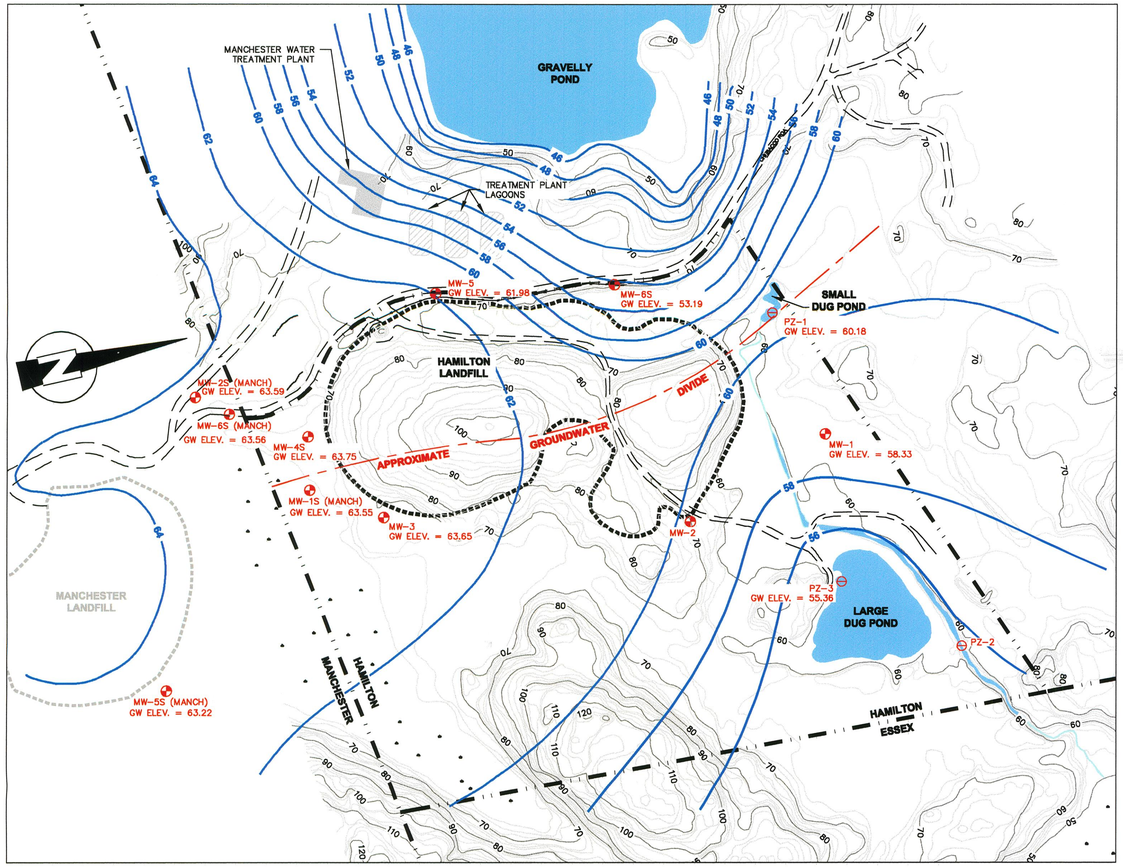
Client: TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON SANITARY LANDFILL COMPREHENSIVE SITE ASSESSMENT

Drawing: GEOLOGIC CROSS-SECTIONS AND BEDROCK CONTOUR PLAN

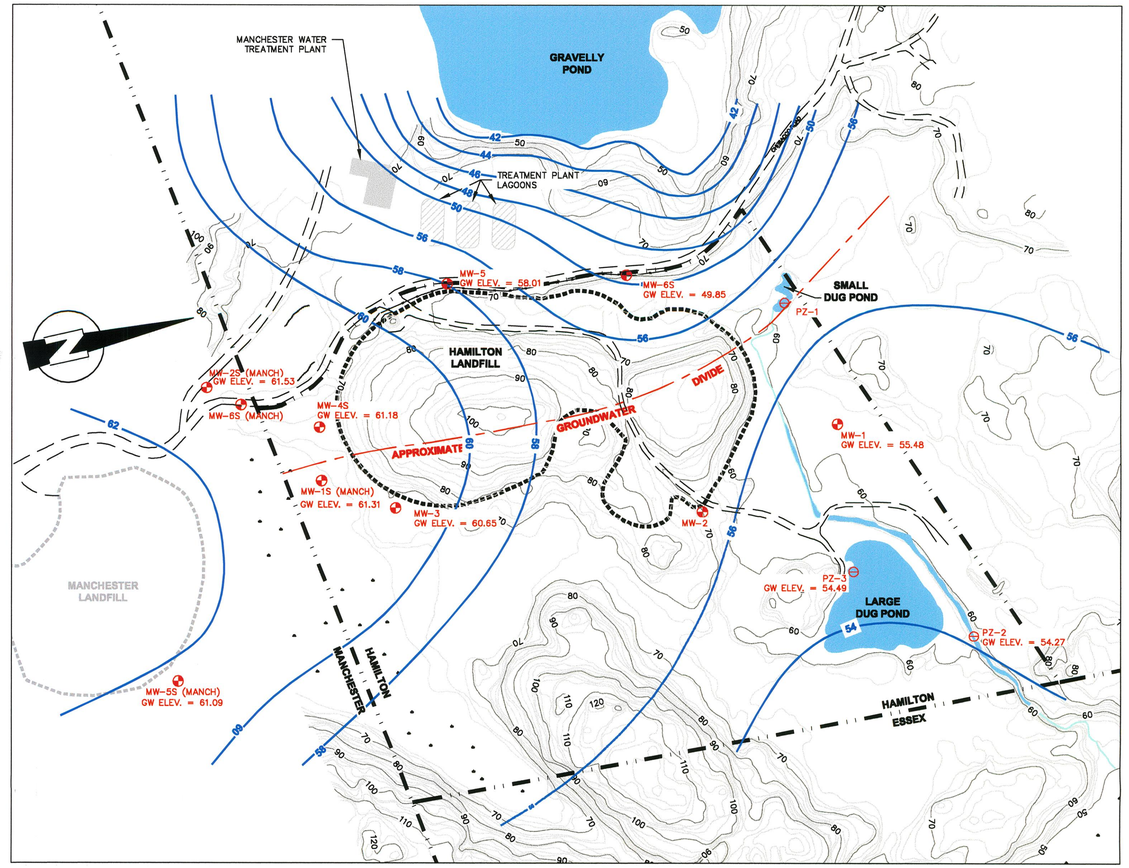
Sheet: FIGURE 4-3

PLOT DATE=11/3/2008 11:41:33 AM USER=JESSICA ORMSBY FILENAME=G:_clients\Hamilton MA\2006054.08A - CSA\civil\Hamilton_HydroGeoBedrock10_28_08.dwg



GROUNDWATER CONTOUR PLAN - HIGH GROUNDWATER (JANUARY 2008)

0 200 400 600
SCALE IN FEET



GROUNDWATER CONTOUR PLAN - LOW GROUNDWATER (OCTOBER 2007)

0 200 400 600
SCALE IN FEET

LEGEND

- PROPERTY LINE
- APPROX. LIMIT OF WASTE (PER CSA TEST PITTING)
- 70 — MAJOR SURFACE CONTOUR (EXISTING 10 FT)
- MINOR SURFACE CONTOUR (EXISTING 2 FT)
- 62 — EXTRAPOLED GROUNDWATER CONTOUR (NGVD 1929)
- MARSH LAND (NOT DELINEATED WETLANDS)
- TREE LINE
- GRAVEL ROAD
- MW-4S GW ELEV. = 63.75 — HAMILTON CSA MONITORING WELL WITH GROUNDWATER ELEVATION
- MW-6S (MANCH) GW ELEV. = 63.56 — MANCHESTER LANDFILL MONITORING WELL WITH GROUNDWATER ELEVATION
- PZ-2 — PIEZOMETER

GROUNDWATER MONITORING WELL INFORMATION

	Installation Date	Well ID	Ground Elevation	Top of PVC Elevation	Boring Depth (FBGS)	Screened Interval (FBGS)	Depth to Bedrock (FBGS)
Hamilton Wells	November 2006	MW-1	60.33	62.91	15	5 - 15	NE
		MW-2	66.14	68.43	14.5	2 - 7	NE
		MW-3	67.70	70.20	17	5 - 15	12
		MW-4S	67.22	69.70	12	2 - 12	38
		MW-4D	67.26	69.80	43	27 - 37	
		MW-5	70.95	73.80	34	7 - 17	27
		MW-6S	71.56	74.43	27	17 – 27	37
		MW-6D	71.43	74.21	44	39 - 44	
Manchester Wells	June 1994	MW-1S$_{manch}$	63.80	66.10	36	9.2 – 13.8	28
		MW-2S$_{manch}$	64.9	67.15	41	15.2 – 24.8	54
		MW-5S$_{manch}$	65.20	68.06	12	5.2 – 9.8	50
	March 1998	MW-6S$_{manch}$	---	68.32	11.4 (see note 5)	6.4 - 11.4 (see note 5)	71.5

1. FBGS = FEET BELOW GROUND SURFACE.
2. ALL ELEVATIONS ARE USGS DATUM (NGVD 1929).
3. HAMILTON MONITORING WELLS WERE INSTALLED UNDER S E A'S SUPERVISION IN CONNECTION WITH HAMILTON LANDFILL COMPREHENSIVE SITE ASSESSMENT (CSA).
4. MANCHESTER MONITORING WELLS WERE INSTALLED UNDER CDM'S SUPERVISION IN CONNECTION WITH MANCHESTER LANDFILL CSA.
5. WELL CONSTRUCTION INFORMATION IS NOT AVAILABLE FOR MW-6S$_{MANCH}$. THE DEPTH OF THE WELL WAS MEASURED BY S E A ON DECEMBER 5, 2007. A 5-FOOT WELL SCREEN IS ASSUMED BASED ON TOTAL WELL DEPTH AND APPROXIMATE 5-FOOT SCREEN INTERVAL AT MW-5S.
6. WITH THE EXCEPTION OF MONITORING WELL MW-6S$_{MANCH}$, GROUND ELEVATIONS, TOP-OF-PVC ELEVATIONS, BORING DEPTHS AND SCREENED INTERVALS FOR MANCHESTER WELLS WERE OBTAINED FROM TABLE 2-1 OF JANUARY 1996 MANCHESTER LANDFILL CSA REPORT. DEPTHS TO BEDROCK AT MANCHESTER WELLS WERE OBTAINED FROM BEDROCK WELL CONSTRUCTION LOGS PROVIDED IN APPENDIX B OF MANCHESTER CSA REPORT (IE. DEPTH TO BEDROCK AT MW-1S$_{MANCH}$ WAS OBTAINED FROM WELL CONSTRUCTION LOG FOR MW-1S$_{MANCH}$).
7. GROUND ELEVATIONS AND TOP-OF-PVC ELEVATIONS FOR HAMILTON WELLS AND MANCHESTER WELL MW-6S$_{MANCH}$ WERE BASED ON SURVEY PERFORMED BY S E A ON DECEMBER 4, 2007. SURVEY WAS PERFORMED USING TOP-OF-PVC RISER AT MW-2S$_{MANCH}$ AS THE BENCHMARK ELEVATION (ELEVATION 67.15, USGS DATUM, PER TABLE 2-1 OF MANCHESTER CSA REPORT).

REFER TO TABLE 4.3 OF CSA REPORT FOR SUMMARY OF CSA WATER LEVEL MEASUREMENTS

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

No.	Description	Date
	REVISIONS	

Scale	AS SHOWN
Date	OCTOBER 2008
Job No.	2006054.08A
Designed by	SEW
Drawn by	JMC
Checked by	SEW
Approved by	SEW

Client: TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON SANITARY LANDFILL COMPREHENSIVE SITE ASSESSMENT

Drawing: GROUNDWATER CONTOUR PLANS

Sheet: FIGURE 4-4

PLOT DATE=11/3/2008 3:25:55 PM USER=JESSICA ORMSBY FILENAME=G:_clients\Hamilton MA\2006054.08A - CSA\civil\Hamilton_HydroGeo GW Contours.dwg

APPENDIX A

CSA Scope of Work Correspondence

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST REGIONAL OFFICE
205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ROBERT W. GOLLEDGE, Jr.
Secretary

ARLEEN O'DONNELL
Commissioner

This is an electronic facsimile of a document on file with the Massachusetts Department of Environmental Protection.

September 13, 2006

Mr. Steven Kenney, Director
Town of Hamilton
Department of Public Works
P.O. Box 429
Hamilton, Massachusetts 01936

RE: Hamilton – Solid Waste/COR
Chebacco Road
Hamilton Landfill
CSA Scope of Work
Conditional Approval
FMF: 39326

Dear Mr. Kenney:

The Massachusetts Department of Environmental Protection, Northeast Regional Office, Bureau of Waste Prevention, Solid Waste Management Section (MassDEP), has reviewed the proposed scope of work (the CSA Scope) for completing a Comprehensive Site Assessment of the Hamilton Landfill (the Landfill) located on Chebacco Road in Hamilton, Massachusetts. The CSA Scope was prepared on behalf of the Town of Hamilton (the Town) by SEA Consultants Inc. (SEA) of Cambridge, Massachusetts, and proposes, without limitation, the following activities:

- The installation of test pits at the perimeter of the Landfill and the former sludge lagoon to delineate the limits of waste.
- The installation of up to ten (10) groundwater monitoring wells, twenty four (24) landfill gas sampling points and three stream (3) piezometers.
- The collection and analysis of groundwater, surface water and soil gas samples.

The CSA Scope does not provide for the collection of sediment samples from the surface water bodies or wetlands in the vicinity of the Landfill.

MassDEP has reviewed the CSA Scope pursuant to 310 CMR 19.000, the Solid Waste Management Regulations, and for consistency with the guidelines of MassDEP's Landfill Technical Guidance Manual (DEP Publication No. SWMID: 001-91-G, Rev. 5/97). MassDEP approves the CSA Scope subject to compliance with the following conditions.

1. The Town shall modify the CSA Scope to include the collection and analysis of sediment samples at the site including, without limitation, the collection of sediment samples from the proposed piezometer locations. The samples shall be analyzed for the parameters identified at 310 CMR 19.132(1)(h). The Town shall within thirty (30) days of the date of this decision provide MassDEP with a plan showing the location of the proposed sediment samples.

2. Sufficient test pits and/or borings shall be installed to delineate the extent of the solid waste at the site.

3. In addition to the parameters identified in the CSA Scope, the landfill gas sampling points shall be screened for the presence of volatile organic compounds (VOCs). If VOCs are detected during the landfill gas screening the Town may be required to collect samples for laboratory analysis.

4. The Town shall request access from the Town of Manchester to survey and gauge existing monitoring wells at the Manchester Landfill and Water Supply Plant that are in the vicinity of the Hamilton Landfill for purposes of defining the groundwater flow. The request shall be made in writing and copies of the request and responses, if any, from the Town of Manchester shall be included as an appendix in the Comprehensive Site Assessment report.

5. All monitoring wells shall be sampled in a manner that minimizes sample turbidity, such as proper development and low flow sampling.

6. The Town shall provide sample splits to MassDEP upon request by MassDEP.

7. The UTM coordinates and surveyed elevation data for the monitoring wells and the piezometers shall be included in the CSA Report.

8. The static groundwater elevations shall be measured in all the groundwater monitoring wells and piezometers at the Landfill during each sampling round.

9. The groundwater elevation data for each well shall be summarized in a tabular format including:
    a. the actual measured depth to groundwater,
    b. the elevation of the datum,
    c. the calculated groundwater elevation, and
    d. a summary of the condition of each well.

10. All environmental sample collection and laboratory data analysis shall comply with sections 310 CMR 40.0017 Environmental Sample Collection and Analysis and 310 CMR 40.0191 Response Action Performance Standards of the Massachusetts Contingency Plan. Note that the Department's Bureau of Waste Site Cleanup's, guidance document, the Compendium of Analytical Methods (BWSC-CAM-VII A), provides guidance on meeting the requirements of 310 CMR 40.0117 and 310 CMR 40.0191. This document can be found on the Department's website at http://www.mass.gov/dep/about/qaqcdocs.htm.

11. All laboratory data shall be reported to MassDEP in a tabular format. If the concentration of an analyte is below the Practical Quantification Limit (PQL) for the analytical method used then the results for that analyte shall be reported as less than the PQL (i.e. <0.005). Laboratory data results shall not be reported as non-detect (ND), below detection limit (BDL), or zero. Copies of the actual laboratory data reports shall be included as an appendix to all reports.

12. Following completion of the four (4) quarters of environmental sampling provided for in the CSA Scope, the Town shall continue to conduct environmental monitoring at the landfill including the collection of landfill gas samples quarterly and groundwater samples semiannually. The results of the environmental sampling shall be reported to MassDEP in accordance with 310 CMR 19.132.

13. The CSA shall provide information equivalent to that of a Phase II Investigation pursuant to 310 CMR 40.0000. It shall include a conceptual model for the Landfill that includes discussion of the relationship of the Landfill to Gravelly Pond, the Manchester Public Water Supply and the Manchester Landfill. It shall also discuss the impact of the septage lagoon area on the groundwater and the potential for bedrock contamination. The CSA shall also assess the potential impact of lead shot from the shooting ranges at the property on the landfill. Information from publicly available environmental reports for abutting properties such as the Manchester Landfill and the Manchester Water Treatment Facility shall be reviewed and utilized in the CSA.

14. The Town shall notify MassDEP of any significant changes to the CSA Scope for MassDEP review and approval.

This Decision is issued by MassDEP under the authority of M.G.L., Chapter 111, Section 150A and 310 CMR 19.000. All activities shall be implemented in compliance with 310 CMR 40.0114 Solid Waste Management Facilities of the Massachusetts Contingency Plan and in a manner consistent with the Landfill Guidance Manual (1997). This Decision does not relieve the Town of its responsibility to comply with all other applicable state, federal, and local statutes, regulations, and requirements.

NOTICE OF RIGHT TO APPEAL

The Town is hereby notified that it may within twenty-one (21) days file a request that this decision be deemed a provisional decision under 310 CMR 19.037(4)(b), by submitting a written statement of the basis on which the Town believes it is aggrieved, together with any supporting materials. Upon timely filing of such a request, the decision shall be deemed a provisional decision with an effective date twenty-one (21) days after MassDEP receipt of the request. Such a request shall reopen the administrative record, and MassDEP may rescind, supplement, modify, or reaffirm its decision. Failure by the Town to exercise the right provided in this section shall constitute a waiver of the Town right to appeal.

Appeal. Any person aggrieved by the issuance of this decision, except as provided for under 310 CMR 19.037(4)(b), may file an appeal for judicial review of said decision in accordance with the provisions of M.G.L. c. 111, s. 150A, and M.G.L. c. 30A, not later than thirty (30) days following the receipt of the final decision. The standing of a person to file an appeal and the procedures for filing such appeal shall be governed by the provisions of M.G.L. c. 30A. Unless the person requesting an appeal requests and is granted a stay of the terms and conditions of the decision by a court of competent jurisdiction, the decision shall remain effective.

Notice of Action. Any aggrieved person intending to appeal this decision to the Superior Court shall first provide notice to MassDEP of their intention to commence such action. Said notice of intention shall include MassDEP file number and shall identify with particularity the issues and reasons why it is believed the decision was not proper. Such notice shall be provided to the Office of General Counsel of MassDEP and the Regional Director for the regional office which processed the application. The appropriate addresses to which to send such notices are:

General Counsel
Department of Environmental Protection
One Winter Street - Third Floor
Boston, MA 02108

Richard J. Chalpin, Regional Director
Department of Environmental Protection
Metropolitan Boston/Northeast Regional Office
205B Lowell Street,
Wilmington, MA 01887

No allegation shall be made in any judicial appeal of this decision unless the matter complained of was raised at the appropriate point in the administrative review procedures established in those regulations, provided that a matter may be raised upon a showing that it is material and that it was not reasonably possible with due diligence to have been raised during such procedures or that matter sought to be raised is of critical importance to the environmental impact of the permitted activity

Should you have any questions regarding this letter, please contact John Morey at (978) 694-3297.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John P. Morey
Environmental Analyst

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John A. Carrigan
Section Chief
Solid Waste Management

JAC/JPM

Cc: Stephen Wright P.E., (Electronic Copy)
SEA Consultants Inc.
485 Massachusetts Ave,
Cambridge MA 02139-4018
Stephen.Wright@seacon.com

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

S E A Consultants Inc.
Scientists/Engineers/Architects

May 19, 2006

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

Re: Hamilton Sanitary Landfill
Comprehensive Site Assessment Scope of Work
S E A Ref. No. 2006054.01

Dear Mr. Carrigan:

S E A Consultants, on behalf of the Town of Hamilton, has prepared the following Comprehensive Site Assessment (CSA) Scope of Work for the Hamilton Sanitary Landfill located off of Chebacco Road in Hamilton, Massachusetts. The CSA Scope of Work has been prepared pursuant to discussions held with the Department of Environmental Protection on April 11, 2006 and documented in S E A's May 2, 2006 letter to your office. The Scope has also been prepared to comply with the regulatory requirements for completing a CSA as provided under 310 CMR 19.150 of the Solid Waste Management Facility Regulations and the DEP's May 1997 Landfill Technical Guidance Manual.

As discussed with the DEP, the following Scope of Work is intended to supersede the proposed CSA Scope of Work included in the December 31, 1991 Initial Site Assessment (ISA) Report prepared by CDM.

PROPOSED CSA SCOPE OF WORK

Mapping

The base plan provided in Appendix A of the ISA Report will be updated to reflect groundwater well installation locations and elevations. Additional base plan updates will be included in the CSA Report reflecting any other modifications to the CSA monitoring network, including the location of additional test pits excavated in connection with the proposed CSA field investigations.

Test Pits to Confirm Landfill Limits

S E A will observe the excavation of several test pits along the landfill perimeter and in the vicinity of the former septage lagoons to confirm the limit of the landfill depicted on the ISA base plan. Test pitting near the septage lagoons will be performed to determine whether the former lagoon area constitutes a portion of the sanitary landfill.

Drilling Program

S E A proposes to install groundwater monitoring wells at six (6) locations surrounding the landfill. Based upon the previously documented existence of a groundwater divide that crosses the landfill (refer to ISA Report), installation of an upgradient (with respect to the landfill) monitoring well may not be possible. Therefore, the proposed well network will ring the landfill, with the intention of confirming the divide, as well as providing sufficient coverage to assess downgradient (with respect to the landfill) groundwater

485 Massachusetts Avenue
Cambridge, MA 02139-4018
(617) 497-7800
FAX (617) 498-4630
Email cambridge@seacon.com

Rocky Hill, CT
Concord, NH

quality on either side of the divide. To this end, S E A proposes two well locations oriented in approximate alignment with the divide (MW-3 and MW-6), two wells on the western side of the divide (MW-4 and MW-5, which are downgradient of "Area 1" of the landfill), and two wells on the eastern side of the divide (MW-1 and MW-2, which are downgradient of "Area 2" of the landfill).

All six monitoring locations will consist of wells screened across the water table (i.e. shallow monitoring wells). However, as discussed during the April 11th meeting, the DEP has commented that the groundwater monitoring well network must also adequately screen water quality at depth within the overburden, particularly given the nearby location of Gravelly Pond. To accomplish this, S E A proposes to advance boreholes to bedrock at the MW-3, MW-4, MW-5 and MW-6 monitoring locations. The presence of bedrock at these locations will be confirmed by coring into rock to a depth of 5 feet. If the depth of the overburden at MW-3 through MW-6 is sufficient to install deeper wells at these locations (sufficient to maintain a 20-foot screen separation from the wells screened across the water table) then overburden wells will be installed. Regardless of the depth of overburden at proposed location MW-6, S E A will install a deeper well at the location (installed within bedrock, if necessary) to provide additional water quality information at depth in proximity to Gravelly Pond.

A summary of the proposed CSA groundwater monitoring network is provided in Table 1.

Table 1
Proposed Groundwater Monitoring Well Network

Well ID	Description
MW-1S	Shallow well screened across the water table (10 foot screen)
MW-2S	Shallow well screened across the water table (10 foot screen)
MW-3S	Shallow well screened across the water table (10 foot screen)
MW-3D (potential)	Deep well that will be installed if overburden is of sufficient depth to install 10-foot well screen that has a 20-foot separation from bottom of shallow (MW-3S) well screen.
MW-4S	Shallow well screened across the water table (10 foot screen)
MW-4D (potential)	Deep well that will be installed if overburden is of sufficient depth to install 10-foot well screen that has a 20-foot separation from bottom of shallow (MW-4S) well screen.
MW-5S	Shallow well screened across the water table (10 foot screen)
MW-5D (potential)	Deep well that will be installed if overburden is of sufficient depth to install 10-foot well screen that has a 20-foot separation from bottom of shallow (MW-5S) well screen.
MW-6S	Shallow well screened across the water table (10 foot screen)
MW-6D	Deep well that will be installed if overburden is of sufficient depth to install 10-foot well screen that has a 20-foot separation from bottom of shallow (MW-6S) well screen. ***If overburden is not of sufficient depth at this location to maintain a 20-foot screen separation, a bedrock well will be installed and screened 5 feet into bedrock.***

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

Based upon the proposed well installation program described above, the CSA groundwater monitoring well network will consist of a minimum of seven well locations (MW-1S, MW-2S, MW-3S, MW-4S, MW-5S, and couplet MW-6S/6D) to a maximum of ten locations (MW-1S, MW-2S, MW-3S/3D, MW-4S/4D, MW-5S/5D, and MW-6S/6D). The depth to bedrock at locations MW-3, MW-4 and MW-5 will dictate whether couplets will be installed at these locations. The proposed CSA monitoring well locations are shown on the site plan provided in Appendix A.

Piezometer Installation

S E A proposes to install two piezometers in the stream located immediately north of the landfill. One piezometer (PZ-1) will be installed at the stream headwater and the second piezometer (PZ-2) will be installed approximately 1,000 feet downstream (east) from PZ-1 near the Hamilton/Essex town line. S E A also proposes to install one piezometer (PZ-3) in the pond located in the northeast corner of the site. Water level measurements will be collected at PZ-1 and PZ-2 to provide vertical gradient information that will indicate whether groundwater discharges to the stream or the stream discharges to groundwater. Similarly, water level measurements will be collected at PZ-3 to determine whether groundwater discharges to the pond or the pond discharges to groundwater.

Determination of Hydraulic Conductivity

In-situ hydraulic conductivity tests are proposed to be performed on each of the newly installed groundwater monitoring wells. Hydraulic conductivity will be calculated, based on rising head slug tests performed using a pressure transducer and electronic data logger. Data will be analyzed using the Bouwer and Rice method.

Soil Gas Probe Installation

Subsurface landfill gas migration will be analyzed by installing soil gas probes to a depth of approximately 3 feet along the landfill perimeter and additional probes located further from the landfill perimeter near the Hamilton-Wenham Rod and Gun Club. The proposed gas probe locations are shown on the site plan provided in Appendix A. As shown on the site plan, a total of twenty-four probes (SG-1 through SG-24) would be installed as part of the CSA field program, with two probes (SG-23 and SG-24) located near the rod and gun club to screen for potential gas migration in that area.

Sampling and Analysis Plan

Groundwater

Four quarterly rounds of groundwater sampling are proposed at the landfill. Specific parameters to be tested during each round include general chemistry, total metals, and VOCs. In addition, the first and third rounds of groundwater sampling will include analysis of DEP-defined "extended parameters", which consist of acid and base/neutral extractable compounds (ABNs, note:. Polynuclear Aromatic Hydrocarbons will be included as part of the ABN analysis), PCBs and pesticides. Table 2 provides a summary of the proposed CSA groundwater monitoring program.

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

Table 2
Proposed Groundwater Analytical Parameters and CSA Monitoring Frequency

Monitoring Points	Analytical Category		Description	CSA Rounds
MW-1, MW-2, MW-3S/D, MW-4S/D, MW-5S/D, MW-6S/D	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.	1, 2, 3 & 4
		Dissolved Metals	Arsenic, Barium, Cadmium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Silver, Zinc.	1, 2, 3 & 4
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260	1, 2, 3 & 4
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270	1 & 3
		PCBs and Pesticides	EPA Method 8080	1 & 3

Surface Water Sampling

Two rounds of surface water sampling are proposed to be collected near the three piezometer locations and are designated on the site plan as monitoring locations SW-1, SW-2 and SW-3. The two rounds of surface water monitoring will be collected during the Round 1 and Round 3 CSA monitoring events to obtain a representative semi-annual seasonal variation in stream conditions (i.e. summer and winter variation). The samples will be analyzed for general chemistry, total metals, VOCs and DEP-defined extended parameters (ABNs, pesticides, and PCBs). Table 3 provides a summary of the proposed CSA surface water monitoring program.

Table 3
Proposed Surface Water Analytical Parameters and CSA Monitoring Frequency

Monitoring Points	Analytical Category		Description	CSA Rounds
SW-1, SW-2, SW-3	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.	1 & 3
		Dissolved Metals	Arsenic, Barium, Cadmium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Silver, Zinc.	1 & 3
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260	1 & 3
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270	1 & 3
		PCBs and Pesticides	EPA Method 8080	1 & 3

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

Landfill Gas Monitoring

Four rounds of landfill gas monitoring will be performed from the proposed network of twenty-four soil gas probes. Soil gas will be analyzed in the field for percent methane by volume in air, lower explosive limit (LEL) of methane, hydrogen sulfide, carbon dioxide, percent oxygen, and total VOCs.

Environmental Monitoring QA/QC Plan

An Environmental Monitoring QA/QC Plan has been developed for the project and is provided in Appendix B. The QA/QC Plan includes protocols for environmental drilling and well installation, landfill gas monitoring, and all related field QA/QC procedures which will be followed during the course of the CSA field investigations.

Health and Safety Plan

A Health and Safety Plan has been prepared for the CSA field investigations and is provided in Appendix C. Level D personal protection is anticipated.

CSA Report Submittal

Upon completion of the tasks in the Scope of Work, a report summarizing the results of the CSA activities will be prepared. The report is proposed to include the following information, in conformance with the requirements outlined in the DEP's Landfill Technical Guidance Manual:

A. DATA INTERPRETATIONS AND PRESENTATIONS

1. Evaluation of groundwater quality on-site with respect to background quality (assuming background quality can be determined given the previously documented location of a groundwater divide bisecting the landfill);
2. Evaluation of site hydrogeology with respect to local geology;
3. Identification of possible surface water flow paths;
4. Interpretation of geologic stratigraphy;
5. Interpretation of trends observed in analytical data;
6. Calculation of hydraulic conductivities (based on slug testing);
7. Evaluation of landfill gas data;
8. Identification of potential migration pathways;
9. Interpretation of condition of existing landfill cover system, including a summary of closure documents prepared in connection with the previous capping of the landfill in the 1970s and 1980s; and
10. Recommendations for additional CSA work, if appropriate.

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

B. MAPS, PLANS AND FIGURES

1. Locus map;
2. Site plan;
3. Bedrock contours (based upon monitoring well installation information and available regional mapping);
4. Geologic cross-sections, minimum of two at right angles;
5. Compilation of water table data on site maps contoured to indicate flow lines for both seasonal high and low groundwater elevations; and
6. Identification on an updated site map of test pit, monitoring well and soil gas probe locations utilized during the CSA.

C. SUMMARIES, TABLES AND FORMS

1. Logs of all proposed soil borings and test pits;
2. Tabulation of all soil boring and monitoring well construction data;
3. As-built design schematics for all monitoring wells;
4. Tabulation of all analytical and field screening data;
5. Tabulation of all water table elevation data; and
6. Tabulation of hydraulic conductivity test results.

D. BASELINE RISK ASSESSMENT

1. Identification of potential human and environmental sensitive receptors (from Initial Site Assessment);
2. Summary of contaminants and levels of contamination. Any contamination exceeding Maximum Contamination Levels (MCLs) or other relevant standards, will be highlighted;
3. Summary of all pathways (in soil, water or air) by which existing contamination may reach identified public health or environmental sensitive receptors;
4. A recommendation as to whether a quantitative risk assessment should be conducted.

CSA Project Schedule

The CSA field investigations and report preparation activities are expected to span an 18-month period. For planning purposes, the project schedule reflects the assumption that DEP approval of the CSA Scope of Work will be issued by the end of May 2006, allowing the Town to initiate the field investigations in June of 2006. The milestone events associated with the CSA field investigations and report preparation activities are outlined in the project schedule provided in Table 4.

REFERENCE DOCUMENT - APPENDICES NOT INCLUDED

Table 4
Proposed Schedule of CSA Field Investigations and Report Preparation

Task	Schedule	Funding Provisions
Boring Program and Monitoring Well Installation	June 2006	Town has funds to complete these tasks
Soil Gas Probe Installation	June 2006	
Slug Testing from New Wells	July 2006	
Round 1 Monitoring: *Groundwater, Surface Water & Landfill Gas*	July 2006	
Test Pit Investigations	August 2006	
Round 2 Monitoring: *Groundwater & Landfill Gas*	October 2006	Completion of these tasks is contingent upon obtaining funding during Fall 2006 Special Town Meeting
Survey Well and Test Pit Locations	November 2006	
Round 3 Monitoring: *Groundwater, Surface Water & Landfill Gas*	January 2007	
Round 4 Monitoring: *Groundwater & Landfill Gas*	April 2007	
Prepare CSA Report	July 2007 to October 2007	Completion of CSA Report is contingent upon obtaining funding during Spring 2007 Annual Town Meeting
Submit CSA Report to DEP	November 2007	

As shown in Table 4, the Town has funding in-place to complete several of the initial CSA field activities, including the well and gas probe installation, test pitting, and completion of the first round of CSA monitoring. The Town's ability to complete the remaining CSA tasks will be contingent upon obtaining funds during the Fall 2006 Special Town Meeting and Spring 2007 Annual Town Meeting. As part of the Fall Special Town Meeting the Town will request funding to complete the final three rounds of CSA monitoring, as well as incidental survey work required to update the ISA Base Map with the new well and test locations. The Town will then use its Spring 2007 Annual Town Meeting to request funding to prepare the CSA Report. Based upon this funding strategy, and assuming that the necessary funds to complete the CSA will be obtained during the Fall and Spring Town Meetings, S E A anticipates submitting the CSA Report to DEP in November of 2007.

The Town of Hamilton appreciates the DEP's comments provided during our April 11, 2006 meeting. We trust the proposed CSA Scope of Work accurately reflects your input and that the proposed project schedule, given funding considerations, meets with your approval. If you or any members of your staff have any questions regarding the proposed Scope of Work or project schedule, please call me at (617) 498-4624.

Very truly yours,

S E A CONSULTANTS INC.

Stephen E. Wright, P.E.

I:_clients\Hamilton MA\2006054.01 - Landfill Advisory Services\correspondence\CSA SOW01.doc

cc: Mr. Steven Kenney, Hamilton Department of Public Works

APPENDIX B

Town and DEP Correspondence Regarding Landfill Operations and Closure (1970s and 1980s)

The Commonwealth of Massachusetts
Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Regional Office
Tewksbury State Hospital
Tewksbury, Massachusetts 01876

Tel. 617-851-7261

December 21, 1977

Board of Public Works
Hamilton, Ma 01936

Attn: Mr. Wallace Lane, Superintendent

Re: Hamilton - Solid Wastes
Landfill off Chebacco Road
(Pine Street)

Gentlemen:

Engineers from the Metropolitan Boston-Northeast Region of the Department of Environmental Quality Engineering have reviewed the plans and report submitted in your behalf by Camp, Dresser & McKee Inc., of Boston. The report is entitled:

"Town of Hamilton Massachusetts
Sanitary Landfill Feasibility Study
July, 1976"

Included in the report are plans in three sheets and a surficial geology and ground water contour map and study by Mr. Donald E. Reed, Consulting Geologist. An inspection of the site was conducted on December 12, 1977 with Mr. Wallace Lane.

The Department considers the sealing and finishing of the existing landfill area, as described on page 14 of the aforementioned report, to be of utmost importance at this time. This necessary work includes the permanent drainage detailed in the report and plan numbered sheet 4-1. Proposals for this closure of the existing landfill area, essentially the area South and West of the designated ground water divide, are presently approveable with the exception of the proposed Hot Load Area which should be relocated somewhere on the other side of the Ground Water Divide. After proper closure of this area, no further deposition or stockpiling of any materials whatsoever shall be allowed without prior written approval from this Department.

To provide the Town with sufficient time to decide upon its future direction for Solid Waste Disposal and to implement any approved plans, the Department is willing to approve the Interim Site Development and Operation upon resubmission of plans which will include the following revisions:

1) Rather than a base preparation of four feet of clean, pervious materials to at least elevation 74.0 as shown in Fig. 4-1 and sloped at 2% as shown in the cross section. The base preparation should consist of two feet of pervious material as described above with the top two feet to consist of less pervious silts and fines, with a coefficient of permeability no greater than 1×10^{-3} feet per

minute, found in the easterly area of the site underlain by silty fine sand and silt. The top slope of the base preparation should slope easterly away from the ground water divide. If the cost involved to recover these materials and the problems which may be encountered in acquiring the necessary permits are prohibitive in any way, off-site materials could be used with prior Departmental approval. Should leachate pollution occur, the recommended base preparation would facilitate any further leachate collection that may be required in this area.

2) A sequence and schedule of daily, intermediate, and final covering operations that will bring the area closest to the ground water divide to final grade and completion with such operation proceeding in a direction easterly and roughly parallel to the divide. This schedule should lead to the final closure of the entire site by July 1, 1980. The Department will not consider any further long-term site development or use of this site as a solid waste disposal facility beyond the limited interim operation.

3) Provisions be included in the plan to physically prohibit access to the septage disposal areas of the site and to final burial of these pits without allowing any overflows to the surface of the ground.

4) Plan submittal must include adequate provisions to satisfy the enclosed "Minimum Requirements for Supervision of Sanitary Landfills".

You are reminded that a Departmental ORDER remains in effect regarding this facility as per the Final Decision of April 9, 1976. Violations to this ORDER continue to exist at the site. These violations include, but are not limited to, the continuing disposal of septage at the site and the failure of the Town to make the necessary filing with the Hamilton Conservation Commission under Chapter 131, Section 40 of the General Laws. If the Department is not further notified of your intentions to achieve substantial compliance with the "Regulations for the Disposal of Solid Wastes by Sanitary Landfill" and the specific requirements of this correspondence and the Departmental Order outstanding, the Department will refer the matter to the Attorney General for enforcement purposes.

If you have any further questions, please contact Mr. William St. Hilaire at 851-7261 Ext. 30.

Very truly yours,

For the Commissioner,

Thomas F. McLoughlin

Thomas F. McLoughlin
Regional Environmental Engineer
Metropolitan Boston-Northeast Region

TFM/EwSh/plv
cc: Camp, Dresser & McKee, Inc.
One Center Plaza
Boston, Ma 02108
Attn: Mr. Clarence D. Beatty

Board of Health
Town Hall
Hamilton, Ma 01936

Conservation Commission
Town Hall
Hamilton, Ma 01936

The Commonwealth of Massachusetts
Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region

323 New Boston Street Woburn, MA 01801

ANTHONY D. CORTESE, Sc.D.
Commissioner
727-5194

December 18, 1979

Board of Public Works
Town Hall
Hamilton, MA

RE: Hamilton-Solid Wastes

Gentlemen:

In a letter dated May 23, 1979, the Metropolitan Boston-Northeast Regional Office of the Department of Environmental Quality Engineering informed the Town of Hamilton that its landfilling operation had moved westerly of the previous operating site onto virgin grounds without the approval of the Department.

The Department agreed to consider the illegally filled area as an interim alternative for refuse disposal for one year, provided that all refuse placed within four feet of high ground water be removed, the area be lined with a relatively impervious liner, possible leachate be separated from ground water, and the base of the liner be designed a minimum of four feet above the high ground water elevation. All of the above criteria were to be included in the design of the facility on a plan and submitted to the Department.

The Department has reviewed a construction and operation plan for the illegally filled area. The plan is titled:

Town of Hamilton, Massachusetts
Chebacco Road Sanitary Landfill
Construction and Operation Plan
July 1979
Camp Dresser & McKee Inc.

It is proposed to prepare the illegally filled area in two (2) Phases, having a base grade of elevation 78.0 sloping to elevation 74.0. The Department agreed to a reduction of the original base grades to a 1 percent slope, whereby the highest point of the site will be at elevation 76.5 sloping to elevation 74.0. Upon the completion of the site preparation of Phase I area, the unapproved landfilled refuse will be relocated to this area. When the relocation of the refuse has been completed, Phase II area will be prepared the same as Phase I area. On two occasions, the Department inspected the site during the site preparation. The last inspection was conducted on

December 6, 1979, when a representative from the Department met with Mr. Wallace Lane, Hamilton Board of Public Works and Mr. Ira Cohen, Engineer, Camp Dresser, and McKee, Inc., to determine if the site was prepared in accordance with the plans.

In conformance with Regulation 4.1 (d) of the "Regulations for the Disposal of Solid Wastes by Sanitary Landfill," the Department certifies that the site has been prepared in accordance with the Department's requirements and hereby approves the interim operation for one (1) year with the following conditions:

1. The facility shall be operated in strict conformance with the approved plan and the "Regulations for the Disposal of Solid Wastes by Sanitary Landfill."

2. The Town of Hamilton, shall submit to this Department an engineering supervision contract to include an inspection schedule and provisions for a leachate monitoring program in accordance with the Department's "Policy and Procedures Manual for Solid Waste Program Activities", a copy of which is enclosed.

3. The proper closure of the old disposal area shall be completed by August 15, 1980.

4. A quantity of suitable cover material sufficient for two (2) months operation shall be kept available at the site at all times.

5. Within one year of completing the landfill, the consulting engineer shall inspect the surface and take steps as soon as practicable to correct conditions leading to ponding and/or percolation of water due to settling, cracking or erosion.

No Environmental Assessment Form is required to be submitted for this project since it is exempt under the Environmental Protection Regulations of the Executive Office of Environmental Affairs, and the project has therefore been determine to cause no significant damage to the environment.

Very truly yours,

For the Commissioner

Gerald W. McCall

Gerald W. McCall
Acting Regional Environmental Engineer
Metropolitan Boston/Northeast Region

GWM/Ejm/dp

cc: Board of Health
cc: Camp Dresser & McKee

CDM

environmental engineers, scientists, planners, & management consultants

CAMP DRESSER & McKEE INC.

One Center Plaza
Boston, Massachusetts 02108
617 742-5151

23 June 1980

Mr. William St. Hiliare
Dept. of Environmental Quality Engineering
Metropolitan Boston - Northeast Section
New Boston Street
Woburn, MA

Dear Mr. St. Hiliare:

In accordance with our agreement with the Town of Hamilton, CDM staff visited the Town's Chebacco Road sanitary landfill on 13 June 1980 to provide technical assistance and inspection services. In general, the facility was found to be operating within applicable regulations and good engineering practice. The operation at the working face is well-controlled and regularly compacted. Provisions have been made to control wind-blown litter and low-permeability cover material is applied and compacted daily. Though gulls are evident around the site and on adjacent parcels, no gulls are congregating on the fill itself, attesting to the effectiveness of the cover operation.

The older fill area, to the west of the groundwater divide has been covered, sealed, graded, and seeded. The Town is in the process of installing the permanent, perimeter drainage facilities. The only detectable operational deficiency is a slope along the easterly side of the newly permitted fill area which exceeds 3 to 1. Superintendent Lane explained that this resulted from construction of an external earthen berm against which refuse was filled. The external slope was to be corrected prior to CDM's next inspection.

In conjunction with your superceding order of conditions regarding lowering of the groundwater, three locations for groundwater quality monitoring wells were identified during this site visit. A plan specifying these locations has been transmitted to you under separate cover. If you have any question with regard to this inspection, please call.

Very truly yours,

CAMP DRESSER & McKEE INC.

Ira D. Cohen

Ira D. Cohen

IDC/cam

cc: Mr. Wallace Lane, DPW

ANTHONY D. CORTESE, Sc.D.
Commissioner
727-5194

The Commonwealth of Massachusetts
Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region
323 New Boston Street, Woburn, MA 01801

September 22, 1982

Mr. Clarence D. Beatty, Associate
Camp Dresser & McKee Inc.
One Center Plaza
Boston, Massachusetts 02108

RE: HAMILTON-Solid Wastes

Dear Mr. Beatty:

The Metropolitan Boston/Northeast Region of the Department of Environmental Quality Engineering is in receipt of your letter dated August 23, 1982 and the preliminary plans regarding the proposed design concept for the expansion of the Town of Hamilton landfill.

The design concept includes provisions for capping the existing fill with an impermeable cover ($K=10^{-5}$ cm/sec) and placing an impermeable liner ($K=10^{-7}$ cm/sec) with leachate collection pipes in the new expansion area, which consists of two (2) acres. All leachate collected will be pumped from the storage tank and transported to a wastewater treatment plant for disposal.

Test Pits were conducted on June 22 and 23, 1982. The groundwater data collected from these tests, in addition to groundwater elevations taken in July and August of 1982, have been used to establish groundwater elevations for the design base elevation for the new expansion area. A minimum distance of five feet from the highest groundwater elevation to the design base elevation has been selected.

A groundwater monitoring program will also be included in the site operation. This will include the installation of one monitoring well in addition to the two existing wells. The locations of the two existing wells and the proposed location of the new well are shown on the plans.

The Department hereby approves this conceptual proposal for expansion and operation of this landfill to service the Town of Hamilton for the disposal of municipal solid wastes with the following understandings:

1. The facility shall be operated in strict conformance with the provisions of 310 CMR 19:00 "The Disposal of Solid Wastes by Sanitary Landfill", future approved plans, and any other conditions imposed by the Department.

2. Further details regarding the final disposal of leachate, supervision of the landfill operation, groundwater sampling and landfill inspections shall be included in the final design.

If you have any questions relative to this matter, please contact Mr. Vartkes Karaian or a member of this staff at the above address or at 935-2160.

Very truly yours,

William J. St. Hilaire

William J. St. Hilaire, P.E.
Regional Environmental Engineer

WJSH/JM/lmm
cc: Hamilton Board of Health, Town Hall, Hamilton, Mass. 01982
Board of Public Works, Town Hall, Hamilton, Mass. 01982
Board of Selectmen, Town Hall, Hamilton, Mass. 01982

TOWN OF HAMILTON
BOARD OF PUBLIC WORKS
HAMILTON, MASS. 01936

April 20, 1983

The Commonwealth of Massachusetts
Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region
323 New Boston Street
Woburn, Massachusetts 01801

Dear Sir:

In answer to your letter of April 12, 1983 regarding violation found at our Sanitary Landfill in Hamilton, Massachusetts, the Board of Public Workshas taken steps to rectify the violations caused by winter storms.

The Board has also submitted a request to close the landfill as of July 1, 1983 to be brought up at our annual Town Meeting on May 16, 1983. We shall notify you as to whatever the outcome of that meeting may be.

Thank you for your kind attention in this matter.

Very truly yours,

George H. Ricker

Geroge H. Ricker, Chairman

GR/mp

ANTHONY D. CORTESE, Sc.D.
Commissioner
727-5194

The Commonwealth of Massachusetts

Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region
323 New Boston Street, Woburn, MA 01801

935-2160

May14, 1984

Board of Public Works
Town Hall
Hamilton, MA. 01936

RE: HAMILTON- Solid Wastes
Violation Notice

Gentlemen:

On April 17, 1984, a representative from the Metropolitan Boston/Northeast Regional Office of the Department of Environmental Quality Engineering conducted an inspection at the Hamilton refuse disposal facility. It appeared that the landfill facility has been recently abandoned without being properly closed in accordance with approved plans, leachate was emanating from the fill and discharging into wetlands, inadequate measures were taken to restrict dumping at the site, and an unapproved type of transfer station operation had been established without proper prior plan approval.

In addition, the Department has been informed verbally of the desire of the Town to operate a facility for the disposal of brush and limited composting at this location.

The Department requests that the Town of Hamilton submit a statement in writing within ten(10) days of receipt of this Violation Notice of the actions they will take to properly close this landfill facility in accordance with the Departments Regulations; and to establish full compliance of this facility and location with the Departments regulations and other applicable laws and ordinances, particularly with regard to an approved and acceptable transfer station and other uses for this location.

If you have any questions relative to this matter, contact Mr. John Maddox or Mr. Vartkes Karain at the above address or telephone number.

Very truly yours,

Richard J. Chalpin

Richard J. Chalpin,
Deputy Regional Environmental Engineer

RJC/vk/cd

cc: Board of Health
Board of Selectmen

ANTHONY D. CORTESE, Sc.D.
Commissioner
727-5194

The Commonwealth of Massachusetts

Department of Environmental Quality Engineering
Metropolitan Boston - Northeast Region
323 New Boston Street, Woburn, MA 01801

935-2160

September 14, 1984

Board of Public Works
Town Hall
Hamilton, MA 01936

RE: HAMILTON - Solid Wastes

Attention: Mr. Walter H. Leszczynski, Chairman

Gentlemen:

As you are aware, representatives of the Metropolitan Boston/Northeast Regional Office of the Department of Environmental Quality Engineering met with several officials, representing various Boards in the Town of Hamilton, at the municipal refuse disposal facility site off Chebacco Road on August 16, 1984 to discuss the current practices and future plans for solid wastes handling in the Town of Hamilton.

The meeting and site investigation disclosed that considerable work had been completed toward closing and capping the landfill; however, additional final cover is needed, particularly along the area of the side slopes. In addition, the entire area needs to be loamed and seeded, with special attention given to regrading in certain areas to prevent future problems with ponding and erosion. The groundwater monitoring program should be continued with sampling and testing from the existing monitoring wells.

The matter of the unapproved type of transfer station operation currently in use and the contemplated proposal to establish and operate a facility for the disposal of brush and stumps and the composting of leaves at this location was also discussed. The Town is reminded of the provisions of Section 150A of Chapter 111 of the Massachusetts General Laws which requires proper assignment by the local Board of Health and plan approval by this Department for such operations. This would require either a modification of the current assignment or a new assignment, depending upon the site location and the current assignment provisions. In any instance, it would also require the submittal of detailed engineering plans to this Department for approval. All plans would have to be developed and operations conducted in conformance with all State and local ordinances, regulations and approved environmental engineering practices.

Current practices in the Town of Hamilton provide for weekly refuse collection with direct haul to an out-of-town refuse disposal facility, in addition to twice per year heavy trash collections. This procedure appears to adequately address the Town's solid waste collection and disposal needs. Since the establishment of an approved transfer station, stump/brush landfill, leaf composting facility, or any other type facility would require the expenditure of certain additional funds, this Department is of the opinion that the Town of Hamilton should review carefully the

various alternatives available to them and evaluate the economics of such proposals before making any firm decisions or commitments in this regard.

Enclosed for your information are copies of Section 150A of Chapter 111 of the Massachusetts General Laws, 310 CMR 19.00 "The Disposal of Solid Wastes by Sanitary Landfill", and 310 CMR 18.00 "Installation, Operation, and Maintenance of Solid Waste Transfer Stations."

The Department requests that it be kept informed of actions taken relative to this matter. If you have any further questions or wish to confer further relative to this matter, please contact Mr. Vartkes Karaian or Mr. John Maddox at the above address or telephone number.

Very truly yours,

Richard J. Chalpin

Richard J. Chalpin
Acting Regional Environmental Engineer

RJC/VK/ac
cc: Board of Selectmen
Town Hall
Hamilton, MA 01936

Board of Health
Town Hall
Hamilton, MA 01936

DEQE
Division of Hazardous Waste
One Winter Street
Boston, MA 02108

Attention: William Cass/Fifi Nessen

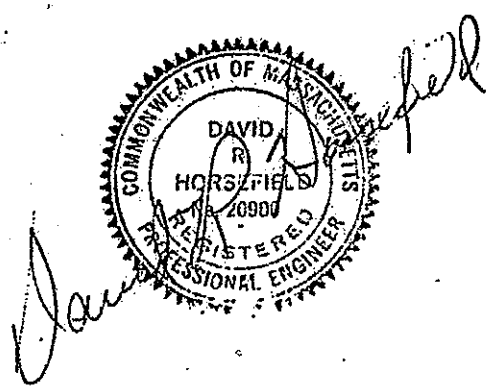
APPENDIX C

1976 Closure Plans and Report Narrative for Area 1 Final Cover

TOWN OF HAMILTON
MASSACHUSETTS

SANITARY LANDFILL FEASIBILITY STUDY

July, 1976



CAMP DRESSER & McKEE Inc.
Environmental Engineers
Boston, Massachusetts

CHAPTER 4

INTERIM SITE DEVELOPMENT & OPERATION

INITIAL CONSTRUCTION

General

To provide continued uninterrupted solid waste disposal for the Town of Hamilton, we recommend that the town develop approximately 7.3 acres of the Chebacco Road site in two phases for an interim sanitary landfill as shown on Figs. 4-1 and 4-2, appended. The construction of this interim operation would include final grading, cover, and sealing of the current working area, and the clearing, excavation and base preparation for the proposed operation, as shown on the plan. As discussed in Chapter 3, the placement of refuse during the interim and any subsequent landfilling operations should take place to the east of the groundwater divide. This should help prevent any further degradation of the quality of groundwater flowing towards Gravelly Pond. A system of permanent surface water drainage ditches should also be constructed to direct surface runoff off the fill and around the site.

Life of the Site

After several discussions with the Massachusetts DEQE, it was determined that an interim sanitary landfill operation for the town should last about two years. This should provide the town with sufficient time to decide upon its future direction for solid waste disposal and to implement the plan. We estimate that the proposed interim landfill discussed below will last about three to four years for use by the Town of Hamilton.

Sealing of Existing Landfill Area

After the landfill operation is moved to the proposed interim area the existing landfill should be sealed and closed according to the DEQE sanitary landfill regulations. The side slopes should be compacted and

* AREA 1

graded to a slope not exceeding about 4:1 (horizontal to vertical) and the top slope graded with a minimum slope of 2 percent to prevent ponding of water, as shown on Fig. 4-1. During construction of the interim area, refuse can be used to bring the area to the grades shown in the existing landfill area. A relatively impervious cover material, such as silts and sandy silts, should be placed over the entire area and compacted to a minimum depth of 12 to 18 inches followed by loam, spread and compacted to a depth of 6 to 12 inches. The total depth of final cover must be at least 24 inches and should be used to bring the area to the grades shown on Fig. 4-1. The area should then be graded and planted with trees and shrubs.

*AREA 1

Permanent drainage ditches should also be constructed and maintained around the area as shown in Fig. 4-1 and discussed later in this chapter.

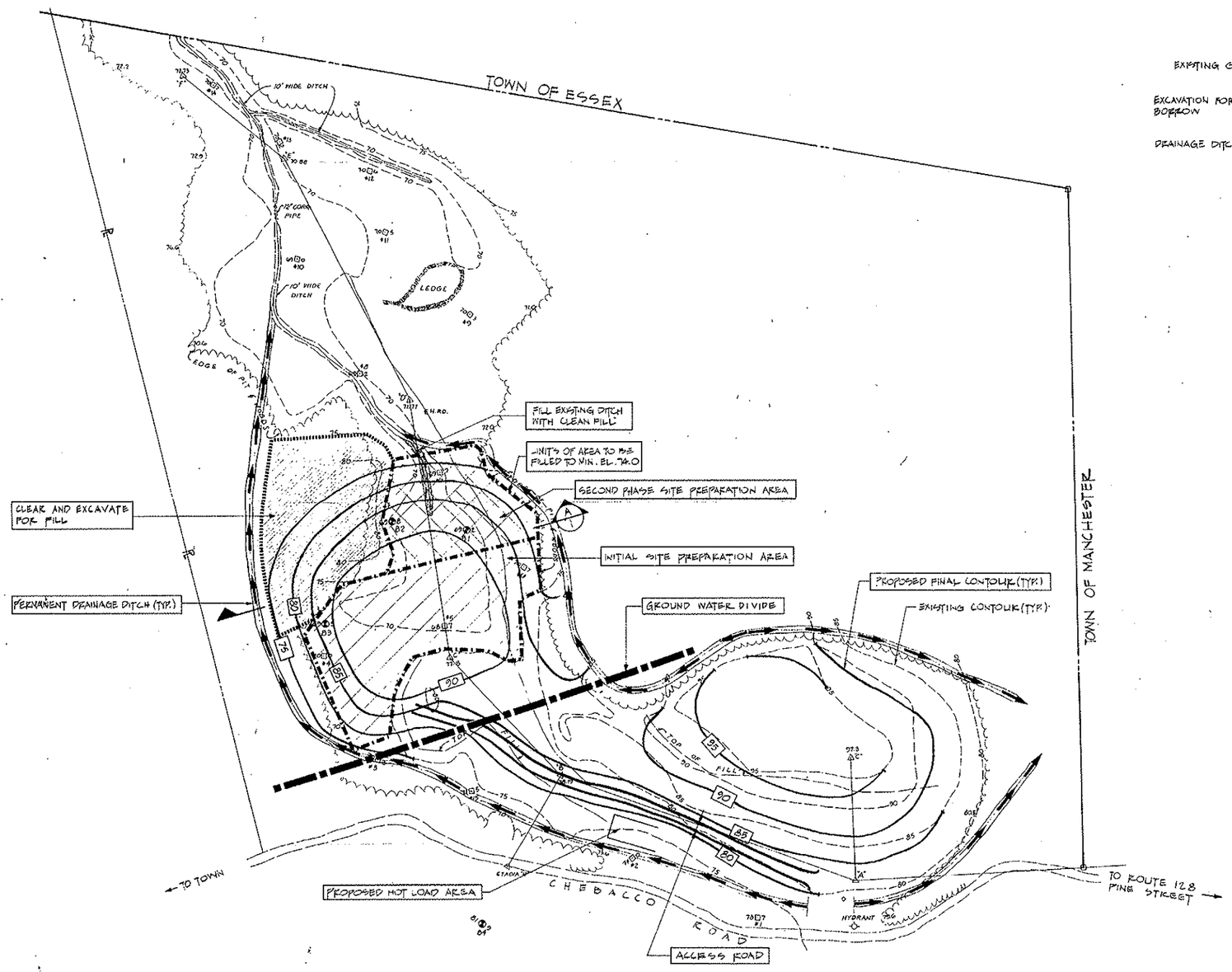
Base Preparation

DEQE regulations require that no refuse be placed for disposal within 4 feet of the high groundwater table. Most of the area proposed to be filled for the interim landfill operation is less than 4 feet above groundwater. Therefore, this area must be filled with clean, pervious materials to at least elevation 74.0 as shown in Fig. 4-1, and sloped at 290 as shown in the cross section. In order to minimize the time required to implement operations in this area and to reduce costs, we recommend that the base preparation for the interim area be constructed in two phases as shown on the plans. Approximately 12,000 cubic yards of material will be needed to prepare the base for the first phase of the interim operation. This material is all available on-site along the northern property line of the site. A property line survey should be conducted to establish the property line and more specific limits of excavation. This area also must be cleared and excavated for extension of a surface water drainage ditch along the northern boundary as discussed in the following section. The remainder of the necessary fill to complete the second phase base preparation must be purchased off-site and should have the same soils characteristics (sands and silty sands) as the material available on-site. The second phase construction will be required about one year after the first phase is begun. A permit from the Hamilton Conservation Committee will be required before proceeding with this work.

Drainage Facilities

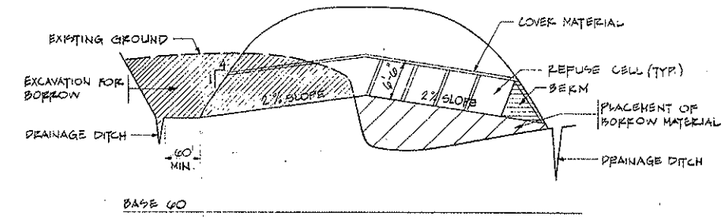
The proper design of facilities to handle surface drainage in the landfill area is of considerable importance in the development and maintenance of a nuisance-free disposal operation.

A portion of the existing 10' wide drainage ditch, as shown on the plan, now draining the excavated portion of the site, must be filled with clean fill during the base preparation. A new, permanent drainage ditch should be



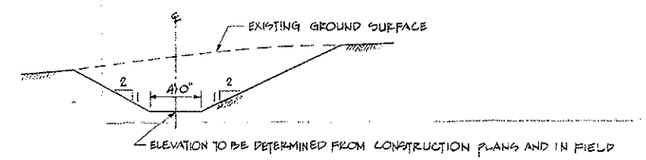
CONSTRUCTION PLAN AND FINAL CONTOURS

SCALE 1" = 100'



SECTION A/1

SCALE: HOR. 1" = 100'
VERT. 1" = 10'



PERMANENT DRAINAGE DITCH TYPICAL CROSS SECTION

N.T.S.

NOTES:

1. PREPARED FROM PLAN BY ROBERT E. ANDERSON, INC. OF NORTH READING MASS., MAY, 1976.
2. ASSUMED DATUM - HYDRANT SPINDLE - 82.3.
3. PROPERTY LINE SURVEY FROM ALONZO B. REED PLAN - DECEMBER, 1970.
4. SUBSURFACE INFORMATION BY DONALD E. REED - MAY, 1976.

● BORING LOCATION

⊡ TEST PIT LOCATION

Approved by:	Date	Name
Structural		
Electrical		
HVAC		
Project Engineer		
Project Manager		

ANDREW T. JOHNSON CO., INC. 2574

Date	Ch'k'd.	Revision

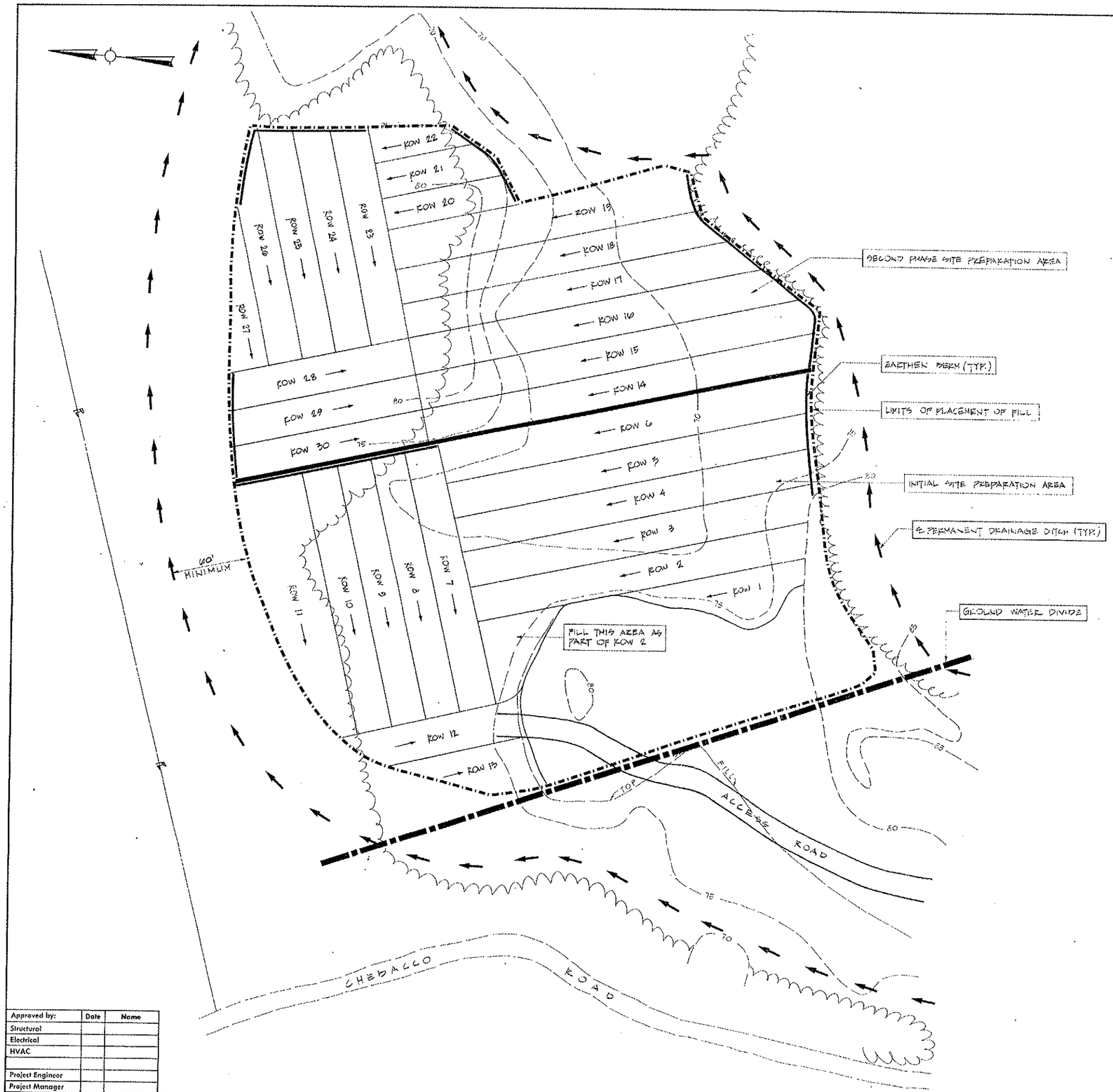
Designed by: I.P.C.
Drawn by: D.F.S.
Checked by: C.H.
Approved by: C.D.B.
Date: JULY, 1976
Scale: AS SHOWN

TOWN OF HAMILTON, MASSACHUSETTS
CHEBACCO ROAD SANITARY LANDFILL

CONSTRUCTION PLAN AND FINAL CONTOURS

CAMP DRESSER & McKEE Inc.
Consulting Engineers
Boston, Mass.

SHEET NO.
FIG. 4-1
644-26409



GENERAL NOTES - SEQUENCE OF OPERATION

1. PREPARE INITIAL SITE PREPARATION AREA FILL TO AT ..EAST ELEVATION 74.0. SEE CROSS SECTION ON FIG. 4-1.
2. CONSTRUCT DRAINAGE DITCHES.
3. CONSTRUCT ACCESS ROADWAY TO INITIAL LANDFILL AREA
4. BEGIN LANDFILLING WITH ROW 1. ARROWS INDICATE DIRECTION OF FILL. IN ROWS REQUIRING EARTHERN BERM, THIS SHOULD BE CONSTRUCTED PRIOR TO FILLING ROW. ROWS SHOULD BE ABOUT 30' WIDE AND SIX FEET HIGH.
5. SEAL EXISTING LANDFILL AREA.
6. PRIOR TO COMPLETING ROW 13, PREPARE SECOND PHASE SITE PREPARATION AREA.
7. EXTEND ACCESS ROAD INTO SECOND PHASE AREA.
8. UPON COMPLETION OF ROW 30, BEGIN SECOND LIFT IN SIMILAR FASHION TO FIRST LIFT.

NOTES:

1. PREPARED FROM PLAN BY ROBERT E. ANDERSON, INC. OF NORTH READING MASS., MAY, 1976.
2. ASSUMED DATUM - HYDRANT SPINDLE - 82.5
3. PROPERTY LINE SURVEY FROM ALONZO B. REED PLAN - DECEMBER, 1970.

Approved by:	Date	Name
Structural		
Electrical		
HVAC		
Project Engineer		
Project Manager		

ANDREW T. JOHNSON CO., INC. 2495

Date	Ch'k'd.	Revision

Designed by: E.H.
Drawn by: D.P.S.
Checked by: L.J.S.
Approved by: C.P.B.
Date: JULY, 1976
Scale: 1" = 80'

TOWN OF HAMILTON, MASSACHUSETTS
CHEBACCO ROAD SANITARY LANDFILL

SEQUENCE OF OPERATION

CAMP DRESSER & McKEE Inc.
Consulting Engineers
Boston, Mass.

SHEET NO.
FIG. 4-2
644-26410

APPENDIX D

Boring Logs, Groundwater Monitoring Well Construction Logs and Typical Piezometer Installation Detail

FIELD TEST BORING LOG

SHEET 1-1

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, ~55 degrees F	**BORING NO:** MW-1 **PROJECT NO:** 2006054.02

Ground Elevation: 60.33 NGVD 1929
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 No.	Pen/Rec	Sample Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/20	5-7	1/12" - 1/12"	**PEAT** ↓	S-1: 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** ↓ 15'	S-2 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT	TYPE	HW	SS	
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>50	HARD				

FIELD TEST BORING LOG

SHEET 1-1

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	**BORING NO:** MW-2 **PROJECT NO:** 2006054.02

Ground Elevation: 66.14 NGVD 1929
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	4' BGS	NA	From observations of casing

Depth (ft.)	PID Reading (ppm)	Sample No.	Pen/Rec	Sample Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/18	5-7	4-6-6-7	**SILT/ SAND** ↓ ~7'	S-1: Sandy SILT - Slightly plastic silt, 20-35% very fine sand, no gravel, m. stiff, saturated, orangish brown, uniform.
						BOULDERS SOIL ↓	Refusal at 7' BGS so began coring. Cored through layers of rock, boulders and soil.
10	-	S-2	24/3	10-12	8-10-14-26	~10' **BOULDERS** ↓ 13'	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.
						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.

Depth Range	Time (min.)
7-8	3
8-9	3
9-10	2

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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=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 1-1

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-3 **PROJECT NO:** **2006054.02**

Ground Elevation: 67.7 NGVD 1929
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	15/13	5-6'3"	13-20-60/3"	**GRAVEL/ SAND** ↓ ~6'	S-1: 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. S-1B: Bottom 3" - Sandy SILT - Slightly plastic silt, 20-35% fine sand, no gravel, dense, orangish-gray. Refusal at 6'3" BGS. Was able to drive and wash through boulders.
						SILT/ SAND ↓ **BOULDERS**	
10	-	S-2	24/6	10-12	12-16-14-20	~12' **ROCK** ↓ 17'	S-2 Gravelly SAND - Coarse to fine well graded sand, <10% fines, 20-35% gravel, dense, saturated, brown, bouldery material between 6-12' BGS. 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.
						Bottom of Boring at 17' BGS	RQD = 27/48=56% (Fair)

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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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: 67.22 NGVD 1929
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 No.	Pen/Rec	Sample Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/18	5-7	5-4-5-7	SAND ↓	S-1: 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		S-2 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		S-3 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		S-4 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 ↓	S-5 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		S-6 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		S-7 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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:** Partly Cloudy, ~50 degrees F	**BORING NO:** MW-4 **PROJECT NO:** 2006054.02

Ground Elevation: 67.22 NGVD 1929
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
						~25' CLAY / SAND ↓ 38' ROCK ↓ 43'	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. 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	RQD=7/18=39% (Poor)

Depth Range	Time (min)
38-39	6
39-40	5
40-41	6
41-42	6
42-43	5

Notes:

Installed 2" diameter monitoring wells (MW-4S/D) in 4" borehole	MW-4D	MW-4S
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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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: 70.95 NGVD 1929
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 No.	Pen/Rec	Sample Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/16	5-7	38-55-40-36	SAND/ GRAVEL ↓ ~8'	S-1: 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.
						SAND (?) ↓ ~10'	
10	-	S-2	24/0	10-12	6-5-5-6		S-2 No Recovery. Sent SS down again to try and retrieve a sample and had no recovery again.
						SAND ↓	
15	-	S-3	24/8	15-17	6-5-6-6		S-3 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		S-4 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'	S-5 SAND - Very fine uniform sand, 10-20% non-plastic fines, no gravel, m. dense, saturated, gray with some orange/brown staining.
						ROCK ↓	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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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:** Partly cloudy, Light rain, ~50 degrees F	**BORING NO:** MW-5 **PROJECT NO:** 2006054.02

Ground Elevation: 70.95 NGVD 1929
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
						~27' ROCK ↓ 34'	Refusal at 27' BGS 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	RQD = 70/74 = 95% (Excellent)

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

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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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:** Raining, ~45 degrees F	**BORING NO:** MW-6 **PROJECT NO:** 2006054.02

Ground Elevation: 71.56 NGVD 1929
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata		Visual Indentification of Soil Sample
5	-	S-1	24/14	5-7	10-8-10-10	SAND ↓	S-1:	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 ↓	S-2	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		S-3	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		S-4	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 ↓	S-5	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 ↓	S-6	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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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: 71.56 NGVD 1929
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
25	-	S-7	24/7	25-27	5-6-5-6	**SILT/ SAND** ↓	S-7: 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		S-8 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	**~37'** **ROCK** ↓	S-9 Silty SAND - Similar to S-8, uniform, orangish brown.
						44' Bottom of Boring at 44' BGS	Rock was encountered at 37' BGS. Were able to drive casing to approximately 38.5' BGS (~1.5' into rock), then cored 5' into bedrock.

Depth Range	Time (min)
39-40	5
40-41	9
41-42	9
42-43	9
43-44	8

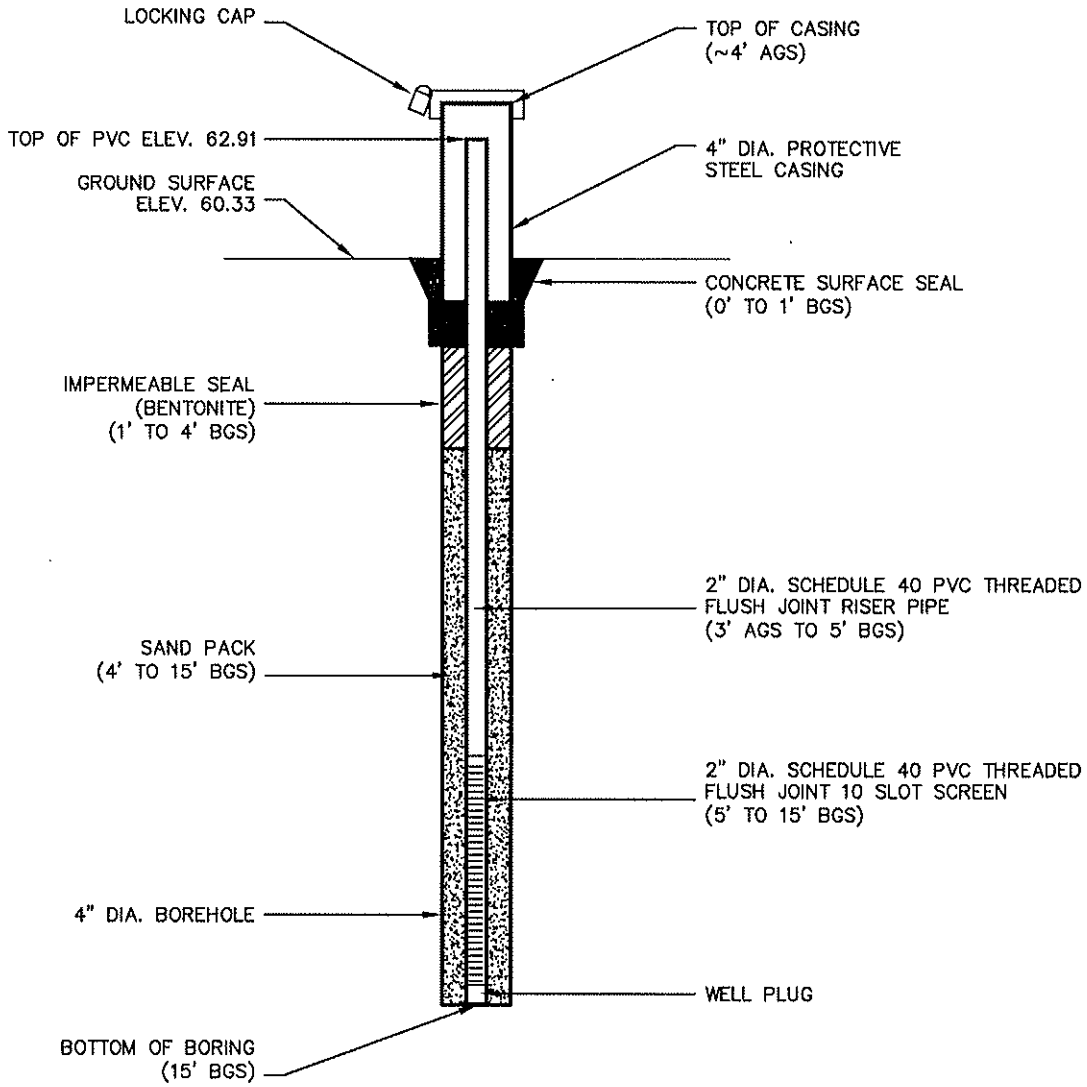
RQD = 21/36 = 58% (Fair)

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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HSA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AGS=Above Ground Surface	And 35 to 50%	30-50	DENSE	8-15	STIFF	HAMMER WT (LB)	140	140	
FJ=Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>50	HARD				

PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-1	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/17/06 COMPLETE DATE: 11/17/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	
GROUNDWATER LEVEL: ~2 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/17/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-1

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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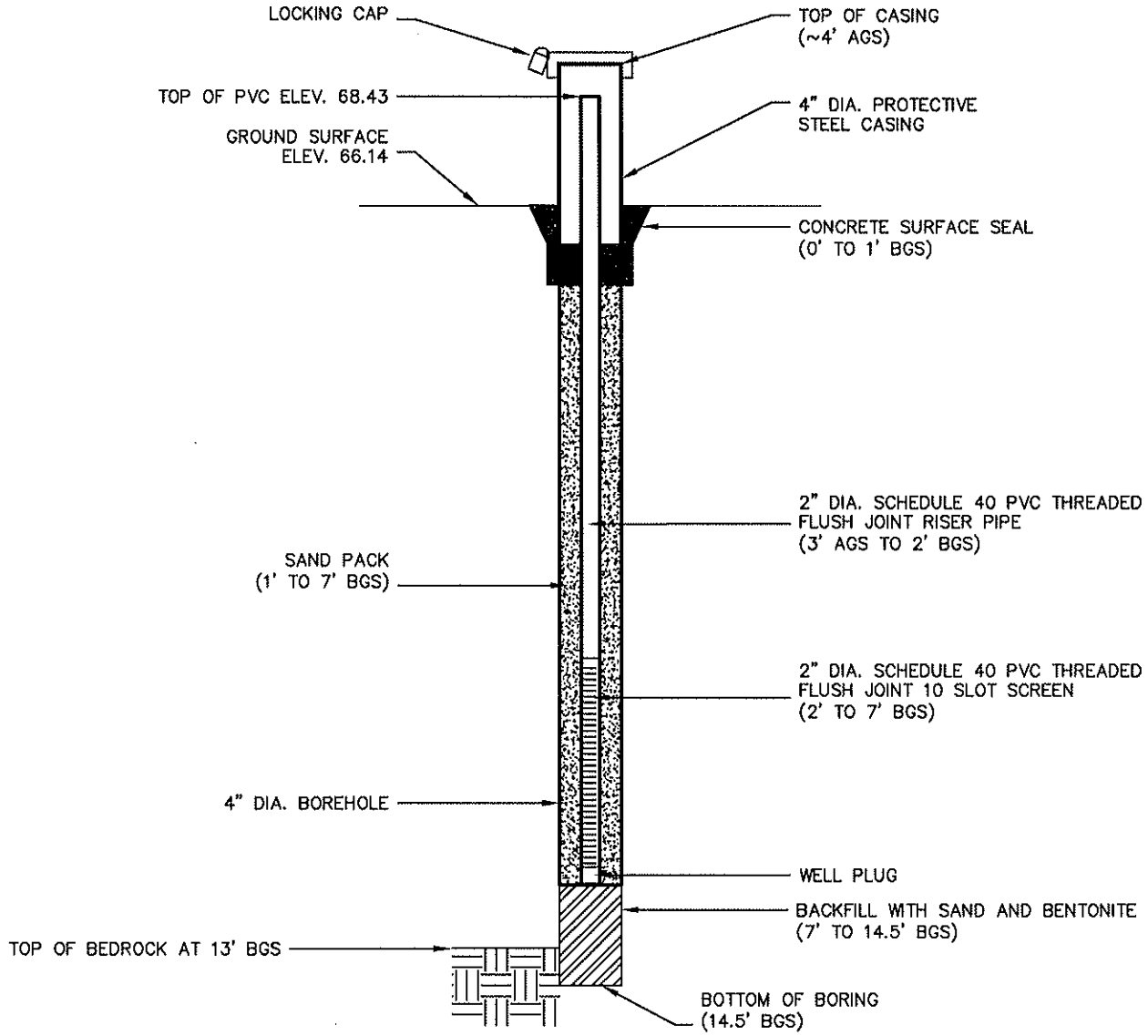
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-2	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/17/06 COMPLETE DATE: 11/17/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	

GROUNDWATER LEVEL: ~4 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/17/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-2

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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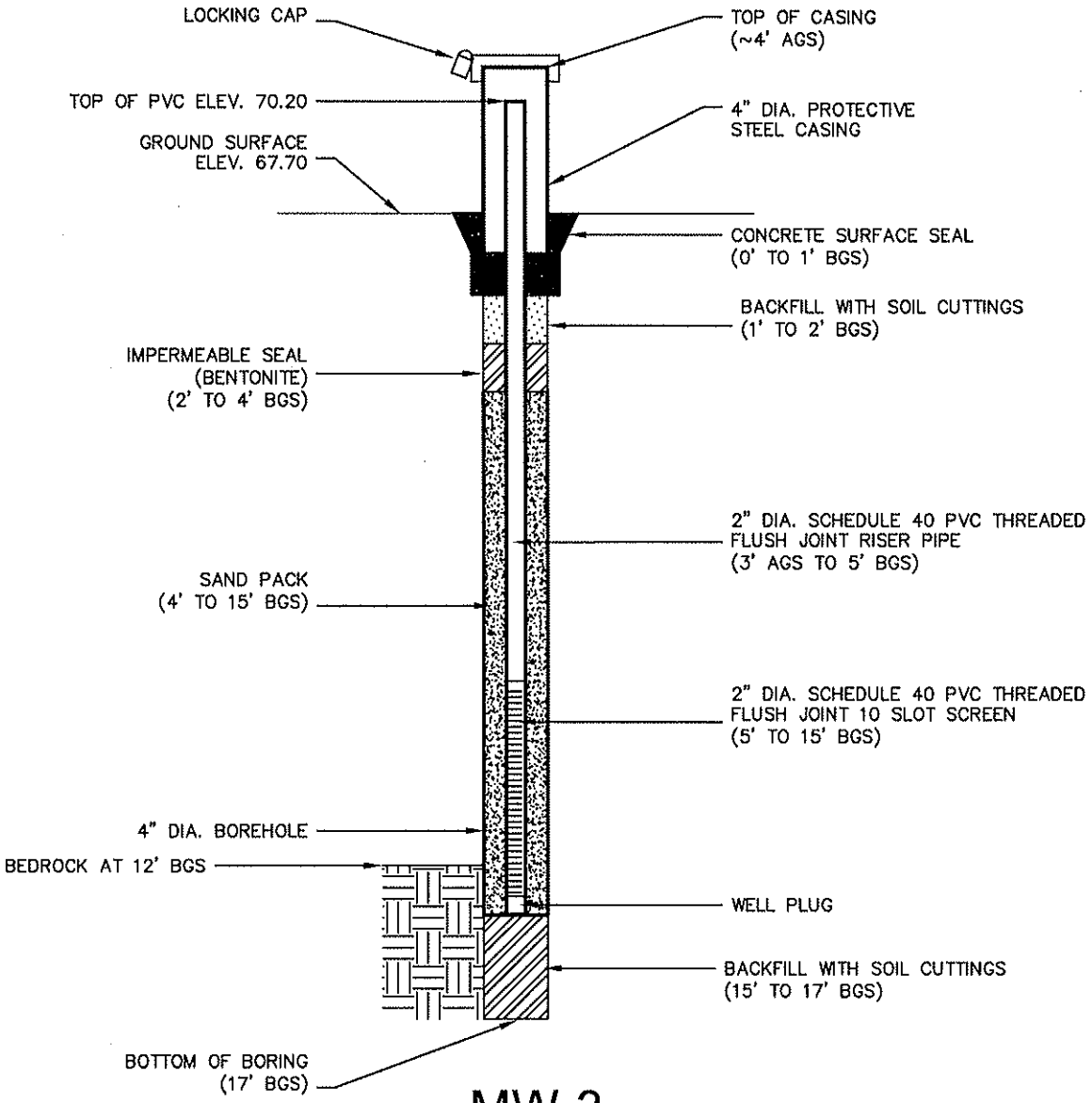
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-3	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/16/06 COMPLETE DATE: 11/20/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	
GROUNDWATER LEVEL: ~4 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/20/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-3

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
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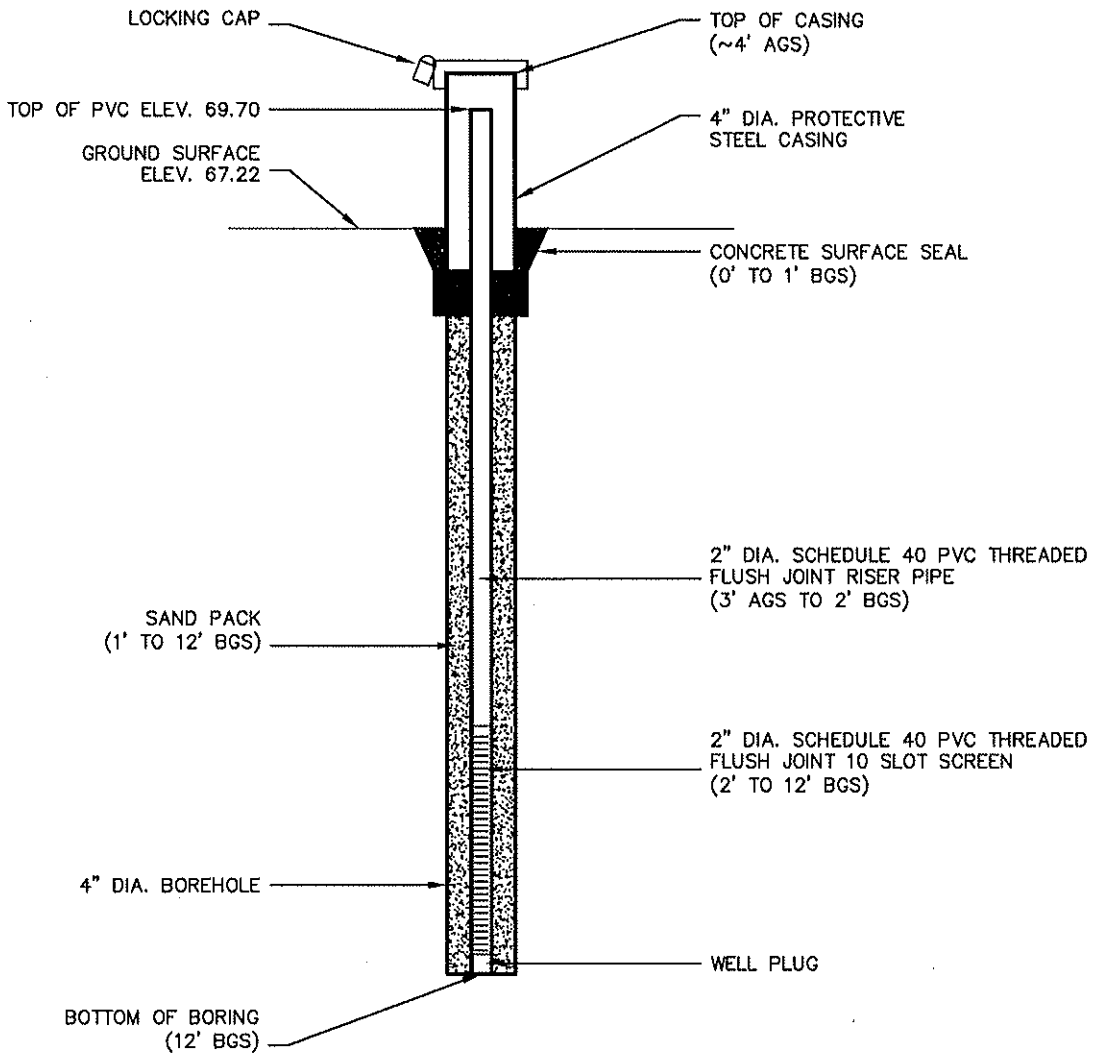
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-4S	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/15/06 COMPLETE DATE: 11/16/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	
GROUNDWATER LEVEL: ~4 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/16/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-4S

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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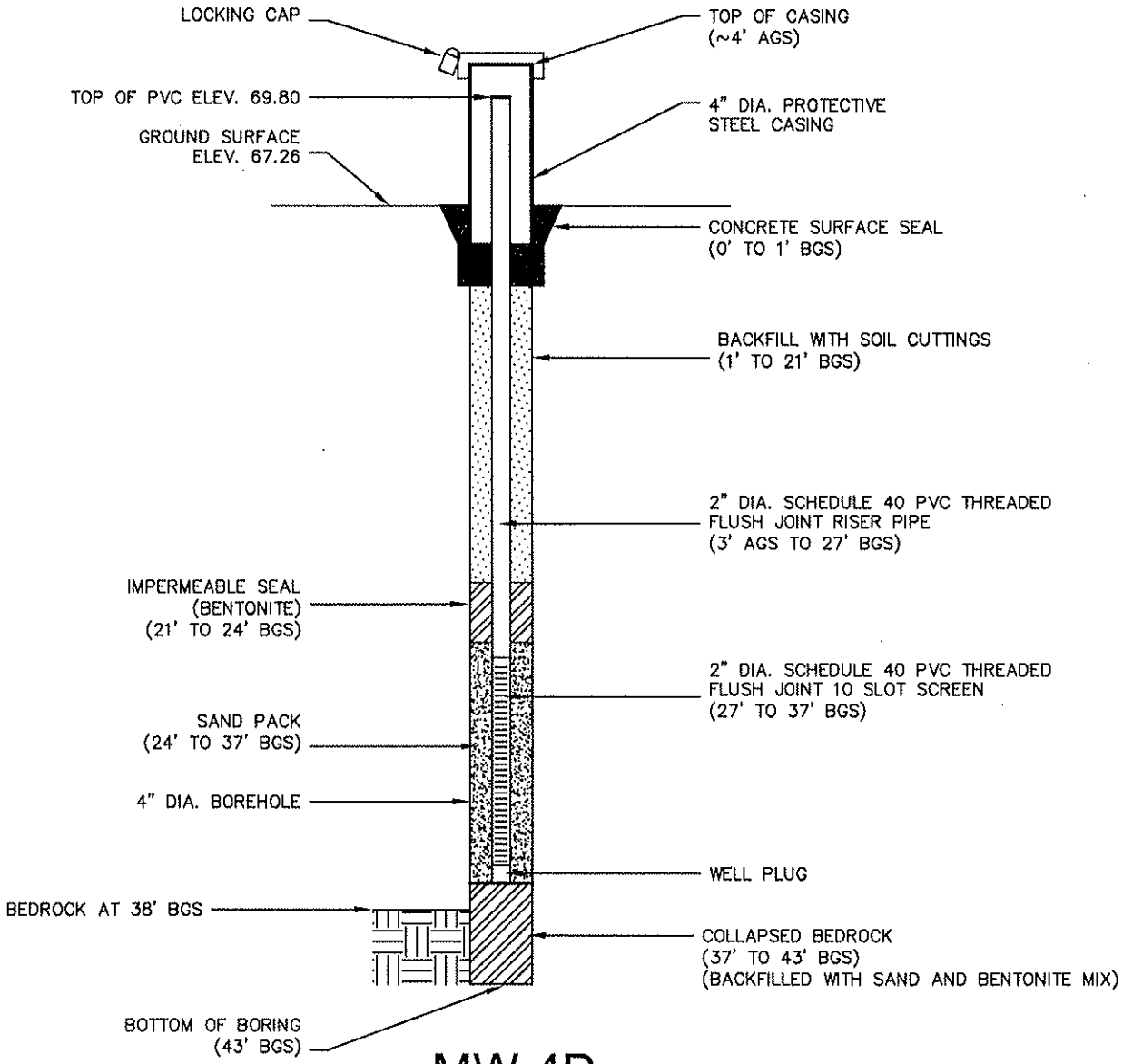
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-4D	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/15/06 COMPLETE DATE: 11/16/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	

GROUNDWATER LEVEL: ~4 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/16/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-4D

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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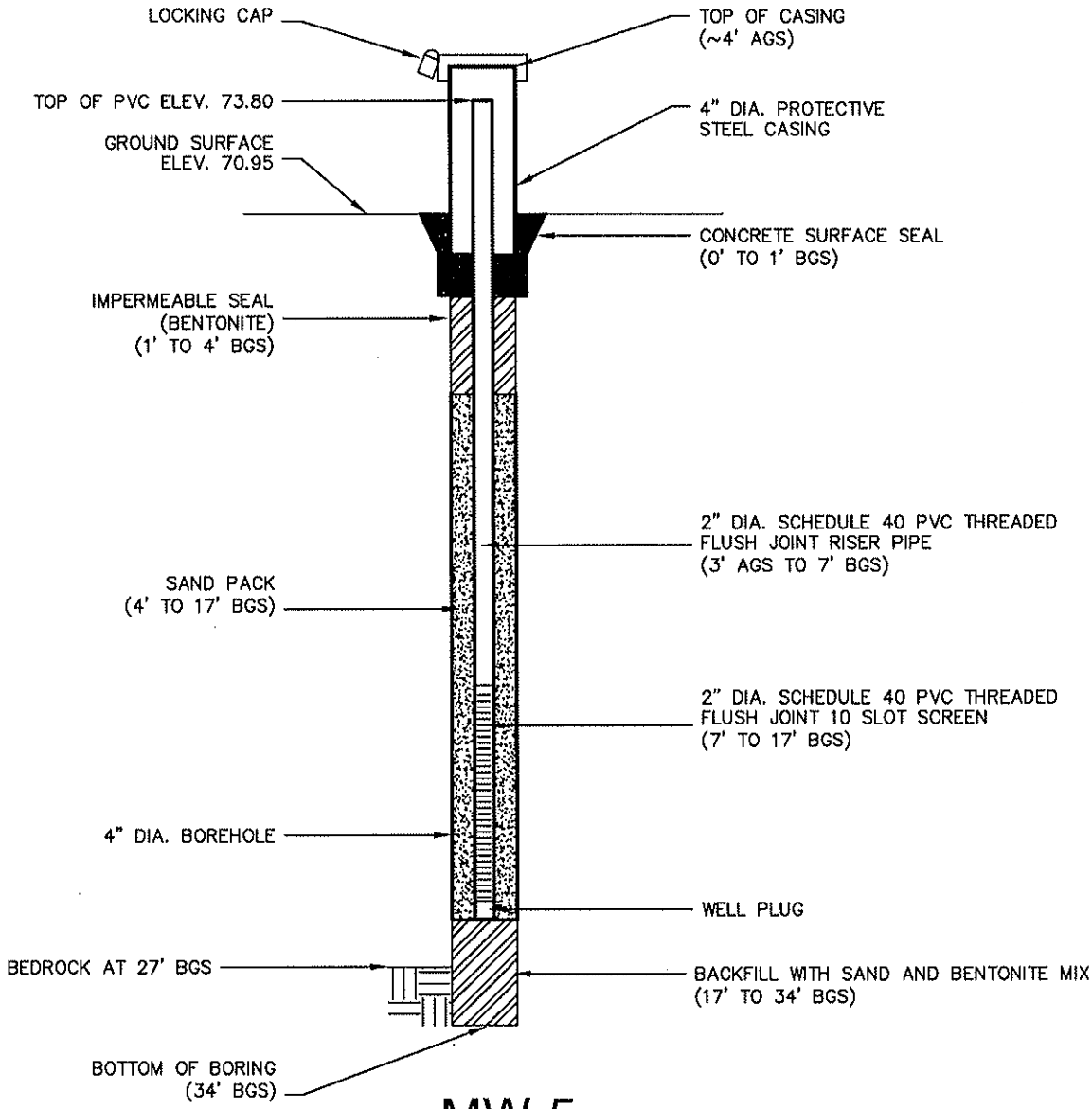
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-5	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/13/06 COMPLETE DATE: 11/14/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	

GROUNDWATER LEVEL: ~10 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/14/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-5

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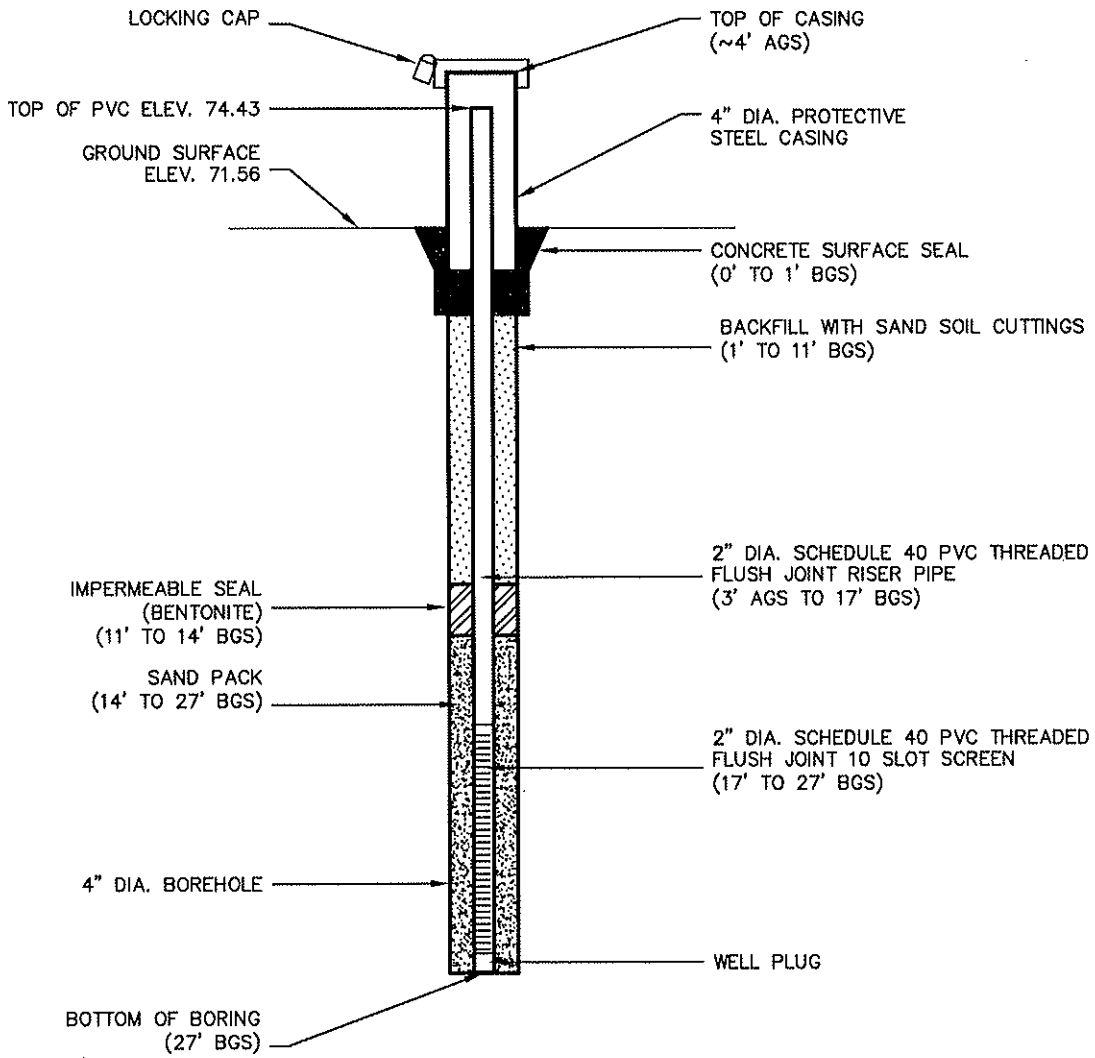
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-6S	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/14/06 COMPLETE DATE: 11/15/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	
GROUNDWATER LEVEL: ~18.5 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/15/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-6S

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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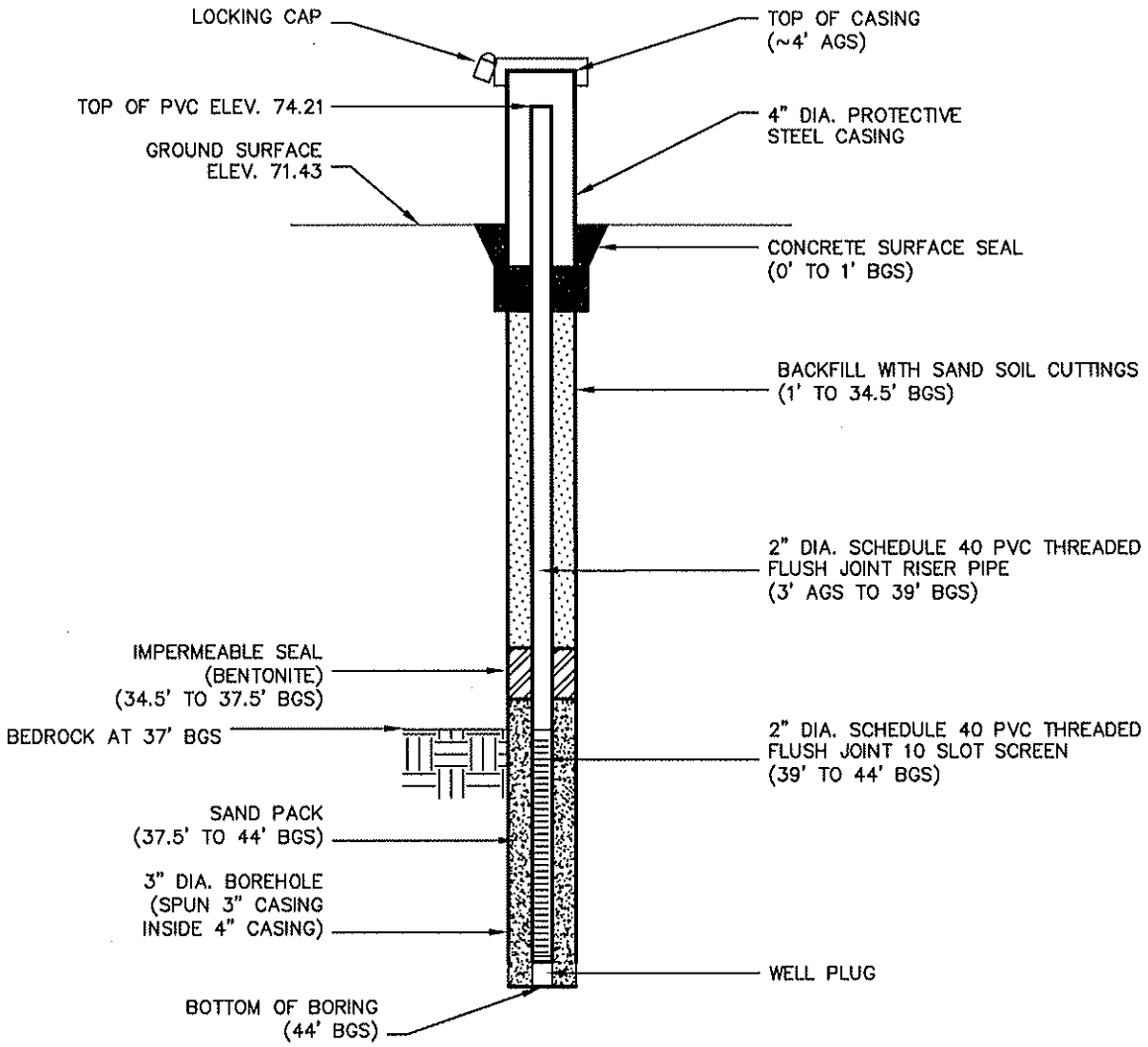
PROJECT: HAMILTON SANITARY LANDFILL	WELL ID: MW-6D	PROJECT NO.: 2006054.02-A
CONTRACTOR: NA	DRILLER: NH BORING	START DATE: 11/14/06 COMPLETE DATE: 11/15/06
DRILLIING METHOD: CASING (DRIVE/WASH)	SEA GEOLOGIST/ENGINEER: ALEX DUBANOWITZ	
GROUNDWATER LEVEL: ~18.5 FEET BGS		DEVELOPMENT METHOD: OVERPUMPING/SURGING
DATE: 11/15/06	TIME:	EQUIPMENT DECONTAMINATION: NA
METHOD: FROM BOREHOLE	DATUM: NGVD 1929	SOIL SAMPLES TAKEN: NO



MW-6D

GW MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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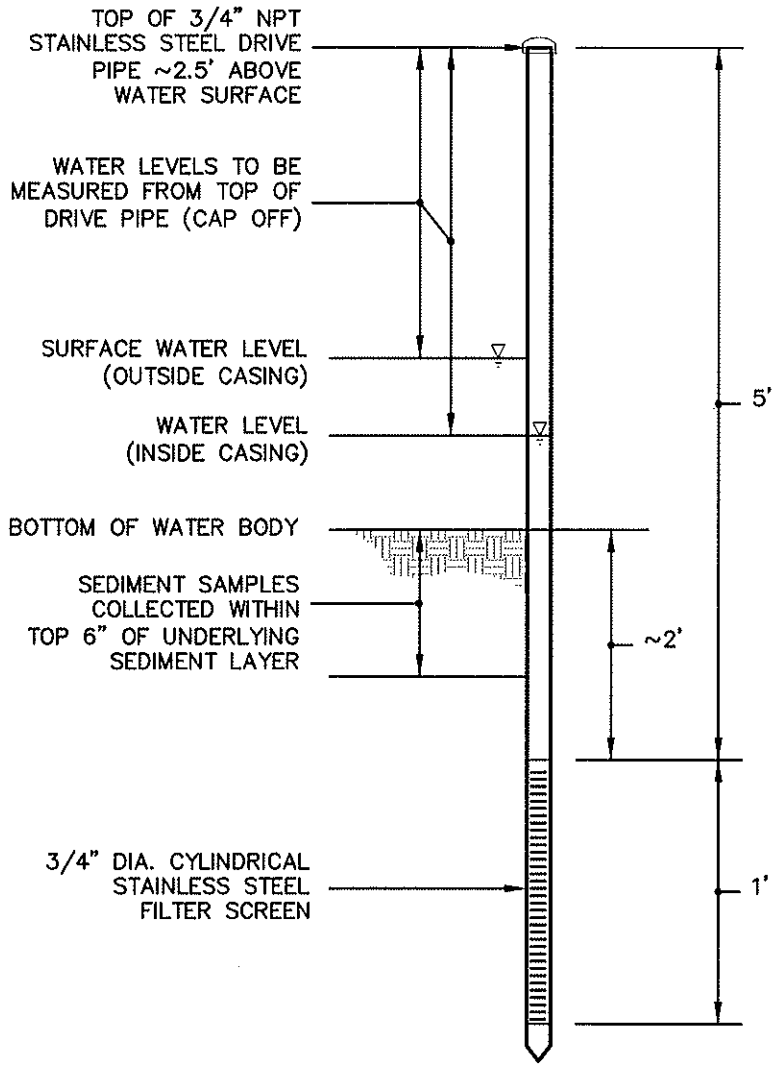

NOTES:

1. INSTALLED MODEL 615N STAINLESS STEEL DRIVE POINT PIEZOMETERS FROM SOLINST.
2. PIEZOMETERS WERE INSTALLED WITH DIRECT PUSH TECHNOLOGY USING A MANUAL SLIDE HAMMER.
3. PIEZOMETERS WERE INSTALLED FOR HYDRAULIC HEAD MEASUREMENTS.

TYPICAL PIEZOMETER INSTALLATION DETAIL

PZ-1, 2 & 3

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

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APPENDIX E

Test Pit Logs

Project: Hamilton Sanitary Landfill Location: Hamilton, Massachusetts	Date Start: 9/17/07 Date Finish: 9/17/07 Project No: 2006054.06-A	Test Pit No. TP-1

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← WOODS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
2'		12' — 48'; TOE OF SLOPE; STAKE; ROOTED TOPSOIL W/ LEAF COVER, F-M SAND, L. BROWN, 0-10% F. GRAVEL; ≈2.5'	E	A	1
1'				A	
0'	ROOTED TOPSOIL				
1'					
2'	F-M SAND	F-M SAND, 10-20% FINE GRAVEL, 10-20% COARSE SAND 10-20% NP FINES, L. BROWN-TAN			
3'		BOTTOM OF EXCAVATION; MSW- PLASTIC BAGS, BOTTLES, CANS, BROKEN GLASS, PAPER (50-75% WASTE)			
4'					
5'					
6'					
7'					
8'					
9'					
10'					

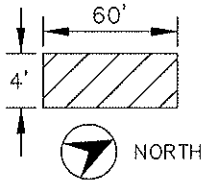
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

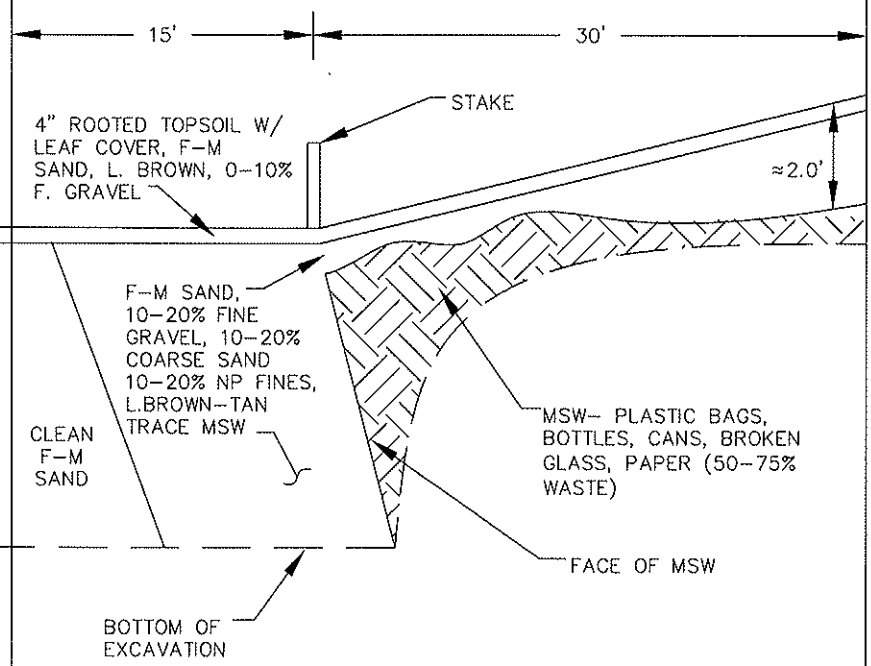
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Information on this log is a compilation of subsurface conditions and rock or soil classifications obtained from the field as well as laboratory testing of samples. Strata have been interpreted by commonly accepted procedures. The stratum lines may be transitional and approximate. Water level measurements have been made in the open test pits at the time and location indicated, and may vary with time, geologic condition or construction activity.

Project:	Date Start: 9/17/07	Test Pit No.
Location: Hamilton, Massachusetts	Date Finish: 9/17/07	TP-2
	Project No: 2006054.06-A	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

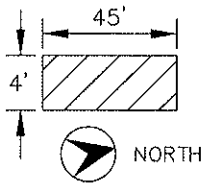
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			
2'		4" ROOTED TOPSOIL W/ LEAF COVER, F-M SAND, L. BROWN, 0-10% F. GRAVEL	E	A	1
1'				A	
0'				A	
1'				A	
2'	F-M SAND	F-M SAND, 10-20% FINE GRAVEL, 10-20% COARSE SAND 10-20% NP FINES, L.BROWN-TAN TRACE MSW			
3'		CLEAN F-M SAND			
4'					
5'					
6'					
7'					
8'					
9'					
10'					



LEGEND		
Boulder	Count	
SIZE RANGE CLASSIFICATION		
6"-18"	A	
18"-36"	B	
36"& Larger	C	

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/17/07 Date Finish: 9/17/07 Project No: 2006054.06-A	Test Pit No. TP-3	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			
2'		10' — 10' — 5' STAKE 1' ROOTED TOPSOIL W/ LEAF COVER, F-M SAND, L. BROWN, 0-10% F. GRAVEL	E		
1'				A	1
0'		≈2.0'		A	
	ROOTED TOPSOIL	SAME MATERIAL W/ 0-10% MSW		A	
1'				A	
2'	F-M SAND	F-M SAND, 10-20% FINE GRAVEL, 10-20% COARSE SAND 10-20% NP FINES, L.BROWN-TAN			
3'		BROWN F-M SAND W/ ORGANICS			
4'		CLEAN F-M SAND, MOSTLY FINE L. BROWN			
5'		FACE OF MSW			
6'					
7'		BOTTOM OF EXCAVATION			
8'					
9'		MSW- PLASTIC BAGS, BOTTLES, CANS, BROKEN GLASS, PAPER			

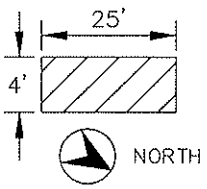
LEGEND

Boulder Count	
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/17/07 Date Finish: 9/17/07 Project No: 2006054.06-A	Test Pit No. TP-4	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

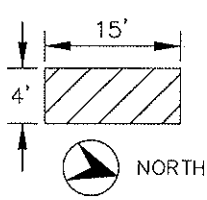
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		WOODS / LANDFILL			
		10' / 5'			
2'		STAKE	E		
1'	ROOTED TOPSOIL	6" ROOTED TOPSOIL W/ LEAF COVER, F-M SAND, L. BROWN, 0-10% F. GRAVEL		A	1
0'		≈2.0'		A	
1'				A	
2'	F-M SAND	F-M SAND, 10-20% FINE GRAVEL, 10-20% COARSE SAND 10-20% NP FINES, L.BROWN-TAN		A	
3'		MSW- PLASTIC BAGS, BOTTLES, CANS, BROKEN GLASS, PAPER, 75% WASTE			
4'	PEAT	BROWN, FIBROUS PEAT			
5'	SILT	CLAYEY SILT, GREY			
6'		BOTTOM OF EXCAVATION			
7'					
8'					
9'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-5	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
3'		← WOODS — LANDFILL →	E		1
2'		4' 6'			
1'		STAKE; 1' ROOTED TOPSOIL W/ LEAF COVER, F-M SAND, L. BROWN, 0-10% F. GRAVEL			
0'		8" FINE SILTY SAND, GREY BROWN			
	ROOTED TOPSOIL	18" FINE SILTY SAND, L. BROWN, W/ MSW 0-25%			
1'					
2'	F-M SAND	F-M SAND, L.BROWN-TAN ROOTED			
3'		FINE SAND, GREY CLEAN	D		
4'		POSSIBLE LEDGE; BOTTOM OF EXCAVATION			
5'					
6'		MSW- PLASTIC BAGS, BOTTLES, CANS, BROKEN GLASS, PAPER, 75% WASTE			
7'					
8'					
9'					

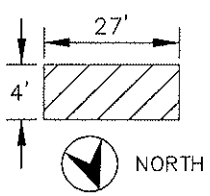
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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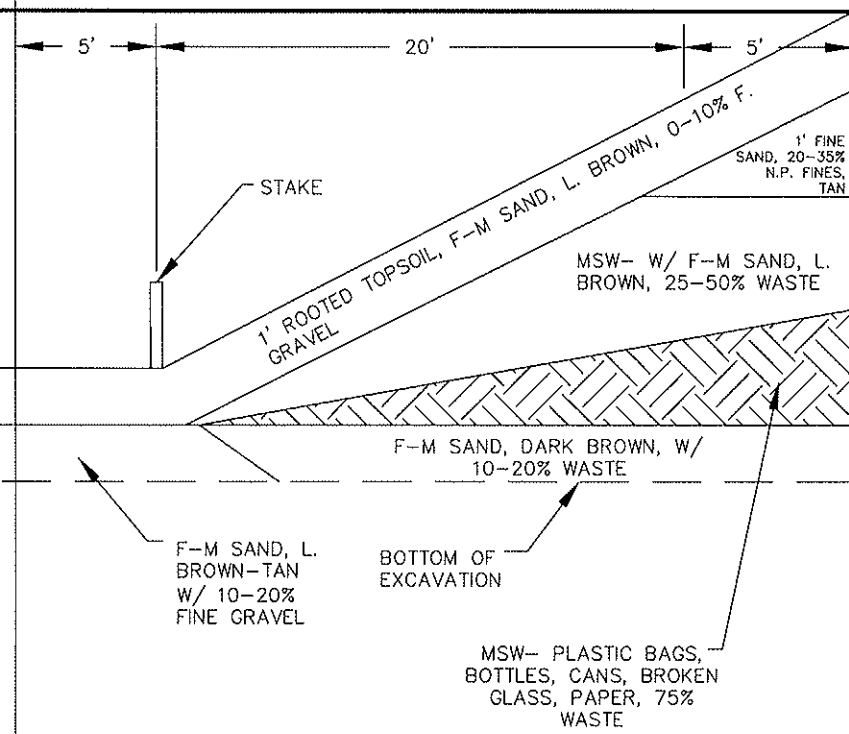
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-6	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

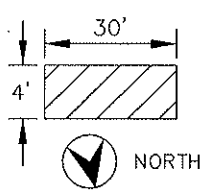
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
5'			E		1
4'					
3'					
2'					
1'					
0'	ROOTED TOPSOIL		D		
1'	F-M SAND				
2'					
3'					
4'					
5'					
6'					
7'					
8'					
9'					



LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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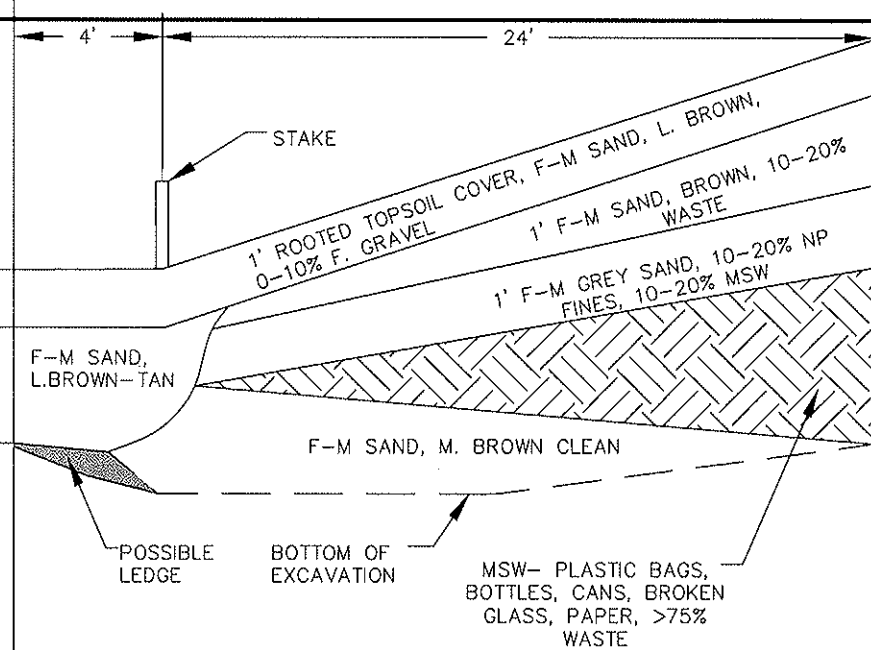
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	**Test Pit No. TP-6A**	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		WOODS — LANDFILL			
2'			E		1
1'					
0'	ROOTED TOPSOIL				
1'					
2'	F-M SAND				
3'			D		
4'					
5'					
6'					
7'					
8'					
9'					

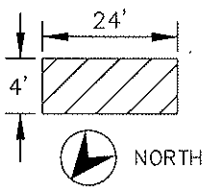


LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

SEA

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-6B	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			
		6' — 10'	E		1
		STAKE			
2'		1' ROOTED TOPSOIL, F-M SAND, L. BROWN, 0-10% F. GRAVEL			
1'		1' MSW- W/ F-M SAND, L. BROWN, 50-75% WASTE			
0'	ROOTED TOPSOIL	2' F-M SAND, M. BROWN W/ 25-50% WASTE	D		
1'		MSW- PLASTICS, BOTTLES, CANS, GLASS, PAPER, 75% WASTE			
2'	F-M SAND	F-M SAND, TAN, ROOTED			
3'		F-M SAND, 10-20% GRAVEL, 10-20% NONPLASTIC FINES, L. BROWN, ROOTED			
4'		BOTTOM OF EXCAVATION			
5'					
6'					
7'					
8'					
9'					

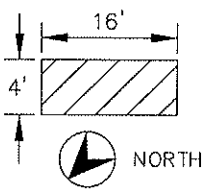
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-6C	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

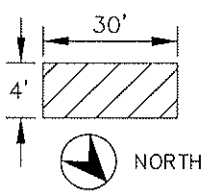
Depth (ft)	Strata Change	SOIL DESCRIPTION (← WOODS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
		STAKE			
0'		1' ROOTED TOPSOIL, F-M SAND, L. BROWN, 0-10% F. GRAVEL	E		1
1'		FINE SILTY SAND, M. BROWN, 0-10% WASTE			
2'		F-M SAND, M. BROWN W/ 0-25% WASTE			2
3'		SAME W/ 50-75% WASTE	D		
4'					
5'					
6'					
7'					
8'					
9'					
10'					

LEDGE

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

1. WASTE CONSISTS OF CONSTRUCTION MATERIAL: SHINGLES, WOOD, CAR PARTS

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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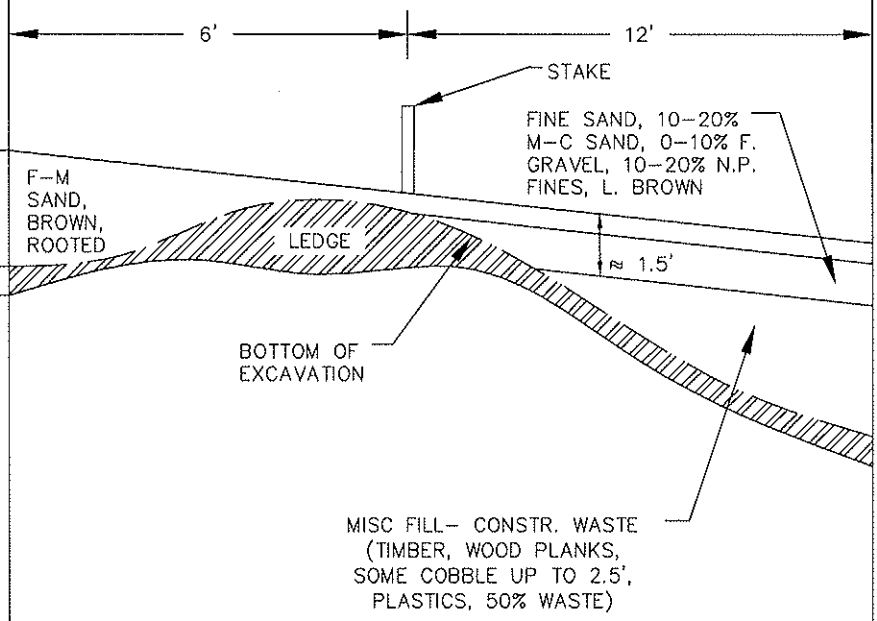
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-7	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

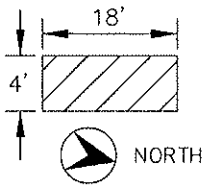
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		WOODS ← → ACCESS ROAD			
0'					
1'	F-M SAND	F-M SAND, BROWN, ROOTED	M		1
2'	LEDGE	LEDGE		A	
3'			D	B	
4'				A	
5'				A	
6'				B	
7'				B	
8'				A	
9'				A	
10'					



LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36" & Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-7A	

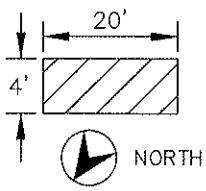
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← ROAD (LANDFILL 2) WOODS (LANDFILL 1) →			
		STAKE	E		
0'					
1'	ROOTED TOPSOIL	HEAVILY ROOTED F-M SAND, BROWN ≈2'	D	A	
2'				A	
3'	MISC. FILL	MISC FILL- CONSTR. WASTE (TIMBER, WOOD PLANKS, FOAM CUSHION', METAL PIPE, FENCE, PLASTICS, 50% WASTE) W/ F-M SAND L.BROWN		A	1
4'		G E		B	
5'	BURN	D		B	
6'	F-M SAND	CLEAN F-MED SAND, LIGHT BROWN E BURN- GREY/BLACK ASH, METALS, GLASS			
7'		L			
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL= _____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-7B

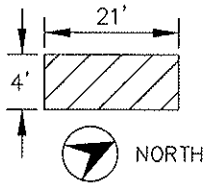
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	ROB KENNEALLY	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← LANDFILL (AREA 2) SHOOTING RANGE/ROAD →			
		STAKE			1
0'	F-M SAND	9" F-M SAND AND GRAVEL, DARK BROWN, FILL (1')	E		
1'	SILTY FINE SAND	9"SILTY FINE SAND, GREY, TRACE CLAY			
2'	MSW	6" MSW — MSW-BED SPRINGS, METALS, FOAM CUSHIONS 10-20% WASTE	M		
3'					
4'		REFUSAL @ 3.5'	D		
5'					
6'					
7'					
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Scientists/Engineers/Architects

Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-7C	

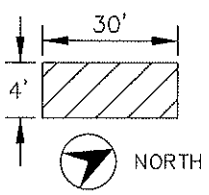
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Rob Kenneally	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← LANDFILL (AREA 2) WOODS →			
		STAKE; ACCESS ROAD; 6' / 12' / 12'			1
0'	6" TOPSOIL	ROOTED TOPSOIL; GRAVELLY F-M SAND	E		
1'	12" FINE SAND	BLACK SHINGLES; F-M SAND, ORANGE, LITTLE SILT			
2'	6" SOLID WASTE	SOLID WASTE-CONSTRUCTION MATERIALS, METALS, WOOD, PLASTIC (30%-50% WASTE)	M		
3'		SILTY FINE SAND, TRACE CLAY, ORANGE/TAN			
4'		FINE SAND, ORANGE/TAN	D		
5'					
6'		REFUSAL @ 5'			
7'					
8'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-8	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		ACCESS ROAD / LF AREA 2 — SHOOTING RANGE			
0'	F-M SAND	6" GRAVELLY SAND, BROWN / GREY	E	A	1
1'	F-M SAND	MISC FILL-F-M BROWN SAND, SOME COBBLE, 10-20% WASTE, PLASTIC BAGS, WOOD PLANKS	D	A	
2'	BURN	BURN		B	
3'	MISC FILL	LAYER OF SHINGLES		B	
4'		BOULDERS UP TO 3.5'		A	
5'		F-M SAND AND GRAVEL, L. BROWN, 5-10% CONSTRUCTION WASTE, PLASTICS, METALS	E	B	
6'		CLEAN F-M SAND, LIGHT BROWN			
7'					

STAKE

12' — 48'

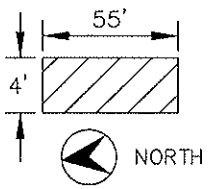
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-8A	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

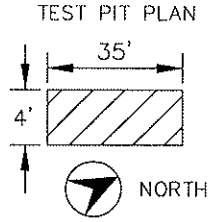
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		SHOOTING RANGE — WOODS			
		10' — 25'			
		STAKE			
		4" SAND AND GRAVEL; 4" ROOTED TOPSOIL, BROWN			
0'	F-M SAND		E	B	
1'	MISC FILL	MISC FILL: F-M BROWN SAND, SOME COBBLE, 0-10% WASTE, PLASTICS WOOD PLANKS		B	
2'				A	1
3'		MISC FILL: 50% WASTE, F-M SAND, L. BROWN	D	A	
4'			E		
5'		GREY-BLACK GRAVELLY SAND			
6'					
7'		6" NATURAL FINE SAND, L. BROWN			

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

SEA
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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-9

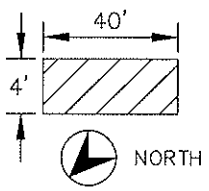
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		ACCESS ROAD — SHOOTING RANGE			
0'	F-M SAND	12' — 48' — STAKE — 4" ROOTED TOPSOIL, BROWN	E		
1'	MISC FILL	MISC FILL: F-M BROWN SAND, 0-10% WASTE, PLASTICS PAPER		A	1
2'				A	
3'		MISC FILL: 75% WASTE, CONSTR. MATERIAL, DRY WALL, PLASTICS, ROPE, RUBBER, BRICK	D		
4'		FINE SAND, TAN-ORANGE	E		
5'					
6'		BOTTOM OF EXCAVATION			
7'		SAME MATERIAL WITH TRACE WASTE			

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-10	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← ACCESS ROAD — SHOOTING RANGE →			
0'	F-M SAND	ROOTED TOPSOIL, BROWN W/ TRACE WASTE	E		
1'					
2'	MISC FILL	MISC FILL: 50% WASTE, CONSTR. MATERIAL, CAR PARTS, PLASTICS, METAL SHEETING	M	B A B B B B A B	1
3'					
4'	FINE SAND	SILTY FINE SAND, TAN, SOME COBBLE (4–6 BOULDERS UP TO 2')			
5'					
6'					
7'					

13' 10'

STAKE

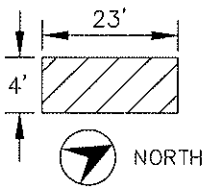
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL= _____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

S E A

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Scientists/Engineers/Architects

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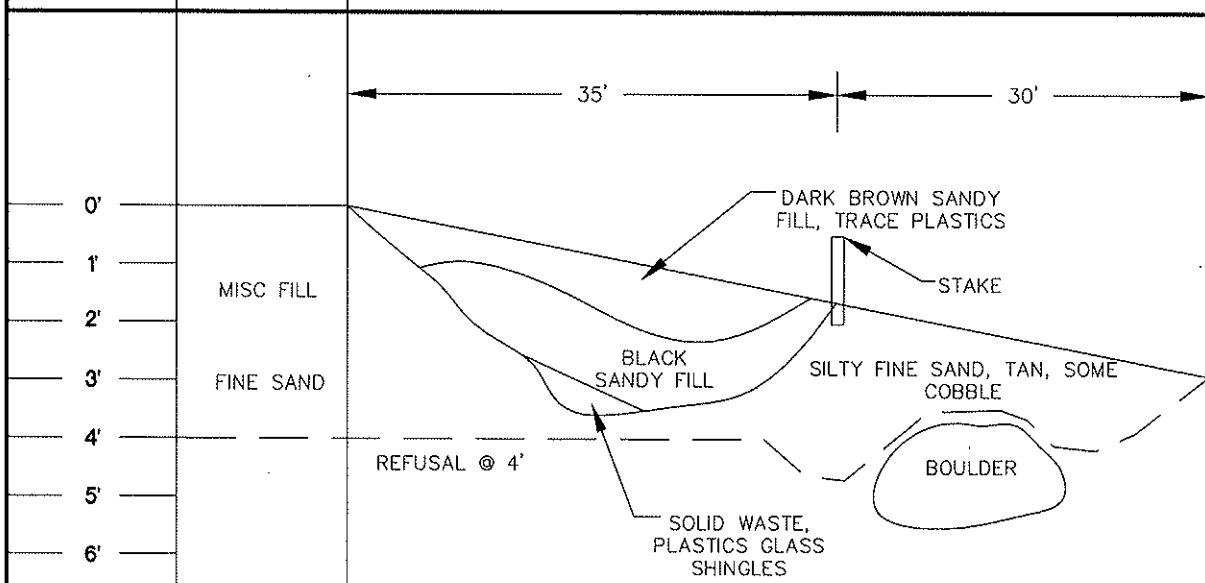
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-11

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Rob Kenneally	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← RANGE — WOODS →			



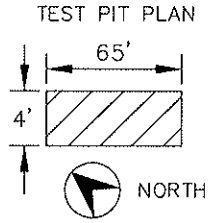
Excav. Effort	Bould. Count	Remark No.
E M D	B A B A B	1

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

SEA

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-11A	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← RANGE — WOODS →			
		20' — 13'			
		STAKE			
0'	6" COVER	CLAY PIGEON PIECES, LEAF LITTER, BROWN ROOTED SOIL			
1'	MISC FILL	SOLID WASTE W/ BLACK F-M SAND, FILL, (GARDEN HOSE, PLASTICS 30% WASTE	E		
2'		DARK BROWN/BLACK SAND, FILL, TRACE PLASTICS	M	B A	1
3'		BOULDER	D	B A B	
4'		SILTY FINE SAND, TAN, SOME COBBLE			
		REFUSAL @ 4'			
5'					
6'					
7'					

LEGEND		TEST PIT PLAN	REMARKS:	PROPORTIONS USED:
Boulder	Count	33' × 4' NORTH		trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)
SIZE RANGE CLASSIFICATION				
6"–18"	A			
18"–36"	B			
36"& Larger	C			
EXCAVATION EFFORT		VOL=_____ CY	NOTE: MSW – MUNICIPAL SOLID WASTE	SEA CONSULTANTS INC. Scientists/Engineers/Architects
E	EASY			
M	MODERATE			
D	DIFFICULT			

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-12	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION ← WOODS / LANDFILL →	Excav. Effort	Bould. Count	Remark No.
0'	TOPSOIL	6" ROOTED TOPSOIL W/ SHOT SHELL AND CLAY PIGEON, F-M SAND, BROWN	E		1
1'	FILL	14" SILTY FINE SAND, W/ 20-35% WASTE, PLASTICS, METALS		A	2
2'	BURN	4" LAYER BURN MATERIAL		A	
3'	FINE SAND	CLEAN SILTY FINE SAND, ORANGE, BOULDERS UP TO 3'	M	A	
4'				B	
5'				A	
6'				B	
7'				B	
8'				A	
9'					
10'					
11'					
12'					
13'					
14'					
15'					
16'					
17'					

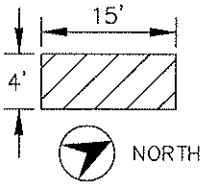
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

1. WASTE COSISTS OF CONSTRUCTION TYPE MATERIAL: PIPE, METALS, PLASTIC, WIRE

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:

trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-13	

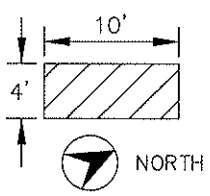
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Rob Kenneally	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← LANDFILL			
0'	TOPSOIL	STAKE; 2"–4" TOPSOIL			
1'	CLAY	GREY CLAY WITH ROOT MATTER (≈1'); ROOTED TOPSOIL W/ GRASS COVER, F–M SAND, L. BROWN, 0–10% F. GRAVEL	E		
2'	SOLID WASTE	SOLID WASTE			
3'		F–M SAND, TAN			1
4'					
5'		BOTTOM OF EXCAVATION			
6'					
7'		3' ← → 7'			
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-13A

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			
		9' — 12' — 12' ACCESS RD			
0'	ROOTED TOPSOIL	12" ROOTED TOPSOIL; GRAVEL; ROOTED TOPSOIL; 0.5'; GREY CLAY ≈1.5'; FINE SAND, TAN; SOLID WASTE (WOOD WASTE, RAGS, SHINGLES 80%)	E	A	1
1'				A	
2'	FINE SAND				
3'					
4'		BLACK FIBROUS PEAT			
5'					
6'					
7'					
8'					
9'					
10'					

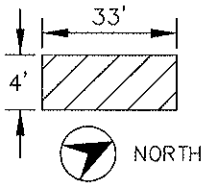
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

S E A

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/18/07 Date Finish: 9/18/07 Project No: 2006054.06-A	Test Pit No. TP-14

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Rob Kenneally	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← WETLANDS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
4'		STAKE; WETLAND LIMIT; 6" ROOTED TOPSOIL; GREY CLAY ≈3'; MSW	E		1
3'					
2'					
1'					
0'	TOPSOIL				
1'	GREY CLAY				
2'					
3'					
4'	MSW				
5'					
6'					
7'					
8'					
9'					
10'					

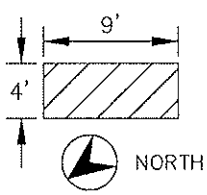
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

1. TEST PIT WAS NOT ADVANCED TO THE TOE OF SLOPE BECAUSE OF PROXIMITY TO WETLAND.

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-15	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			
1'	STAKE	2"–4" ROOTED TOPSOIL	E		
0'		6" SANDY CLAY GREY/BROWN			
1'		12" FINE TO MED. SAND			
2'		SOLID WASTE			
3'					1
4'		TAN MED SAND			
5'					
6'					
7'					
8'					
9'					
10'					

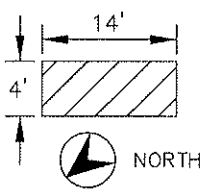
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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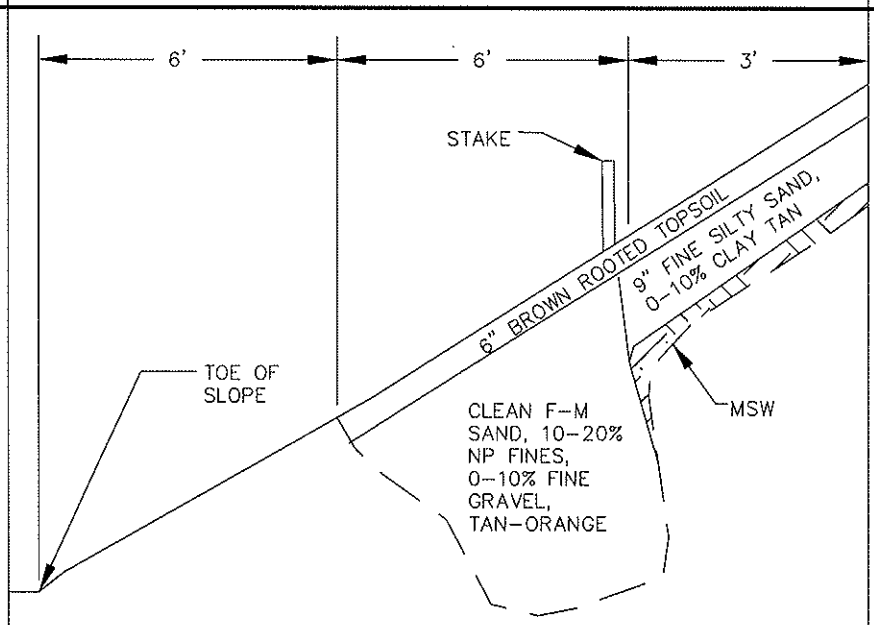
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-16	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← WOODS — LANDFILL →			



E

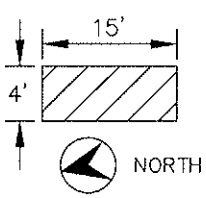
1

9' 8' 7' 6' 5' 4' 3' 2' 1' 0' 1' 2' 3' 4' 5' 6' 7' 8' 9'

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-17

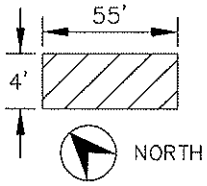
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (WOODS — LANDFILL)	Excav. Effort	Bould. Count	Remark No.
2'		43' / 12'; STAKE; 6" TOPSOIL, 9" SILTY FINE SAND, TAN; SOLID WASTE	E		1
1'					
0'	ROOTED TOPSOIL	BROWN ROOTED TOPSOIL			
1'	GRAVELLY SAND	FINE GRAVELLY SAND, BROWN		B	
2'				A	
3'	MISC FILL	MISC FILL: 20–35% WASTE, PLASTICS, BOTTLES, METALS W/ F–M SAND AND GRAVEL, L.BROWN		B	
4'				A	
5'				A	
6'					
7'	F–M SAND	CLEAN F–M SAND, L. BROWN			
8'					
9'					
10'					
11'					
12'					
13'					
14'					
15'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL= _____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-17A	

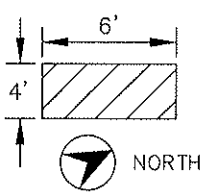
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION ← WOODS — LANDFILL →	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'	TOPSOIL	6" ROOTED TOPSOIL	E	A	
1'	MISC FILL	2' MISC FILL: 50% WASTE, PLASTICS, RAGS, BOTTLES (≈2.5')		A	
2'					
3'	F-M SAND	2' CLEAN FINE SAND, TAN			1
4'					
5'					
6'					
7'					
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL= _____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-17B	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION ← WOODS / LANDFILL →	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'					
1'	TOPSOIL	2' ROOTED TOPSOIL	E	A	
2'				A	
3'	MISC FILL	2.5' MISC FILL: 75% WASTE, PLASTICS, PIPE, RAGS, BOTTLES (≈4.5')			1
4'					
5'	F-M SAND	2' CLEAN FINE SAND, TAN			
6'					
7'					
8'					
9'					
10'					

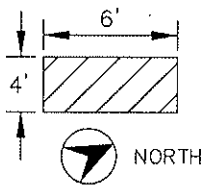
LEGEND

Boulder Count	
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/19/07 Date Finish: 9/19/07 Project No: 2006054.06-A	Test Pit No. TP-17C	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION ← WOODS / LANDFILL →	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'	TOPSOIL	6" ROOTED TOPSOIL	E	A	1
1'	MISC FILL	2' MISC FILL: 50% WASTE, SHINGLES, PORCELAIN, RAGS, HABACHI (≈2.5')		A	
2'					
3'	F-M SAND	1' CLEAN FINE SAND, TAN			
4'					
5'					
6'					
7'					
8'					
9'					
10'					

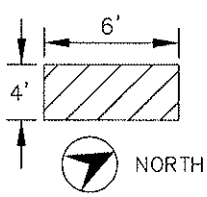
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

S E A

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-18	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (WOODS ← → LANDFILL)	Excav. Effort	Bould. Count	Remark No.
3'		12' / 4' / 10'	E	A	
2'				A	
1'		M-C SANDY GRAVEL (ACCESS ROAD); 12" ROOTED TOPSOIL; 18" FINE SILTY SAND, TAN		B	
0'	M-C GRAVEL			A	
1'	F-M GRAVELLY SAND	F-M SAND AND GRAVEL, GREY-BROWN CONTAINS WASTE (0-25%); MSW		A	1
2'	MISC FILL				
3'		SOLID WASTE-BURN, METALS, WOOD, RAGS, PLASTIC (75% WASTE)			
4'					
5'					
6'		≈6" F-M TAN SAND			
7'					
8'					
9'					
10'					

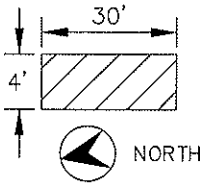
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	**Test Pit No.** **TP-18A**

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← WOODS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'	TOPSOIL	BROWN ROOTED TOPSOIL	E	A	
1'	F–M SAND	F–M SAND, 10–20% FINE GRAVEL, MED BROWN, 0–10% WASTE (≈2.0')		A	
2'	MISC FILL	MISC FILL: 25–50% WASTE, PLASTICS, RAGS, METALS, W/ F–M SAND			
3'					
4'		MISC FILL: 75% WASTE, WOOD, RAGS, SHINGLES, PLASTICS, PAPER, RUBBER, WIRE, METALS			1
5'					
6'					
7'	F–M SAND	3' CLEAN FINE SAND, TAN			
8'					
9'					
10'					

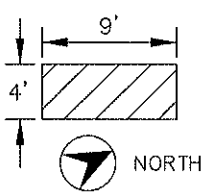
LEGEND

Boulder Count	
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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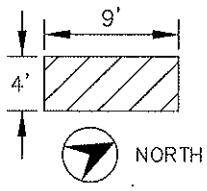
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-18B

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← WOODS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'	F-M SAND	BROWN ROOTED F-M SAND, TRACE WASTE (≈2.0')	E	A	
1'				A	
2'	MISC FILL	MISC FILL: 25% WASTE, CONSTRUCTION MATERIALS, SHINGLES, WOOD, RAGS, PAPER, DRYWALL			
3'					
4'	F-M SAND	CLEAN FINE SAND, TAN			1
5'					
6'					
7'					
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C
EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-18C	

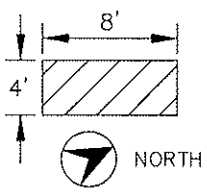
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← WOODS — LANDFILL →)	Excav. Effort	Bould. Count	Remark No.
		GROUND SURFACE, SOME SURFICIAL WASTE			
0'	TOPSOIL	BROWN ROOTED TOPSOIL	E	A	
1'	F-M SAND	F-M SAND, BROWN, 0-10% WASTE (≈1.5')		A	
2'					
3'	MISC FILL	MISC FILL: 25-50% WASTE, PLASTICS, RAGS, METALS, W/ F-M SAND			1
4'					
5'					
6'					
7'	F-M SAND	CLEAN F-M SAND, TAN			
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36" & Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

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PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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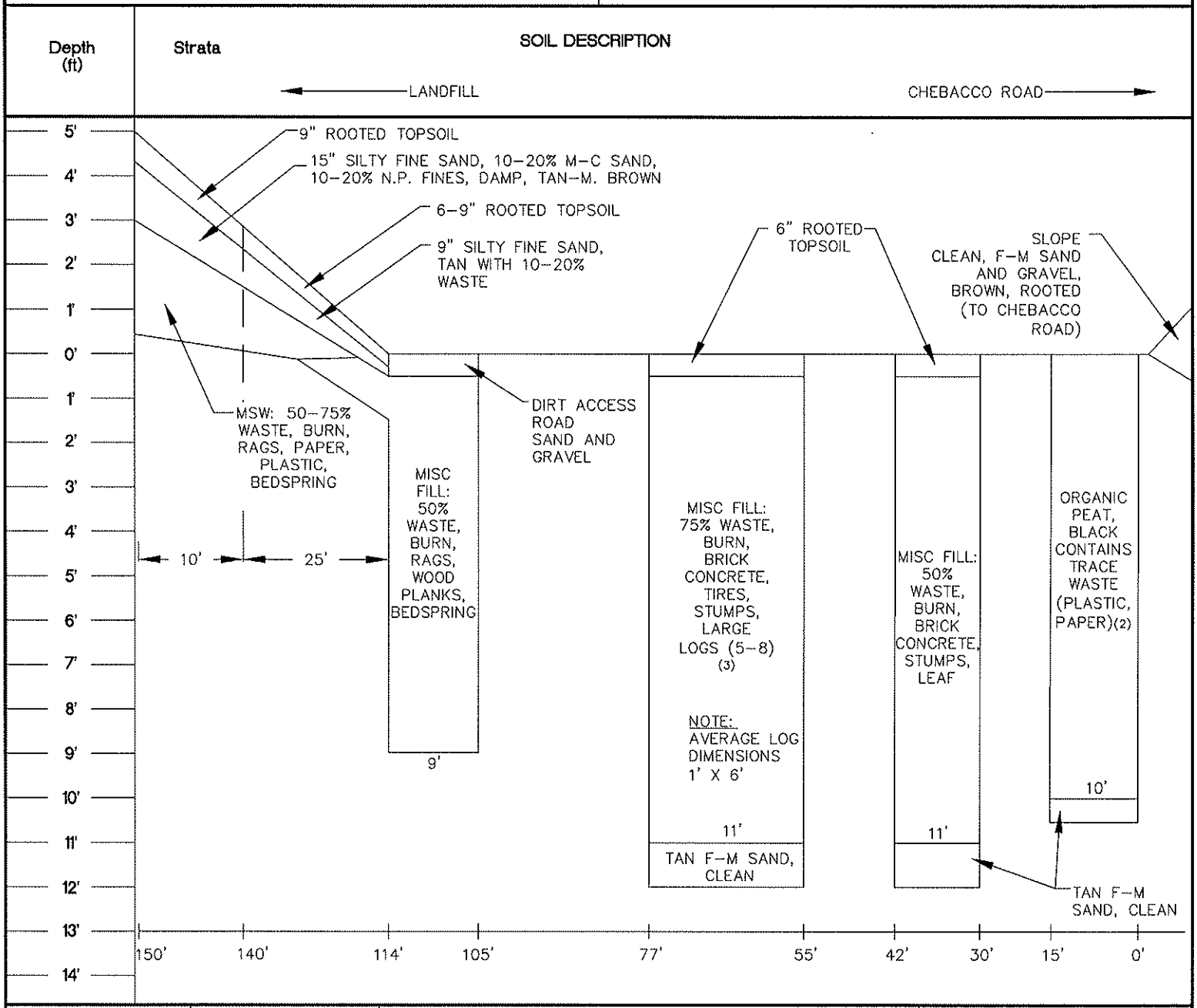
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-19

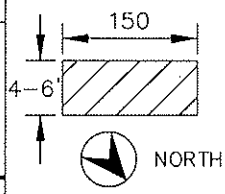
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered



LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

1. EXCAVATION EFFORT MEDIUM TO DIFFICULT

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:

trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-19A	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← LANDFILL 1 — CHEBACCO ROAD →)	Excav. Effort	Bould. Count	Remark No.
2', 1', 0'		SLOPE CLEAN, F–M SAND AND GRAVEL, BROWN, ROOTED	E	A, A	
1', 2', 3', 4'	FINE SAND / ORGANIC SILT (DREDGE)	FINE SAND WITH 35–50% ORGANIC FINES, BLACK–DARK BROWN, VERY SOFT (2) ≈4'			1
5', 6', 7'	MISC FILL	MISC FILL: F–M SAND, 10–20% F–C GRAVEL, 0–10% N.P. FINES, L. BROWN, TAN, 0–25% WASTE, WOOD PIECES, PLASTIC ≈3'			
8', 9', 10'	F–M SAND	CLEAN F–M SAND, 10–20% F–C GRAVEL, 0–10% N.P. FINES, L. BROWN, TAN, ≈2'			

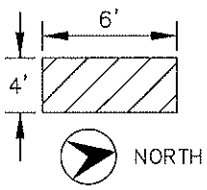
LEGEND

Boulder Count	
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-19B	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← ENTRANCE — WOODS →)	Excav. Effort	Bould. Count	Remark No.
2'					
1'					
0'	TOPSOIL	6" ROOTED TOPSOIL	E		
1'		MISC FILL: F–M SAND, 10–20% F–C GRAVEL, 0–10% N.P. FINES, L. BROWN, TAN, 0–10% WASTE, WOOD PIECES, CONCRETE, ASPHALT		A	
2'				A	1
3'	MISC FILL		M	B	
4'				B	
5'			D		
6'	ROCK?	ROCK / LEDGE?			
7'					
8'					
9'					
10'					

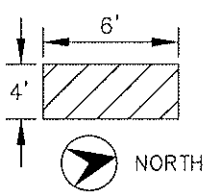
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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Scientists/Engineers/Architects

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-19C	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION (← LANDFILL 1 — CHEBACCO ROAD →)	Excav. Effort	Bould. Count	Remark No.
2'					
1'					
0'	TOPSOIL	6" ROOTED TOPSOIL	E	A	
1'				A	
2'		MISC FILL: F–M SAND, 10–20% F–C GRAVEL, 0–10% N.P. FINES, DARK BROWN, 0–10% WASTE, WOOD PIECES, CONCRETE, ASPHALT			1
3'	MISC FILL	≈6'			
4'					
5'					
6'	ROCK?	ROCK / LEDGE?			
7'					
8'					
9'					
10'					

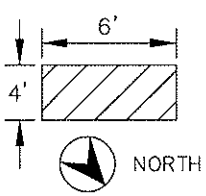
LEGEND

Boulder	Count
SIZE RANGE CLASSIFICATION	
6"–18"	A
18"–36"	B
36"& Larger	C

EXCAVATION EFFORT

E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0–10%), little (10–20%), some (20–35%), and (35–50%), with (amount not included)

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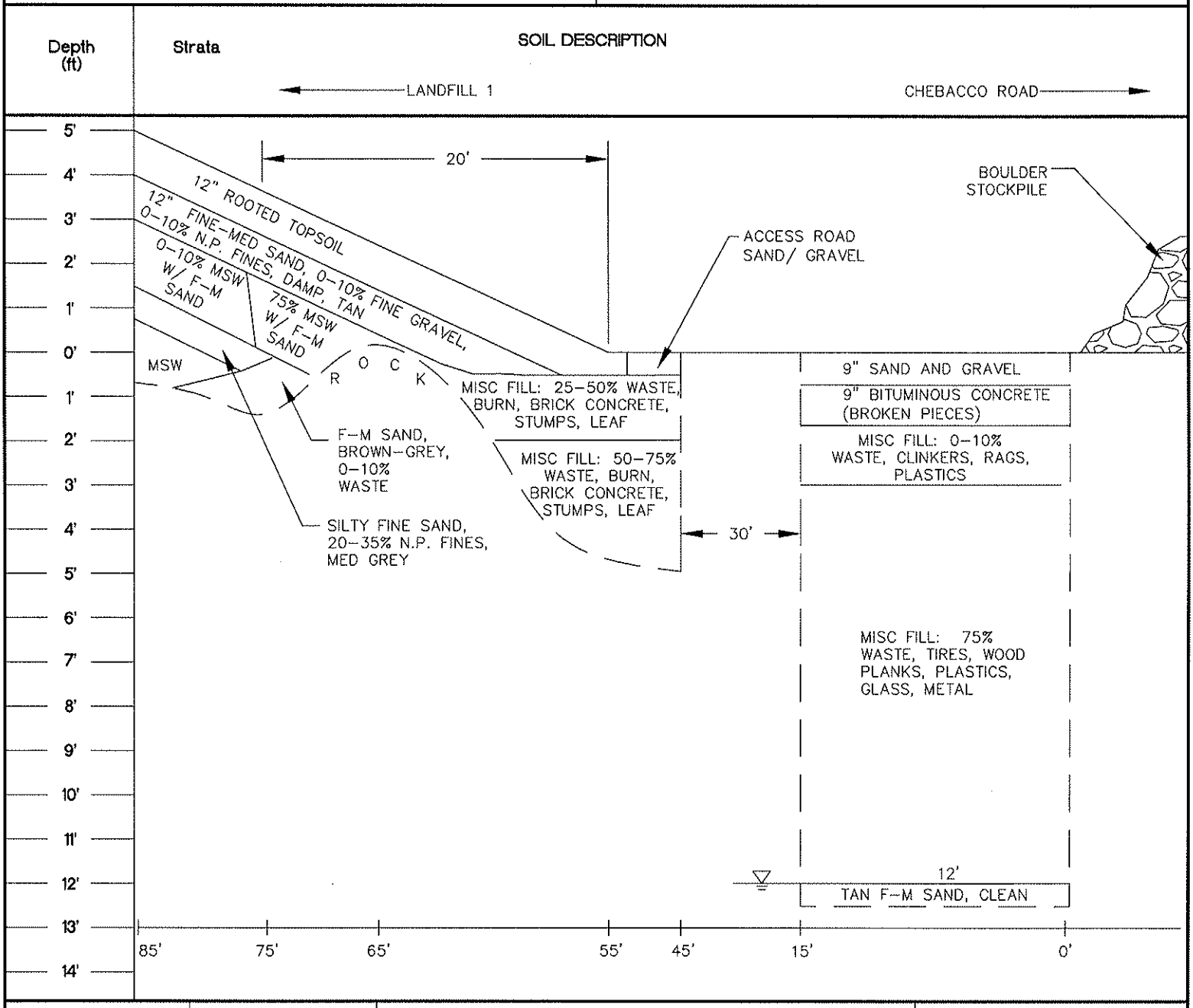
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-20	

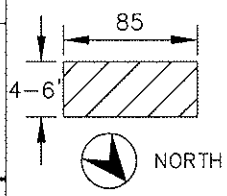
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	12' B.G.S.



LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL= _____ CY

REMARKS:

1. TEST PIT COULD NOT BE EXTENDED BEYOND BOULDER STOCKPILE

NOTE: MSW - MUNICIPAL SOLID WASTE

PROPORTIONS USED:

trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-21	

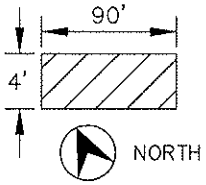
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		← CHEBACCO ROAD — LANDFILL →			
		← 20' → ← 45' → ← 25' →			
		STAKE — STAKE			
0'			E		
		12" ROOTED SANDY TOPSOIL		A	1
1'		F-M SAND, 20-35% F-C GRAVEL AND COBBLE, L. BROWN.		B	
2'		F-M SAND, 10-20% F-C GRAVEL, L. BROWN, 10-20% WASTE ≈3'		B	
3'	GRAVELLY SAND	FINE SILTY SAND, 10-20% N.P. FINES, L. BROWN.		B	
4'		GRAVELLY F-M SAND, 20-35% F-C GRAVEL 0-10% WASTE, L. BROWN.		A	
5'		BURN: CLINKERS, METAL, GLASS, BRICK, CONCRETE W/ 0-25% SAND AND GRAVEL — MSW		A	
6'	TILL			A	
7'	LEDGE				
8'		LEDGE			
9'					
10'		TILL: VERY WELL GRADED SAND AND GRAVEL, BROWNISH-RED			

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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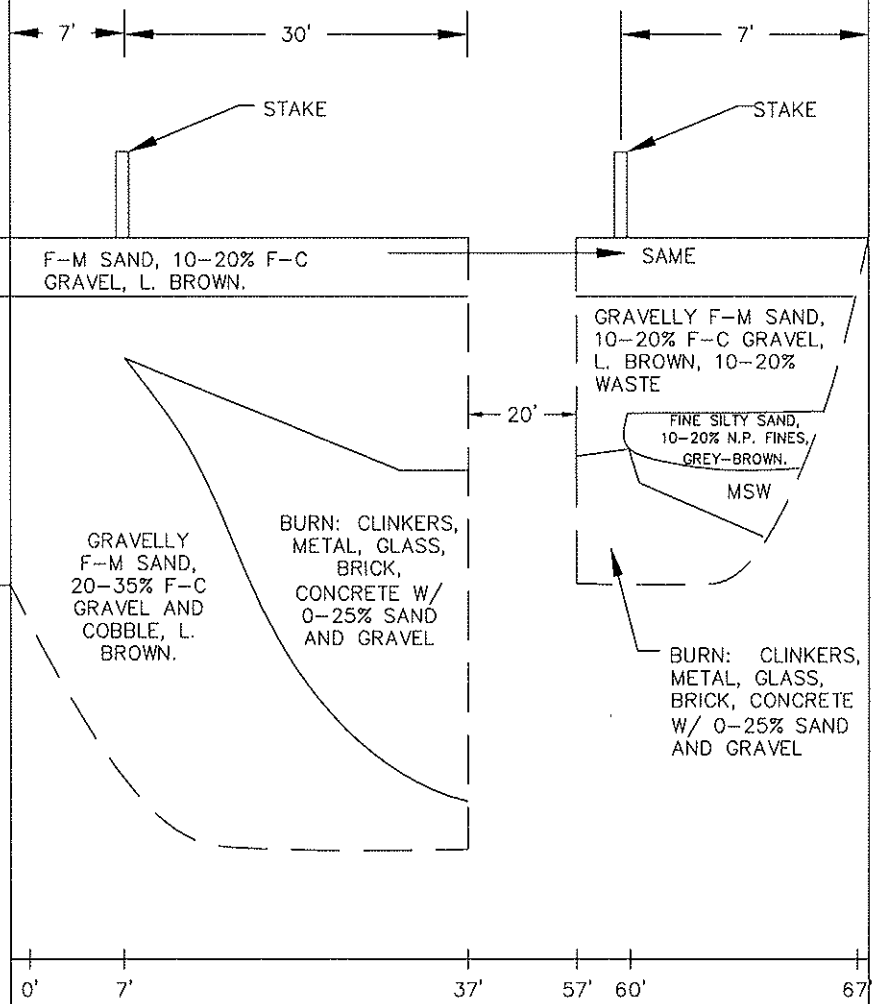
Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/20/07 Date Finish: 9/20/07 Project No: 2006054.06-A	Test Pit No. TP-22	

Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

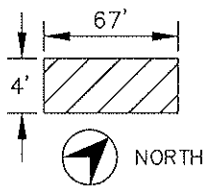
Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
0'		CHEBACCO ROAD: F-M SAND, 10-20% F-C GRAVEL, L. BROWN.	E	A	1
1'		LANDFILL: SAME		B	
2'	GRAVELLY SAND	LANDFILL: GRAVELLY F-M SAND, 10-20% F-C GRAVEL, L. BROWN, 10-20% WASTE		B	
3'				B	
4'		FINE SILTY SAND, 10-20% N.P. FINES, GREY-BROWN. MSW		A	
5'				A	
6'		GRAVELLY F-M SAND, 20-35% F-C GRAVEL AND COBBLE, L. BROWN.		A	
7'		BURN: CLINKERS, METAL, GLASS, BRICK, CONCRETE W/ 0-25% SAND AND GRAVEL			
8'		BURN: CLINKERS, METAL, GLASS, BRICK, CONCRETE W/ 0-25% SAND AND GRAVEL			
9'					
10'					



LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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Project: Hamilton Sanitary Location: Hamilton, Massachusetts	Date Start: 9/17/07 Date Finish: 9/17/07 Project No: 2006054.06-A	Test Pit No. TP-23	

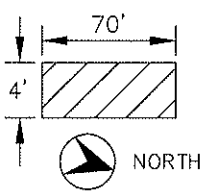
Contractor/Driller:	P.B. Johnson	Weather:	75° F, Sunny
Equipment:	Komatsu PC-150	Location:	See Plan
Engineer/Geologist:	Michael Looney	Surface Elevation:	See Plan
		Groundwater Elevation:	Groundwater Not Encountered

Depth (ft)	Strata Change	SOIL DESCRIPTION	Excav. Effort	Bould. Count	Remark No.
		WOODS ← → LANDFILL			
0'	ROOTED TOPSOIL	10' / 60' F-M SAND, 10-20% FINE GRAVEL, 10-20% COARSE SAND 0-10% NP FINES, TAN-ORANGE STAKE STAKE 4" ROOTED TOPSOIL 12" ROOTED TOPSOIL ≈2.0' MSW- PLASTIC BAGS, BOTTLES, CANS, GLASS, PAPER, 75% WASTE BURN F-M SAND, TAN	E	A A A A	1
1'					
2'	F-M SAND				
3'					
4'					
5'					
6'					
7'					
8'					
9'					
10'					

LEGEND	
Boulder	Count
SIZE RANGE CLASSIFICATION	
6"-18"	A
18"-36"	B
36"& Larger	C

EXCAVATION EFFORT	
E	EASY
M	MODERATE
D	DIFFICULT

TEST PIT PLAN



VOL=_____ CY

REMARKS:

NOTE: MSW – MUNICIPAL SOLID WASTE

PROPORTIONS USED:
trace (0-10%), little (10-20%), some (20-35%), and (35-50%), with (amount not included)

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APPENDIX F

NHESP Letter (May 7, 2008)

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

5/7/2008

Jessica Ormsby
SEA Consultants, Inc.
215 First Street
Suite 320
Cambridge MA 02142

RE: Project Location: Chebacco Road
Town: HAMILTON
NHESP Tracking No.: 08-24660

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 981* (PH 981) and *Estimated Habitat 221* (EH 221) as indicated in the *Massachusetts Natural Heritage Atlas* (12th Edition). Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

Scientific name	Common Name	Taxonomic Group	State Status
Ambystoma laterale	Blue-Spotted Salamander	Amphibian	Special Concern

The species listed above is/are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.nhesp.org).

Please note that projects and activities located within Priority and/or Estimated Habitat must be reviewed by the NHESP for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (310 CMR 10.00)

If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the NHESP so that it is received at the same time as the local conservation commission. If the NHESP determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, than the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the NHESP to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is now available. When filing a Notice of Intent (NOI), the applicant may now file concurrently under the MESA on the same NOI form and qualify for a 30-day

streamlined joint review. For a copy of the revised NOI form, please visit the MA Department of Environmental Protection's website: http://www.mass.gov/dep/water/approvals/wpaform3.doc.

MA Endangered Species Act (M.G.L. c. 131A)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to NHESP Environmental Review to determine whether a probable "take" under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: www.nhesp.org ("Regulatory Review" tab).

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If you have any questions regarding this letter please contact Amy Coman, Endangered Species Review Assistant, at (508) 389-6364.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

COMPREHENSIVE SITE ASSESSMENT

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

VOLUME II
(APPENDICES G, H, and I)

DEP TRANSMITTAL NO. X225251

November 2008

Prepared by:
S E A CONSULTANTS, INC.
Science/Engineering/Architecture
Cambridge, Massachusetts
Framingham, Massachusetts
Rocky Hill, Connecticut
Concord, New Hampshire
Augusta, Maine

LIST OF APPENDICES

VOLUME II

APPENDIX G - WATER QUALITY AND SEDIMENT ANALYTICAL DATA

APPENDIX H - SOIL GAS DATA TABLES

APPENDIX I - SLUG TEST DATA

APPENDIX G

Water Quality and Sediment Analytical Data

Round 1 – May 1, 2007

Water Quality and Sediment Results

S E A Consultants Inc.
Scientists/Engineers/Architects

May 1, 2007

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

Re: Comprehensive Site Assessment (CSA)
Water Quality and Sediment Monitoring Results (Round 1 of 4)
Hamilton Sanitary Landfill
S E A Ref. No. 2006054.02

Dear Mr. Carrigan:

Enclosed are the laboratory analytical results for the first round of Comprehensive Site Assessment (CSA) water quality and sediment monitoring performed at the Hamilton Sanitary Landfill. The sampling activities were performed on March 5th and 6th, 2007 and were completed in accordance with S E A's May 19, 2006 CSA Scope of Work, as approved by DEP in its letter dated September 13, 2006.

The water quality monitoring network consists of eight groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4S/4D, MW-5, and MW-6S/6D), and three surface water sampling locations (SW-1, SW-2, and SW-3). The surface water samples were collected adjacent to the three piezometers installed at the site. In accordance with the DEP's CSA Scope of Work approval, three sediment samples (SED-1, SED-2, and SED-3) were collected from locations adjacent to the three piezometers. Refer to the attached figures for a depiction of the sampling locations.

The water quality and sediment samples were collected by Environmental Sampling Technology (EST) of Needham, Massachusetts and were analyzed by Alpha Analytical Laboratories of Westborough, Massachusetts. Groundwater depth and total well depth were measured at each of the eight monitoring wells prior to sampling using EPA's low flow protocols. Temperature, pH, specific conductivity and dissolved oxygen were also measured at the groundwater and surface water sampling locations during the sample collection. The sediment samples were collected from the top 6-inches of sediment underlying the water bodies (stream and pond). The groundwater, surface water and sediment analytical parameters are summarized on the attached Tables 1 and 2.

485 Massachusetts Avenue
Cambridge, MA 02139-4018
(617) 497-7800
Fax (617) 498-4630
Email cambridge@seacon.com

Augusta, ME
Concord, NH
Rocky Hill, CT
Stoneham, MA

CSA Monitoring Results

Table 3 summarizes the groundwater analytical results and compares the results to the Massachusetts drinking water standards (MMCLs and SMCLs), as well as to the Massachusetts Contingency Plan (MCP) RCGW-1 reporting thresholds provided in Section 310 CMR 40.1600 of the MCP. Table 4 summarizes the surface water analytical results and compares the results to both the Environmental Toxicity Values provided in 310 CMR 40.1516 of the MCP and the EPA National Recommended Water Quality Criteria. Table 5 summarizes the sediment analytical results and compares the results to consensus-based threshold effects concentrations (TECs) established in DEP's May 2002 Technical Update entitled "Freshwater Sediment Screening Benchmarks for Use under the Massachusetts Contingency Plan" and probable effect concentrations (PECs) provided in DEP's Technical Update entitled "Revised Sediment Screening Values". The complete laboratory analytical

reports and sampling records are attached for reference. The results of the monitoring round are highlighted below.

Groundwater Monitoring Results (See Table 3)

- Dissolved arsenic was detected at a concentration of 0.015 mg/l at MW-4D, which exceeds the Massachusetts Contingency Plan (MCP) RCGW-1 reporting threshold and the Massachusetts DEP Maximum Contaminant Level (MMCL) of 0.01 mg/l. Dissolved arsenic was not detected at any of the other monitoring well locations.

- Dissolved iron and manganese concentrations were detected in excess of their respective Massachusetts DEP Secondary Maximum Contaminant Level (SMCL) of 0.3 mg/l and 0.05 mg/l at monitoring wells MW-1, MW-2, MW-4D, MW-5 and MW-6D. In addition, monitoring well MW-3 contained dissolved manganese concentrations in excess of the SMCL threshold. SMCLs are non-enforceable standards that were developed to protect the aesthetic quality of drinking water.

- Dissolved sodium concentrations were detected in excess of the Office of Research and Standards Guidelines (ORSG) level of 20 mg/l. No MMCL, SMCL, or RCGW-1 standards exist of dissolved sodium.

- No Volatile Organic Compounds (VOCs) were detected in excess of the Massachusetts drinking water standards or RCGW-1 reporting thresholds at the monitoring well locations.

- No Semi-Volatile Organic Compounds (SVOCs) were detected in excess of the laboratory detection limits, which were all below the Massachusetts drinking water standards or RCGW-1 reporting thresholds.

- No Polychlorinated Biphenyls (PCBs) or organochlorine pesticides were detected in excess of the laboratory detection limits. The detection limits for PCBs at MW-2 were 0.000352 mg/l, which is slightly higher than RCGW-1 reporting threshold of 0.0003 mg/l.

Surface Water Monitoring Results (See Table 4)

- Total alkalinity was detected at 21 mg/l at SW-3, which is slightly above the EPA national recommended water quality criteria standard of 20 mg/l.

- Dissolved iron was detected at 3.5 mg/l at SW-2, which exceeds the EPA national recommended water quality criteria of 1 mg/l. No other dissolved metal concentrations were detected above the EPA national recommended water quality criteria or the MCP environmental toxicity values.

- No VOC or SVOC concentrations were detected in excess of the laboratory detection limits, which were all below the EPA water quality criteria and the MCP environmental toxicity values at the surface water locations.

- No PCB or pesticide concentrations were detected in excess of the laboratory detection limits. The detection limits for PCBs were above the EPA national recommended water quality criteria of 0.000014 mg/l.

Sediment Monitoring Results (See Table 5)

As shown in Table 5, both TECs and PECs are provided as standards against which the sediment analytical results have been compared. As defined in the DEP guidance documents, TECs are concentrations below which harmful effects to sediment dwelling organisms are considered unlikely, whereas PECs are concentrations that, if exceeded, are expected to produce adverse effects more often than not. Since the PECs reflect the upper boundary of potential risk to sediment dwelling organisms, these are the standards of greatest interest when evaluating the sediment analytical data.

- Total arsenic was detected at a concentration of 40 mg/l at SED-2, which exceeds the Freshwater Sediment Screening PEC of 30 mg/kg. No other metal concentrations were detected above the lower level TEC thresholds.

- No pesticides were detected above Freshwater Sediment Screening TECs at the sediment sampling locations.

- No PCB or SVOC concentrations were detected in excess of the laboratory detection limits, which were all below the Freshwater Sediment Screening TECs.

- No VOC concentrations were detected in excess of the Freshwater Sediment Screening TECs.

Water Level Measurements (See Table 6)

Water level elevations were collected at all groundwater monitoring wells and at the three piezometer locations. The wells and piezometers have not yet been surveyed, therefore only water level depths, measured from top-of-casings, can be provided at this time and this information is summarized in Table 6. Prior to the completion of the CSA field investigations, the wells and piezometers will be surveyed to a common vertical datum (USGS), which will allow us to prepare groundwater contour maps that will be presented in the CSA Report. Piezometer and monitoring well installation logs are provided for reference.

The second round of CSA water quality monitoring is scheduled to be completed in May/June. The Round 2 monitoring program is summarized in Table 7. As noted in Table 7, surface water and sediment monitoring will not be performed during the next round, but will be completed during Round 3, as coordinated with DEP following S E A's receipt of the Department's September 13, 2007 CSA Scope of Work approval letter. Consistent with the DEP-approved Scope of Work, extended parameters analysis will also not be performed during Round 2, but will be performed during the Round 3 monitoring event (the Round 3 monitoring locations and parameters will be identical to Round 1).

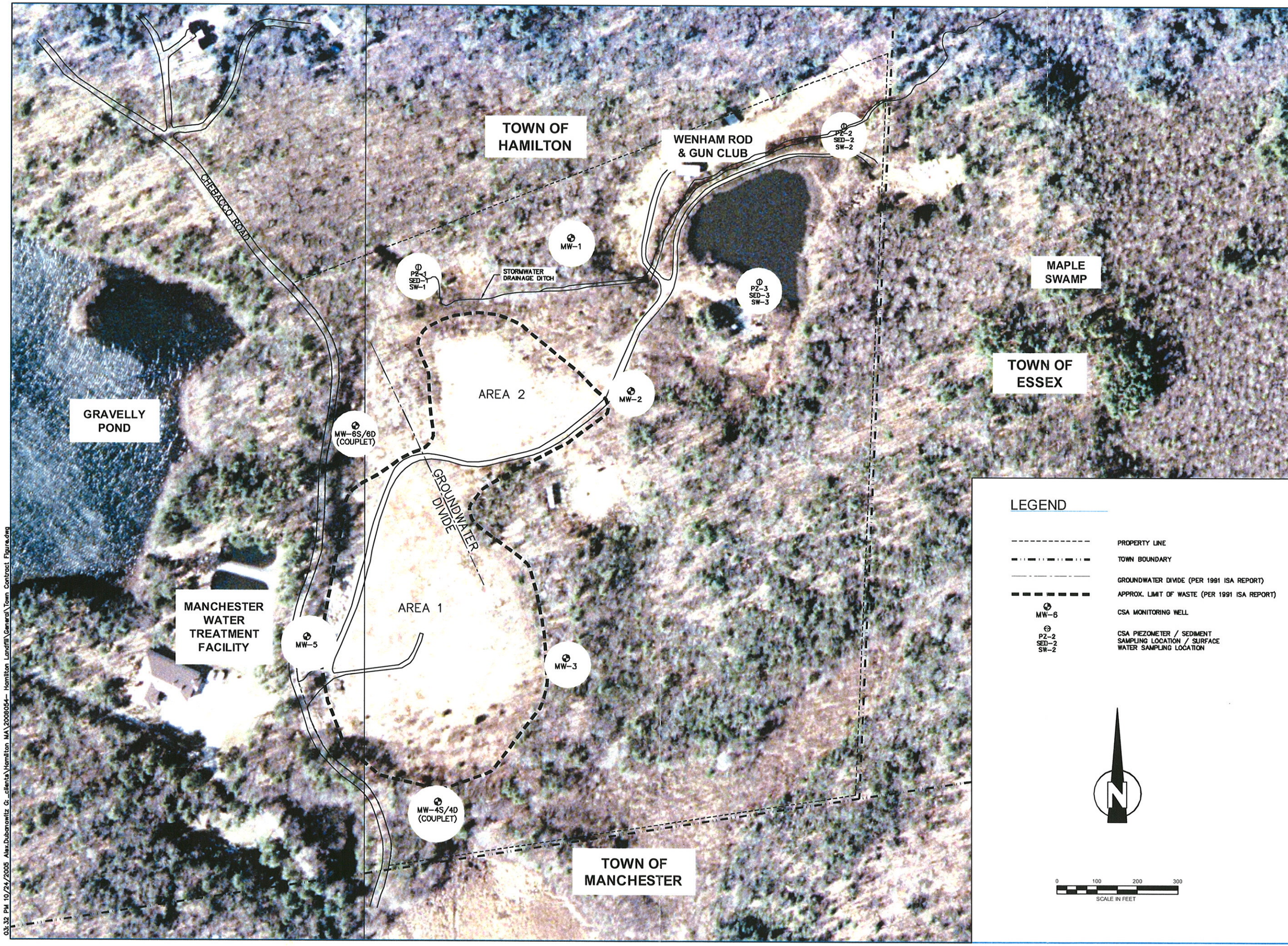
If you have any questions regarding the CSA monitoring program or enclosed monitoring results, please call me at (617) 498-4624.

Very truly yours,

S E A CONSULTANTS INC.

Stephen E. Wright, P.E.
Attachments
I:_clients\Hamilton MA\2006054.05 - CSA Monitoring\reports\Water Quality_3-07.doc

cc: Mr. Steven Kenney, Hamilton Department of Public Works
Alex Dubanowitz, S E A Consultants, Inc. (w/attachments)



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S E A Consultants Inc.
Scientists/Engineers/Architects
CONCORD NEW HAMPSHIRE ROCKY HILL CONNECTICUT
CAMBRIDGE MASSACHUSETTS

Scale	AS SHOWN
Date	FEBRUARY 2007
Job No	2008054-02A
Designed by	SEW
Drawn by	AJD
Checked by	SEW
Approved by	SEW

No.	Description	Date
	REVISIONS	

Client: TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON SANITARY LANDFILL

Drawing: CSA MONITORING LOCATIONS

Sheet

FIGURE 1

TABLE 1
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program
ROUND 1

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D SW-1, SW-2, SW-3	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080

NOTE: Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.

TABLE 2
Hamilton Sanitary Landfill
Comprehensive Site Assessment Sediment Monitoring
ROUND 1

Monitoring Points	Analytical Category		Description
SED-1, SED-2, SED-3	*Standard Parameters per 310 CMR 19.132*	Total Metals	Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080

TABLE 7
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program

ROUND 2 - Scheduled for May/June of 2007

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	**Not Applicable for Round 2**
		PCBs and Pesticides	**Not Applicable for Round 2**

NOTES:

1. Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.
2. No sediment or surface water sampling will be performed during Round 2. The next (final) round of CSA surface water and sediment monitoring is scheduled to be performed during the Round 3 monitoring event.

Table 3

Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill

LOCATION	WATER QUALITY STANDARDS				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE					05-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	05-MAR-07	06-MAR-07	06-MAR-07
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0703070-01	L0703115-01	L0703115-02	L0703115-03	L0703115-04	L0703070-02	L0703115-05	L0703115-06
Alkalinity, Total				mg CaCO3/L	16	83	8.8	<2	100	270	38	79
Solids, Total Dissolved			500	mg/l	130	160	55	31	140	420	130	220
Total Cyanide by MCP 9014												
Cyanide, Total	0.2	0.03		mg/l	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloride			250	mg/l	21	7.6	7	7.9	15	57	9.8	40
Nitrogen, Nitrate	10			mg/l	< 0.1	0.86	0.14	< 0.1	< 0.1	4.1	1.4	< 0.1
Sulfate			250	mg/l	20	34	< 10	< 10	< 10	12	31	35
Chemical Oxygen Demand				mg/l	< 20	45	< 20	< 20	< 20	< 20	< 20	< 20
Dissolved Metals by MCP 6000/7000 series												
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005	< 0.005	< 0.005	< 0.005	0.015	< 0.005	< 0.005	< 0.005
Barium, Dissolved	2	2		mg/l	0.02	0.033	0.027	0.029	0.065	0.311	0.018	0.031
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.0005	< 0.004	< 0.004	< 0.004	< 0.004	< 0.0005	< 0.004	< 0.004
Calcium, Dissolved				mg/l	7.6	18	4.8	1.2	36	80	21	28
Chromium, Dissolved	0.1	0.1		mg/l	< 0.01	< 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	< 0.01
Iron, Dissolved			0.3	mg/l	12	1.5	< 0.05	< 0.15	10	4.2	< 0.05	6.4
Lead, Dissolved	0.015	0.02		mg/l	< 0.0005	< 0.01	< 0.01	< 0.01	< 0.01	< 0.0005	< 0.01	< 0.01
Manganese, Dissolved			0.05	mg/l	0.749	2.22	0.385	0.037	6.23	0.548	< 0.01	5
Mercury, Dissolved	0.002	0.002		mg/l	< 0.0002	< 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	< 0.01
Silver, Dissolved		0.007	0.1	mg/l	< 0.0005	< 0.007	< 0.007	< 0.007	< 0.007	< 0.0005	< 0.007	< 0.007
Sodium, Dissolved	20*			mg/l	11	7.2	5.1	5.1	27	40	12	19
Zinc, Dissolved		0.9	5	mg/l	0.0088	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)												
1,2,4-Trimethylbenzene		10		mg/l	< 0.0025	0.022	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
1,3,5-Trimethylbenzene		0.1		mg/l	< 0.0025	0.0084	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Chlorobenzene	0.1	0.1		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0014	< 0.0005	< 0.0005	< 0.0005
Chloroform		0.005		mg/l	< 0.00075	< 0.00075	< 0.00075	< 0.00075	0.0016	< 0.00075	< 0.00075	< 0.00075
cis-1,2-Dichloroethene	0.07	0.07		mg/l	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005
Ethyl ether		1		mg/l	< 0.0025	< 0.0025	< 0.0025	< 0.0025	0.018	0.0046	< 0.0025	< 0.0025
Ethylbenzene	0.7	0.7		mg/l	< 0.0005	0.002	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Isopropylbenzene		10		mg/l	< 0.0005	0.00067	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Methyl tert butyl ether		0.07	20	mg/l	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0019
n-Butylbenzene				mg/l	< 0.0005	0.0042	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
n-Propylbenzene		1		mg/l	< 0.0005	0.0028	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Naphthalene		0.14		mg/l	< 0.0025	0.0031	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
o-Xylene	10	6		mg/l	< 0.001	0.0045	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
p-Isopropyltoluene				mg/l	< 0.0005	0.0014	< 0.0005	0.00073	< 0.0005	< 0.0005	< 0.0005	< 0.0005
p/m-Xylene	10	6		mg/l	< 0.001	0.0096	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
sec-Butylbenzene				mg/l	< 0.0005	0.0014	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005

Table 3

Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill

LOCATION	WATER QUALITY STANDARDS				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE					05-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	05-MAR-07	06-MAR-07	06-MAR-07
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0703070-01	L0703115-01	L0703115-02	L0703115-03	L0703115-04	L0703070-02	L0703115-05	L0703115-06
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)												
TOTAL SVOC's				mg/l	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)												
Aroclor 1016	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1221	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1232	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1242	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1248	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1254	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Aroclor 1260	0.0005	0.0003		mg/l	< 0.000284	***< 0.000352***	< 0.00026	< 0.00026	< 0.000266	< 0.000281	< 0.000275	< 0.000258
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)												
TOTAL Pesticides				mg/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

1. MMCL = Massachusetts DEP Maximum Contaminant Level for Drinking Water (Spring 2006).
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 2006). SMCLs are non-enforceable standards; however, these limits have been developed to protect the aesthetic quality of drinking water (i.e. odor and taste).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which 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 on Office of Research and Standards Guidelines (ORSG).

Table 4
Summary of Surface Water Analytical Results
Hamilton Sanitary Landfill

LOCATION	TOXICITY VALUES (AMBIENT WATER QUALITY CRITERIA) FRESH WATER		EPA WATER QUALITY CRITERIA			SW-1	SW-2	SW-3
SAMPLING DATE						05-MAR-07	05-MAR-07	05-MAR-07
LAB SAMPLE ID		TYPE	ACUTE (CMC)*	CHRONIC (CCC)**		L0703070-03	L0703070-04	L0703070-05
					Units			
Alkalinity, Total				20	mg CaCO3/L	< 2	18	21
Solids, Total Dissolved					mg/l	120	120	82
Total Cyanide by MCP 9014								
Cyanide, Total	0.001	CCC(SW)	0.022	0.0052	mg/l	< 0.005	< 0.005	< 0.005
Chloride			860	230	mg/l	24	22	6.6
Nitrogen, Nitrate					mg/l	0.28	0.17	0.1
Sulfate					mg/l	11	20	18
Chemical Oxygen Demand					mg/l	< 20	< 20	< 20
Dissolved Metals by MCP 6000/7000 series								
Arsenic, Dissolved	0.036	CCC(SW)	0.34	0.15	mg/l	< 0.005	< 0.005	< 0.005
Barium, Dissolved	41	A-LC50/10			mg/l	0.014	0.053	0.014
Cadmium, Dissolved	0.000091	CCC(FW)	0.002	0.00025	mg/l	< 0.005	< 0.005	< 0.0005
Calcium, Dissolved					mg/l	3.5	16	10
Chromium, Dissolved	0.011	CCC(FW)	0.57	0.074	mg/l	< 0.01	< 0.01	< 0.01
Copper, Dissolved			0.013	0.009	mg/l	< 0.01	< 0.01	< 0.01
Iron, Dissolved				1	mg/l	0.64	3.5	0.36
Lead, Dissolved	0.0005	CCC(FW)	0.065	0.0025	mg/l	0.0011	< 0.0005	< 0.0005
Manganese, Dissolved					mg/l	0.135	0.53	0.462
Mercury, Dissolved	0.00077	CCC(FW)	0.0014	0.00077	mg/l	< 0.0002	< 0.0002	< 0.0002
Selenium, Dissolved	0.005	CCC		0.005	mg/l	< 0.005	< 0.005	< 0.005
Silver, Dissolved	0.00003	CMC(FW)/10	0.0032		mg/l	< 0.0005	< 0.0005	< 0.0005
Sodium, Dissolved					mg/l	12	15	4.6
Zinc, Dissolved	0.036	CCC(FW)	0.12	0.12	mg/l	0.0148	0.0137	0.0086
Zinc, Dissolved	0.036	CCC(FW)	0.12	0.12	mg/l	< 0.05	< 0.05	< 0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)								
TOTAL VOCs					mg/l	ND	ND	ND
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)								
TOTAL SVOCs					mg/l	ND	ND	ND
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)								
TOTAL PCBs					mg/l	ND	ND	ND
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)								
TOTAL Pesticides					mg/l	ND	ND	ND

Notes:

1. In accordance with DEP requirements, surface water quality analytical results are to be compared to environmental toxicity values provided in section
2. In accordance with DEP requirements, surface water quality analytical results are to be compared to the most recent version of the EPA National

*- 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 indefinetly 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 detection limit.

Bolded and shaded values indicate analytical results which exceed the Environmental Toxicity Values or 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

SAMPLE ID	RECOMMENDED FRESHWATER			SED-1	SED-2	SED-3
SAMPLING DATE	SEDIMENT SCREENING VALUES*			3/5/2007	3/5/2007	3/5/2007
LAB SAMPLE ID	TEC*	PEC**		0703022-01	0703022-02	0703022-03
			Units			
Metals						
Chromium	43.4	110	mg/Kg	13	10	12
Arsenic	9.79	33	mg/Kg	0.97	40	6.2
Cadmium	0.99	5	mg/Kg	0.12	0.26	0.10
Sodium			mg/Kg	31	88	60
Zinc	121	460	mg/Kg	36	54	54
Selenium			mg/Kg	< 0.44	< 0.52	< 0.41
Lead	35.8	130	mg/Kg	6.0	33	8.6
Manganese			mg/Kg	130	210	310
Silver			mg/Kg	< 0.043	< 0.052	< 0.039
Iron			mg/Kg	8100	24000	17000
Barium			mg/Kg	8.6	23	34
Calcium			mg/Kg	920	1300	1700
Copper	31.6	150	mg/Kg	8.8	10	16
Mercury	0.18		mg/Kg	0.014	0.025	0.0088
Pesticides by 8081 (Results Above Detection Limits Only)						
2,4'-DDD	4.88		µg/Kg	< 0.13	< 0.16	< 0.12
2,4'-DDE	3.16		µg/Kg	< 0.13	< 0.16	< 0.12
2,4'-DDT	4.16		µg/Kg	< 0.13	< 0.16	< 0.12
4,4'-DDD	4.88		µg/Kg	< 0.13	0.25	< 0.12
4,4'-DDE	3.16		µg/Kg	< 0.13	0.53	< 0.12
4,4'-DDT	4.16		µg/Kg	< 0.13	0.95	< 0.12
alpha-Chlordane	3.24		µg/Kg	< 0.13	< 0.16	< 0.12
Dieldrin	1.9		µg/Kg	< 0.13	< 0.16	< 0.12
Endrin	2.22		µg/Kg	< 0.13	< 0.16	< 0.12
gamma-BHC			µg/Kg	< 0.13	< 0.16	< 0.12
gamma-Chlordane			µg/Kg	< 0.13	< 0.16	< 0.12
Heptachlor epoxide (B)	2.47		µg/Kg	< 0.13	< 0.16	< 0.12
Hexachlorobenzene			µg/Kg	< 0.13	< 0.16	< 0.12
Polychlorinated Biphenyls by 8082 (Results Above Detection Limits Only)						
TOTAL PCBs	59.8		µg/Kg	ND	ND	ND
Volatile Organics by 8260 (Results Above Detection Limits Only)						
Acetone			µg/Kg	< 510	1200	830
Methylene chloride			µg/Kg	580	1300	< 720
Semi-Volatile Organics by 8270 (Results Above Detection Limits Only)						
TOTAL SVOCs	1610		µg/Kg	ND	ND	ND

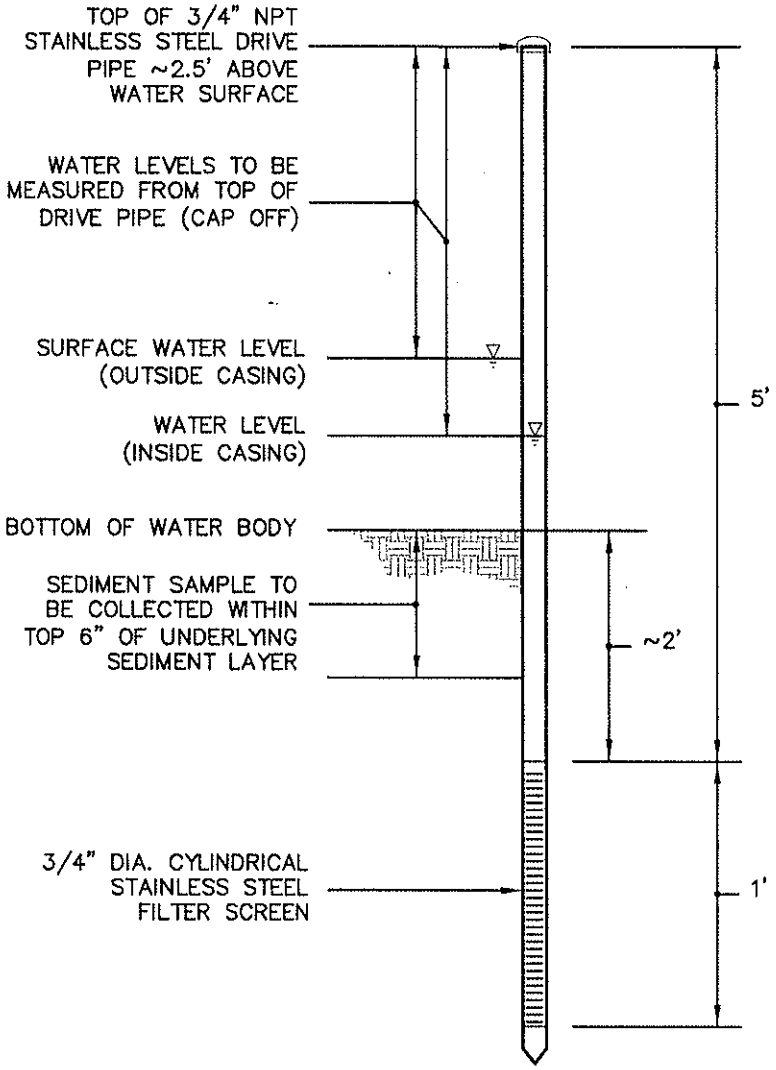
Notes:
* From DEP's May 2002 Technical Update entitled: "Freshwater Sediment Screening Benchmarks for Use Under the MCP"
** From DEP's Technical Update entitled "Revised Sediment Screening Values"
TEC = Threshold Effect Concentration (i.e. concentrations below which harmful effects are unlikely to be 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.

Table 6
Summary of Water Level Measurements
Hamilton Sanitary Landfill

SAMPLING DATE		05-MAR-07	
LOCATION	SCREEN DEPTH	WATER LEVEL	
	Feet (BGS)	Feet	
MONITORING WELLS			
MW-1	5 - 15	4.38	
MW-2	2 - 7	8.34	
MW-3	5 - 15	6.38	
MW-4S	2 - 12	5.93	
MW-4D	27 - 37	6.07	
MW-5	7 - 17	12.16	
MW-6S	7 - 17	19.45	
MW-6D	39 - 44	18.83	
PIEZOMETERS			
		WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)
PZ-1		1.81	1.85
PZ-2		2.06	2.21
PZ-3		2.06	2.09

Notes:

1. Groundwater levels at the monitoring wells were measured from the top of PVC riser.
2. Water depths were measured from the top of the piezometer drive pipe (cap off) from both inside and outside the casing at the three piezometers locations.



NOTES:

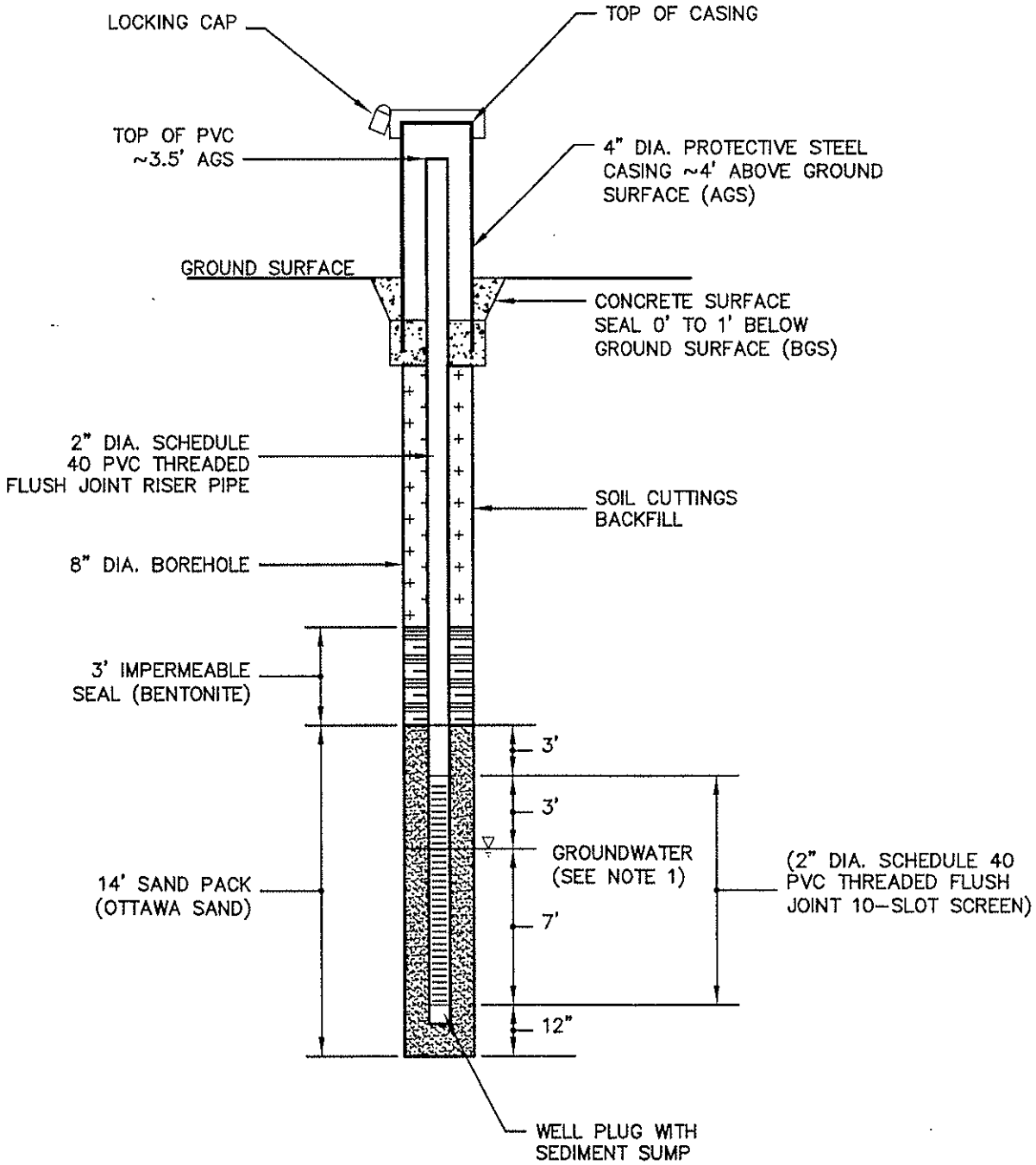
1. INSTALLED MODEL 615N STAINLESS STEEL DRIVE POINT PIEZOMETERS FROM SOLINST.
2. PIEZOMETERS WERE INSTALLED WITH DIRECT PUSH TECHNOLOGY USING A MANUAL SLIDE HAMMER.
3. PIEZOMETERS WERE INSTALLED FOR HYDRAULIC HEAD MEASUREMENTS.

PIEZOMETER DETAIL (PZ-1, 2 & 3)

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A Consultants Inc.
Scientists/Engineers/Architects
CAMBRIDGE, MASSACHUSETTS CONCORD, NEW HAMPSHIRE
ROCKY HILL, CONNECTICUT AUGUSTA, MAINE
STONEHAM, MASSACHUSETTS

G:_CLIENTS\HAMILTON MA\2006054-HAMILTON LANDFILL\CIVIL\PIEZOMETER.DWG



NOTES:

1. SHALLOW MONITORING WELLS TO BE SCREENED ACROSS THE WATER TABLE AS SHOWN.
2. CONTRACTOR TO PROVIDE BORING LOGS AND MONITORING WELL CONSTRUCTION LOGS UPON COMPLETION OF WELL INSTALLATION.
3. ENGINEER TO BE PRESENT DURING WELL INSTALLATION.

TYPICAL GROUNDWATER MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A Consultants Inc.
Scientists/Engineers/Architects
CAMBRIDGE, MASSACHUSETTS CONCORD, NEW HAMPSHIRE
ROCKY HILL, CONNECTICUT AUGUSTA, MAINE
STONEHAM, MASSACHUSETTS

G:_CLIENTS\HAMILTON MA\2006054-HAMILTON LANDFILL\CIVIL\MONITORING WELL.DWG

FIELD TEST BORING LOG

SHEET 1-1

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, ~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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/20	5-7	1/12" - 1/12"	PEAT ↓	S-1: 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 ↓	S-2 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
SA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=Split Spoon V=Vane	Little 10 to 20%	4-10	LOOSE	2-4	SOFT	TYPE	HW	SS	
BGS=Below Ground Surface	Some 20 to 35%	10-30	M. DENSE	4-8	M. STIFF	ID SIZE (IN)	4	1 3/8	
GS=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 Desigation				>50	HARD				

FIELD TEST BORING LOG

SHEET 1-1

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	**BORING NO:** MW-2 **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	4' BGS	NA	From observations of casing

Depth (ft.)	PID Reading (ppm)	Sample No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/18	5-7	4-6-6-7	SILT/ SAND ↓ ~7'	S-1: Sandy SILT - Slightly plastic silt, 20-35% very fine sand, no gravel, m. stiff, saturated, orangish brown, uniform.
						BOULDERS SOIL ↓	Refusal at 7' BGS so began coring. Cored through layers of rock, boulders and soil.
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.

Depth Range	Time (min.)
7-8	3
8-9	3
9-10	2

otes: 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
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
AS=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 Desigation				>50	HARD				

FIELD TEST BORING LOG

SHEET 1-1

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-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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	15/13	5-6'3"	13-20-60/3"	GRAVEL/ SAND ↓ ~6' SILT/ SOIL ↓ BOULDERS	S-1: 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. S-1B: Bottom 3" - Sandy SILT - Slightly plastic silt, 20-35% fine sand, no gravel, dense, orangish-gray. Refusal at 6'3" BGS. Was able to drive and wash through boulders.
10	-	S-2	24/6	10-12	12-16-14-20	~12' ROCK? ↓	S-2 Gravelly SAND - Coarse to fine well graded sand, <10% fines, 20-35% gravel, dense, saturated, brown, bouldery material between 6-12' BGS. 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.

Depth Range	Time (min)
12-13	10
13-14	9
14-15	7
15-16	8
16-17	7

Bottom of Boring at 17' BGS

otes: 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
A=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
:S=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 Desigation				>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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample	
5	-	S-1	24/18	5-7	5-4-5-7	SAND ↓	S-1:	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		S-2	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		S-3	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		S-4	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 ↓	S-5	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		S-6	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		S-7	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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
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	
Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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:** 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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
						~25' CLAY / SAND ↓	Between 35' and 40' BGS, the borehole was collapsing. Therefore, 3-inch casing was driven to keep the borehole open.
10	-	S-2	24/12	10-12	5-7-7-9		Bedrock encountered at 38' BGS. Between 37' and 38' BGS was mostly fractured rock. Cored from 38' to 43' BGS.
						~12' ROCK? ↓	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

otes:

Installed 2" diameter monitoring wells (MW-4S/D) in 4" borehole	MW-4D	MW-4S
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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
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	
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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
5	-	S-1	24/16	5-7	38-55-40-36	FILL ↓ ~8'	S-1: 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.
						PEAT (?) ↓ ~10'	
10	-	S-2	24/0	10-12	6-5-5-6		S-2 No Recovery. Sent SS down again to try and retrieve a sample and had no recovery again.
						SAND ↓	
15	-	S-3	24/8	15-17	6-5-6-6		S-3 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		S-4 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 ↓	S-5 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
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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 Desigation				>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:** 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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
						~27' ROCK ↓	Refusal at 27' BGS

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

otes: 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
:Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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	
Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>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:** 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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample	
5	-	S-1	24/14	5-7	10-8-10-10	FILL ↓	S-1:	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 ↓	S-2	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		S-3	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		S-4	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 ↓	S-5	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 ↓	S-6	Silty SAND - Medium to fine uniform sand, 10-20% non-plastic fines, no gravel, m. dense, saturated, gray.

otes:

ABBREVIATIONS USED	PROPORTIONS	GRANULAR SOILS		COHESIVE SOILS		EQUIPMENT USED	CASING	SAMPLER	CORE
D=Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
HA=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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
AS=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

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 No.	Pen/Rec	Depth	Blows/6 inches	Strata	Visual Indentification of Soil Sample
25	-	S-7	24/7	25-27	5-6-5-6	SILT/ SAND ↓	S-7: 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		S-8 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	~37' ROCK ↓	S-9 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
Dry C=Cored W=Washed		BLOWS/FT	DENSITY	BLOWS/FT	DENSITY				
A=Hollow Stem Auger	Trace 0 to 10 %	0-4	V. LOOSE	<2	V. SOFT				
SS=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	
Flush Joint V=Vane		>50	V. DENSE	15-30	V. STIFF	HAMMER FALL (IN)	30	30	
RQD=Rock Quality Desigation				>50	HARD				

EST environmental & industrial

51 Fremont Street, Needham, MA 02494
Tel: (781) 455-0003
Fax: (781) 455-8336
www.estassociates.com

GROUNDWATER MONITORING REPORT

Client: SEA Consultants
485 Massachusetts Ave
Cambridge, MA 02139
Attention: Mr. Alex Dubanowitz
Report Date: March 8, 2007

Site Location: Hamilton Sanitary Landfill
Sample Date: March 5-6, 2007
Weather Conditions: Cloudy, +/- 10°F
Field Technician(s): Adam Wallenstein, Ryan Decker

Location ID	SWL (feet)	pH (S.U.)	Cond (mS/cm)	Temp (°C)	DO (mg/L)
MW-1	4.38	6.75	0.173	7.30	1.21
MW-2	8.34	6.83	0.179	4.57	3.51
MW-3	6.38	7.12	0.031	1.63	8.89
MW-4S	5.93	5.67	0.029	4.38	8.91
MW-4D	6.07	7.06	0.552	6.35	13.95
MW-5	12.16	7.12	0.750	8.30	2.05
MW-6S	19.45	6.71	1.145	1.57	17.33
MW-6D	18.83	6.26	0.165	6.47	0.79
SW-1	--	5.33	0.145	1.73	3.91
SW-2	--	6.20	0.170	3.57	3.96
SW-3	--	8.87	0.114	1.18	9.77

Note(s):

- Appropriately preserved samples delivered to Alpha Analytical, Westborough, MA with the associated Chain of Custody documentation.
- Static Water Levels were measured from top of PVC Riser unless indicated otherwise.
- Measurements listed above indicate final stabilized field analytical results.
- Samples collected for dissolved metals analysis were field filtered to 0.45 micron.

Reviewed By: JEL

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-1

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RD + AW | DATE: 3/5/07 | SAMPLE TIME: 1310

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 4.38 (FT) | WELL DEPTH: 17.15 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1235	4.38	200	0	7.31	0.135	7.73	86	4.02		
1240	4.39	200	1	7.46	0.155	6.75	105	2.21		
1245	4.39	200	2	7.45	0.161	6.72	87	1.25		
1250	4.39	200	3	7.44	0.166	6.73	71	1.18		
1255	4.39	200	4	7.40	0.170	6.71	62	1.12		
1300	4.39	200	5	7.29	0.171	6.74	61	1.20		
1305	4.39	200	6	7.30	0.173	6.75	59	1.21		

FINAL FIELD DATA

pH: 6.75 (S.U.) | DO: 1.21 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.173 (mS/cm) | TURBIDITY: — (NTU)

TEMPERATURE: 7.30 (°C) | ORP: 59 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: Cloudy / ~38°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: (Y) N | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-2

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: R. Decker and Adam W. | DATE: 3/5/07 | SAMPLE TIME: (RD) ~~1430~~ 0830

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 8.34 (FT) | WELL DEPTH: 10.18 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1345	8.91	200	0	4.46	0.191	6.91	117	4.26		
1350	9.53	100	0.5	4.57	0.179	6.83	136	3.51		
[illegible]										

FINAL FIELD DATA

pH: (S.U.) | DO: (mg/L) | COMMENTS: well went dry; So, allowed for recharge and then sampled well.

SPECIFIC CONDUCTANCE: (mS/cm) | TURBIDITY: (NTU)

TEMPERATURE: (°C) | ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS: Cloudy / ~30°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: Y (N)

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID:

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RB [illegible] | DATE: 3/5/12 | SAMPLE TIME: 0945

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 6.38 (FT) | WELL DEPTH: [illegible] (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
0915	6.38	200	0	1.59	0.044	9.70	53.0	10.39		
0920	6.38	200	1	1.23	0.039	8.10	73.4	8.57		
0925	6.38	200	2	1.41	0.039	7.49	93.2	8.69		
0930	6.38	200	3	1.57	0.033	7.17	101.7	8.23		
0935	6.38	200	4	1.61	0.029	7.13	103.3	8.90		
0940	6.38	200	5	1.63	0.031	7.12	102.1	8.69		

FINAL FIELD DATA

pH: 7.12 (S.U.) | DO: 8.69 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.031 (mS/cm) | TURBIDITY: — (NTU)

TEMPERATURE: 1.63 (°C) | ORP: 102.1 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: clear, ~18°F, windy

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: Y N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-4S

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RD & AW | DATE: 3/6/07 | SAMPLE TIME: 1110

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 5.93 (FT) | WELL DEPTH: 15.01 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1045	5.95	200	0	3.92	0.029	5.83	167.4	9.15	—	
1050	5.95	200	1	4.36	0.029	5.70	163.9	9.07	—	
1055	5.95	200	2	4.47	0.029	5.69	162.7	9.00	—	
1100	5.95	200	3	4.29	0.029	5.70	162.5	8.92	—	
1105	5.95	200	4	4.38	0.029	5.67	163.1	8.91	—	

FINAL FIELD DATA

pH: 5.67 (S.U.) | DO: 8.91 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.029 (mS/cm) | TURBIDITY: ~ (NTU)

TEMPERATURE: 4.38 (°C) | ORP: 163.1 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: Clear, windy, 10°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y N | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y N | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-40

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: AW | DATE: 3/6/07 | SAMPLE TIME: 1125

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Peristaltic

DEPTH TO WATER: 6.07 (FT) | WELL DEPTH: 39.5 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1055	6.18	200		1.65	0.447	7.76	-20.6	13.27	—	—
1100	6.18	200		5.16	0.511	7.77	-10.1	13.72	—	—
1105	6.17	200		5.62	0.514	7.78	-36.2	13.86	—	—
1110	6.17	200		6.11	0.532	7.69	-40.7	14.01	—	—
1115	6.17	200		6.22	0.546	7.67	-40.7	13.99	—	—
1120	6.17	200		6.29	0.550	7.62	-40.6	13.42		
1125	6.17	200		6.35	0.552	7.06	-40.6	13.95		

FINAL FIELD DATA

pH: 7.06 (S.U.) | DO: 13.95 (mg/L) | COMMENTS: None

SPECIFIC CONDUCTANCE: 0.552 (mS/cm) | TURBIDITY: — (NTU)

TEMPERATURE: 6.35 (°C) | ORP: -40.6 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear, no odor

WEATHER CONDITIONS: clear, windy, 10°

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-5

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: AW/RD | DATE: 3/5/07 | SAMPLE TIME: 1010

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 12.16 (FT) | WELL DEPTH: 20.11 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
0930	12.17	200	0	8.11	0.737	6.76	193	3.19		
0935	12.17	200	1	8.49	0.740	6.89	168	3.43		
0940	12.17	200	2	8.42	0.747	7.01	126	2.90		
0945	12.17	200	3	8.43	0.754	7.07	89	2.43		
0950	12.17	200	4	8.29	0.752	7.10	73	2.25		
0955	12.17	200	5	8.25	0.749	7.11	70	2.18		
1000	12.17	200	6	8.29	0.751	7.11	68	2.06		
1005	12.17	200	7	8.30	0.750	7.12	67	2.05		

FINAL FIELD DATA

pH: 7.12 (S.U.) | DO: 2.05 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.750 (mS/cm) | TURBIDITY: (NTU)

TEMPERATURE: 8.30 (°C) | ORP: 67 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: Cloudy ~ 27°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe: N/A

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW. 6S

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: AW | DATE: 3/6/07 | SAMPLE TIME: 1235

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Peristaltic

DEPTH TO WATER: 19.45 (FT) | WELL DEPTH: (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1210	19.47	200		3.05	1.209	6.65	-108.8	16.23	-	-
1215	19.46	200		1.82	1.472	6.55	-54.8	17.48	-	-
1220	19.46	200		1.78	1.151	6.67	-39.8	17.47	-	-
1225	19.45	200		1.62	1.148	6.68	-35.1	17.42	-	-
1230	19.45	200		1.59	1.146	6.70	-32.8	17.36	-	-
1235	19.44	200		1.57	1.145	6.71	-30.8	17.33	-	-

FINAL FIELD DATA

pH: 6.71 (S.U.) | DO: 17.33 (mg/L) | COMMENTS: None

SPECIFIC CONDUCTANCE: 1.145 (mS/cm) | TURBIDITY: - (NTU)

TEMPERATURE: 1.57 (°C) | ORP: -30.8 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear no odor

WEATHER CONDITIONS: clear windy 10°

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-6D

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RD & AW | DATE: 3/6/07 | SAMPLE TIME: 1240

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Peristaltic Pump

DEPTH TO WATER: 18.83 (FT) | WELL DEPTH: 46.75 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1210	18.86	200	0	7.10	0.155	6.04	110.7	1.48	—	
1215	18.87	200	1	6.43	0.157	6.06	92.7	0.91	—	
1220	18.87	200	2	6.37	0.165	6.23	61.9	0.80	—	
1225	18.87	200	3	6.44	0.166	6.24	56.2	0.74	—	
1230	18.87	200	4	6.48	0.168	6.27	54.7	0.78	—	
1235	18.87	200	5	6.47	0.162	6.26	53.8	0.79	—	

FINAL FIELD DATA

pH: 6.26 (S.U.) | DO: 0.79 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.165 (mS/cm) | TURBIDITY: — (NTU)

TEMPERATURE: 6.47 (°C) | ORP: 53.8 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: Clear / no odor

WEATHER CONDITIONS: Clear, windy, ~10°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: SW-1

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: AW | DATE: 3/5/07 | SAMPLE TIME: 1330

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: —

DEPTH TO WATER: — (FT) | WELL DEPTH: — (FT) | Well Diameter: —

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
										Piezometer
										DtWin 1.81
										DtWout 1.85

FINAL FIELD DATA

pH: 5.33 (S.U.) | DO: 3.91 (mg/L) | COMMENTS: None

SPECIFIC CONDUCTANCE: 0.145 (mS/cm) | TURBIDITY: — (NTU)

TEMPERATURE: 1.73 (°C) | ORP: 237 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: Murky No odor

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: Y N | Concrete pad present: Y N | Cap on riser: Y N

Protective Casing Locked: Y N | Standing Water: Y N | Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

LST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: SW-2

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RD + AW | DATE: 3/5/07 | SAMPLE TIME: 1100

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: —

DEPTH TO WATER: — (FT) | WELL DEPTH: — (FT) | Well Diameter: —

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1100	—	—	—	3.57	0.170	6.20	195	3.96		

FINAL FIELD DATA

pH: (S.U.) | DO: (mg/L) | COMMENTS: Surface water samples only

SPECIFIC CONDUCTANCE: (mS/cm) | TURBIDITY: (NTU)

TEMPERATURE: (°C) | ORP: (MV)

PZ-2 - 2.06' dtw inside

2.21' dtw outside

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS: Cloudy / ~30°F

WELL CONDITION DATA

Protective Casing Present: Y N | Concrete pad present: Y N | Cap on riser: Y N

Protective Casing Locked: Y N | Standing Water: Y N | Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: SW-3

LOCATION: Hamilton Sanitary Landfill

SAMPLING CREW: RD + AW DATE: 3/5/07 SAMPLE TIME: 1200

PURGING DATA

REFERENCE POINT: PVC Steel Casing PURGING DEVICE: —

DEPTH TO WATER: — (FT) WELL DEPTH: — (FT) Well Diameter: —

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1200	—	—	—	1.18	0.114	8.57	108	9.77		

FINAL FIELD DATA

pH: (S.U.) DO: (mg/L) COMMENTS: surface water sample only

SPECIFIC CONDUCTANCE: (mS/cm) TURBIDITY: (NTU)

TEMPERATURE: (°C) ORP: (MV)

PZ-3 - 2.06' dtw inside

2.09' dtw outside

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: Y N Concrete pad present: Y N Cap on riser: Y N

Protective Casing Locked: Y N Standing Water: Y N Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE:

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

ALPHA Job # L0703070

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630

Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

Analytical Information

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Type Plastic	Type VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	PCB's & Pesticides (5)
MW-1	3/5/07	1310	2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-2~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-3~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-4S~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-4D~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
MW-5		1010	2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-6S~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
~~MW-6D~~			2	4	4	2	X	X	X	X			X	X	X	X	X	X
SW-1		1330	2	4	4	2	X	X	X	X			X	X	X	X	X	X
SW-2		1100	2	4	4	2	X	X	X	X			X	X	X	X	X	X
SW-3		1200	2	4	4	2	X	X	X	X			X	X	X	X	X	X

EST to invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Comments:

EST to complete Temp, pH

Spec. Cond. & DO in field

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By: _____

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (Including PAH's)

(5) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possesion, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/5/07 1600	1 [signature]	3/5/07 1600
2 [signature]	3/5/07 1700	2 [signature]	3-5-07 1700
3		3	

Seal # _____ ☐ Preserve where applicable ☐ On Ice ☐ Temp.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

ALPHA Job # L0703415

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type: Glass	Plastic	VOA's	Preservation: HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	PCB's & Pesticides (5)	Comments:
MW-2	3/6/2007	0830	2	~~4~~ 3	5	2**	X	X	X	X			X	X	X	X	X	X	Spec. Cond. & DO in field
MW-3	3/6/2007	0945	2	4	5	2	X	X	X	X			X	X	X	X	X	X	
MW-4S	3/6/2007	1110	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	
MW-4D	3/6/2007	1125	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	
MW-6S	3/6/2007	1225	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	
MW-6D	3/6/2007	1240	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By: _____

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (including PAH's)

(5) PCBs and Pesticides by EPA Method 8080

**2 VOA's for MW-2 submitted one day prior (3/5/07).

Sample Custody must be documented below each time samples change possesion, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/6/07 1520	1 Don Barth	3/6/07 1540
2 Don Barth	3/6/07 1645	2 [signature]	3/6/07 1645
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630

Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Sediment Sampling PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type: Glass	Plastic	VOA's	Preservation: HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Total Metals (1)	VOCs (2)	ABN Extractable Compounds (3)	PCB's & Pesticides (4)	Comments:
SED-1	3/5/07	1330	6	2		1					X		X	X	X	X	X	
SED-2	↓	1100	6	2		1					X		X	X	X	X	X	
SED-3	↓	1200	6	2		1					X		X	X	X	X	X	

Turnaround Information

- [ ] Std. 10 Day Turnaround
- [ ] 7 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *RUSH*

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Additional Information

(1) Total Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na

(2) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(3) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (Including PAH's)

(4) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
	3/5/07 1600		
Relinquished by Sampler: 2	Date Time:	Received By: 2	Date Time:
Relinquished by Sampler: 3	Date Time:	Received By: 3	Date Time:

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

ALPHA
WOODS HOLE LABS

ANALYTICAL REPORT

Lab Number:	L0703070
Client:	SEA Consultants 485 Massachusetts Avenue Cambridge, MA 02139
ATTN:	Alex Dubanowitz
Project Name:	HAMILTON SANITARY LANDFILL
Project Number:	Not Specified
Report Date:	03/26/07

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (200305), NJ (MA935), RI (LAO00065), ME (2006012), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Sample Location
L0703070-01	MW-1	HAMILTON, MA.
L0703070-02	MW-5	HAMILTON, MA.
L0703070-03	SW-1	HAMILTON, MA.
L0703070-04	SW-2	HAMILTON, MA.
L0703070-05	SW-3	HAMILTON, MA.

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	N/A

A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Case Narrative

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

Report submission

This report replaces the report issued on March 14, 2007 to include the analysis of Semi-Volatile Organics by Method 8270-SIM to achieve GW-1 standards.

MCP Related Narratives

Sample Receipt

The samples were Field Filtered for Dissolved Metals only.

Volatile Organics

In reference to question E:

The LCS/LCSD % recoveries are above method acceptance criteria for Trichlorofluoromethane.

The LCS/LCSD RPD is above method acceptance criteria for Carbon tetrachloride.

SemiVolatile Organics

In reference to question E:

The LCS/LCSD % recoveries are below method acceptance criteria for Aniline and 4-Chloroaniline, but within overall method criteria.

The LCS % recovery is below method acceptance criteria for Phenol, but within overall method criteria.

The LCS/LCSD RPDs are above method acceptance criteria for Bis(2-chloroethoxy)methane and Phenol.

PCB

L0703070-03 has elevated detection limits due to limited sample volume submitted.

In reference to question E:

L0703070-01 through -05: The Continuing Calibration criteria was not met for the confirmatory column; however, all associated samples were non-detect for the target analytes, therefore no further actions were taken.

Pesticides

L0703070-03 has elevated detection limits due to limited sample volume submitted.

Case Narrative (continued)

In reference to question E:

The LCS/LCSD RPDs are above method acceptance criteria for Alpha-BHC and Hexachlorobenzene.

Metals

In reference to question F:

At the client's request, all submitted samples were not analyzed for the full MCP list of compounds specified for the Method.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kathleen M. O'Brien

Title: Technical Director

Date: 03/26/07

ORGANICS

VOLATILES

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 16:48		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	116		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 17:22		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	4.6		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	121		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 17:58		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
ert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	120		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 18:33		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0703070-04 Date Collected: 03/05/07 11:00
Client ID: SW-2 Date Received: 03/05/07
Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	124		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 19:08		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	117		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-05 Batch: WG272653-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703070

Project Number: Not Specified **Report Date:** 03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-05 Batch: WG272653-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703070

Project Number: Not Specified **Report Date:** 03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-05 Batch: WG272653-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	105		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-05 Batch: WG272653-1 WG272653-2					
Methylene chloride	113	109	70-130	4	25
1,1-Dichloroethane	119	109	70-130	9	25
Chloroform	118	108	70-130	9	25
Carbon tetrachloride	124	87	70-130	35	25
1,2-Dichloropropane	104	99	70-130	5	25
Dibromochloromethane	86	82	70-130	5	25
1,1,2-Trichloroethane	90	94	70-130	4	25
Tetrachloroethene	101	96	70-130	5	25
Chlorobenzene	95	93	70-130	2	25
Trichlorofluoromethane	157	138	70-130	13	25
1,2-Dichloroethane	120	109	70-130	10	25
1,1,1-Trichloroethane	116	104	70-130	11	25
Bromodichloromethane	108	95	70-130	13	25
trans-1,3-Dichloropropene	81	84	70-130	4	25
cis-1,3-Dichloropropene	91	87	70-130	4	25
1,1-Dichloropropene	115	106	70-130	8	25
Bromoform	78	78	70-130	0	50
1,1,2,2-Tetrachloroethane	80	80	70-130	0	25
Benzene	105	100	70-130	5	25
Toluene	100	95	70-130	5	25
Ethylbenzene	105	100	70-130	5	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-05 Batch: WG272653-1 WG272653-2					
Chloromethane	99	93	70-130	6	50
Bromomethane	98	108	70-130	10	50
Vinyl chloride	109	98	70-130	11	25
Chloroethane	118	110	70-130	7	25
1,1-Dichloroethene	113	109	70-130	4	25
trans-1,2-Dichloroethene	115	105	70-130	9	25
Trichloroethene	108	101	70-130	7	25
1,2-Dichlorobenzene	89	84	70-130	6	25
1,3-Dichlorobenzene	95	90	70-130	5	25
1,4-Dichlorobenzene	93	88	70-130	6	25
Methyl tert butyl ether	118	120	70-130	2	25
p/m-Xylene	102	97	70-130	5	25
o-Xylene	101	96	70-130	5	25
cis-1,2-Dichloroethene	110	103	70-130	7	25
Dibromomethane	115	105	70-130	9	25
1,2,3-Trichloropropane	94	93	70-130	1	25
Styrene	103	97	70-130	6	25
Dichlorodifluoromethane	87	78	70-130	11	50
Acetone	112	107	70-130	5	50
Carbon disulfide	102	96	70-130	6	25
2-Butanone	104	103	70-130	1	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-05 Batch: WG272653-1 WG272653-2					
4-Methyl-2-pentanone	100	96	70-130	4	50
2-Hexanone	96	99	70-130	3	50
Bromochloromethane	104	101	70-130	3	25
Tetrahydrofuran	78	82	70-130	5	25
2,2-Dichloropropane	78	74	70-130	5	50
1,2-Dibromoethane	97	96	70-130	1	25
1,3-Dichloropropane	95	95	70-130	0	25
1,1,1,2-Tetrachloroethane	101	94	70-130	7	25
Bromobenzene	93	90	70-130	3	25
n-Butylbenzene	98	93	70-130	5	25
sec-Butylbenzene	97	90	70-130	7	25
tert-Butylbenzene	97	92	70-130	5	25
o-Chlorotoluene	102	97	70-130	5	25
p-Chlorotoluene	102	95	70-130	7	25
1,2-Dibromo-3-chloropropane	76	76	70-130	0	50
Hexachlorobutadiene	92	84	70-130	9	25
Isopropylbenzene	109	103	70-130	6	25
p-Isopropyltoluene	99	94	70-130	5	25
Naphthalene	82	83	70-130	1	25
n-Propylbenzene	103	98	70-130	5	25
1,2,3-Trichlorobenzene	84	85	70-130	1	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-05 Batch: WG272653-1 WG272653-2					
1,2,4-Trichlorobenzene	85	82	70-130	4	25
1,3,5-Trimethylbenzene	103	96	70-130	7	25
1,2,4-Trimethylbenzene	103	98	70-130	5	25
Ethyl ether	106	102	70-130	4	25
Isopropyl Ether	110	106	70-130	4	25
Ethyl-Tert-Butyl-Ether	101	97	70-130	4	25
Tertiary-Amyl Methyl Ether	89	85	70-130	5	25
1,4-Dioxane	83	97	70-130	16	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		115		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	104		101		70-130
Dibromofluoromethane	113		109		70-130

SEMIVOLATILES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/06/07 18:15
Analytical Date:	03/07/07 22:21		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.6	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.6	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.6	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	9.6	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.8	1
2,4-Dichlorophenol	ND		ug/l	9.6	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.6	1
2,4-Dinitrophenol	ND		ug/l	19	1
Pentachlorophenol	ND		ug/l	19	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.8	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.8	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	27		15-110
Phenol-d6	24		15-110
Nitrobenzene-d5	44		30-130
2-Fluorobiphenyl	44		30-130
2,4,6-Tribromophenol	62		15-110
4-Terphenyl-d14	65		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	03/06/07 18:15
Analytical Date:	03/22/07 04:44		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.19	1
2-Chloronaphthalene	ND		ug/l	0.19	1
Fluoranthene	ND		ug/l	0.19	1
Hexachlorobutadiene	ND		ug/l	0.48	1
Naphthalene	ND		ug/l	0.19	1
Benzo(a)anthracene	ND		ug/l	0.19	1
Benzo(a)pyrene	ND		ug/l	0.19	1
Benzo(b)fluoranthene	ND		ug/l	0.19	1
Benzo(k)fluoranthene	ND		ug/l	0.19	1
Chrysene	ND		ug/l	0.19	1
Acenaphthylene	ND		ug/l	0.19	1
Anthracene	ND		ug/l	0.19	1
Benzo(ghi)perylene	ND		ug/l	0.19	1
Fluorene	ND		ug/l	0.19	1
Phenanthrene	ND		ug/l	0.19	1
Dibenzo(a,h)anthracene	ND		ug/l	0.19	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.19	1
Pyrene	ND		ug/l	0.19	1
2-Methylnaphthalene	ND		ug/l	0.19	1
Pentachlorophenol	ND		ug/l	0.77	1
Hexachlorobenzene	ND		ug/l	0.77	1
Hexachloroethane	ND		ug/l	0.77	1

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		15-110
Phenol-d6	33		15-110
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	76		15-110
4-Terphenyl-d14	65		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/06/07 18:15
Analytical Date:	03/07/07 22:46		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.6	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.6	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.6	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	9.6	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.7	1
2,4-Dichlorophenol	ND		ug/l	9.6	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.6	1
2,4-Dinitrophenol	ND		ug/l	19	1
Pentachlorophenol	ND		ug/l	19	1
Phenol	ND		ug/l	6.7	1
2-Methylphenol	ND		ug/l	5.7	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.7	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		15-110
Phenol-d6	31		15-110
Nitrobenzene-d5	52		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	69		15-110
4-Terphenyl-d14	72		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	03/06/07 18:15
Analytical Date:	03/22/07 05:23		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.19	1
2-Chloronaphthalene	ND		ug/l	0.19	1
Fluoranthene	ND		ug/l	0.19	1
Hexachlorobutadiene	ND		ug/l	0.48	1
Naphthalene	ND		ug/l	0.19	1
Benzo(a)anthracene	ND		ug/l	0.19	1
Benzo(a)pyrene	ND		ug/l	0.19	1
Benzo(b)fluoranthene	ND		ug/l	0.19	1
Benzo(k)fluoranthene	ND		ug/l	0.19	1
Chrysene	ND		ug/l	0.19	1
Acenaphthylene	ND		ug/l	0.19	1
Anthracene	ND		ug/l	0.19	1
Benzo(ghi)perylene	ND		ug/l	0.19	1
Fluorene	ND		ug/l	0.19	1
Phenanthrene	ND		ug/l	0.19	1
Dibenzo(a,h)anthracene	ND		ug/l	0.19	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.19	1
Pyrene	ND		ug/l	0.19	1
2-Methylnaphthalene	ND		ug/l	0.19	1
Pentachlorophenol	ND		ug/l	0.76	1
Hexachlorobenzene	ND		ug/l	0.76	1
Hexachloroethane	ND		ug/l	0.76	1

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		15-110
Phenol-d6	40		15-110
Nitrobenzene-d5	82		30-130
2-Fluorobiphenyl	82		30-130
2,4,6-Tribromophenol	76		15-110
4-Terphenyl-d14	88		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03
Client ID:	SW-1
Sample Location:	HAMILTON, MA.
Matrix:	Water
Anaytical Method:	64,8270C
Analytical Date:	03/07/07 23:11
Analyst:	RL

Date Collected:	03/05/07 13:30
Date Received:	03/05/07
Field Prep:	Field Filtered
Extraction Method:	EPA 3510C
Extraction Date:	03/06/07 18:15

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	6.9	1
1,2,4-Trichlorobenzene	ND		ug/l	6.9	1
Hexachlorobenzene	ND		ug/l	6.9	1
Bis(2-chloroethyl)ether	ND		ug/l	6.9	1
2-Chloronaphthalene	ND		ug/l	6.9	1
1,2-Dichlorobenzene	ND		ug/l	6.9	1
1,3-Dichlorobenzene	ND		ug/l	6.9	1
1,4-Dichlorobenzene	ND		ug/l	6.9	1
3,3'-Dichlorobenzidine	ND		ug/l	14	1
2,4-Dinitrotoluene	ND		ug/l	6.9	1
2,6-Dinitrotoluene	ND		ug/l	6.9	1
Azobenzene	ND		ug/l	6.9	1
Fluoranthene	ND		ug/l	6.9	1
4-Bromophenyl phenyl ether	ND		ug/l	6.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	6.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	6.9	1
Hexachlorobutadiene	ND		ug/l	14	1
Hexachloroethane	ND		ug/l	6.9	1
Isophorone	ND		ug/l	6.9	1
Naphthalene	ND		ug/l	6.9	1
Nitrobenzene	ND		ug/l	6.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	14	1
Butyl benzyl phthalate	ND		ug/l	6.9	1
Di-n-butylphthalate	ND		ug/l	6.9	1
Di-n-octylphthalate	ND		ug/l	6.9	1
Diethyl phthalate	ND		ug/l	6.9	1
Dimethyl phthalate	ND		ug/l	6.9	1
Benzo(a)anthracene	ND		ug/l	6.9	1
Benzo(a)pyrene	ND		ug/l	6.9	1
Benzo(b)fluoranthene	ND		ug/l	6.9	1

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	6.9	1
Chrysene	ND		ug/l	6.9	1
Acenaphthylene	ND		ug/l	6.9	1
Anthracene	ND		ug/l	6.9	1
Benzo(ghi)perylene	ND		ug/l	6.9	1
Fluorene	ND		ug/l	6.9	1
Phenanthrene	ND		ug/l	6.9	1
Dibenzo(a,h)anthracene	ND		ug/l	6.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	6.9	1
Pyrene	ND		ug/l	6.9	1
Aniline	ND		ug/l	14	1
4-Chloroaniline	ND		ug/l	6.9	1
Dibenzofuran	ND		ug/l	6.9	1
2-Methylnaphthalene	ND		ug/l	6.9	1
Acetophenone	ND		ug/l	28	1
2,4,6-Trichlorophenol	ND		ug/l	6.9	1
2-Chlorophenol	ND		ug/l	8.3	1
2,4-Dichlorophenol	ND		ug/l	14	1
2,4-Dimethylphenol	ND		ug/l	6.9	1
2-Nitrophenol	ND		ug/l	28	1
4-Nitrophenol	ND		ug/l	14	1
2,4-Dinitrophenol	ND		ug/l	28	1
Pentachlorophenol	ND		ug/l	28	1
Phenol	ND		ug/l	9.7	1
2-Methylphenol	ND		ug/l	8.3	1
3-Methylphenol/4-Methylphenol	ND		ug/l	8.3	1
2,4,5-Trichlorophenol	ND		ug/l	6.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		15-110
Phenol-d6	47		15-110
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	81		15-110
4-Terphenyl-d14	74		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	03/06/07 18:15
Analytical Date:	03/22/07 06:03		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.28	1
2-Chloronaphthalene	ND		ug/l	0.28	1
Fluoranthene	ND		ug/l	0.28	1
Hexachlorobutadiene	ND		ug/l	0.69	1
Naphthalene	ND		ug/l	0.28	1
Benzo(a)anthracene	ND		ug/l	0.28	1
Benzo(a)pyrene	ND		ug/l	0.28	1
Benzo(b)fluoranthene	ND		ug/l	0.28	1
Benzo(k)fluoranthene	ND		ug/l	0.28	1
Chrysene	ND		ug/l	0.28	1
Acenaphthylene	ND		ug/l	0.28	1
Anthracene	ND		ug/l	0.28	1
Benzo(ghi)perylene	ND		ug/l	0.28	1
Fluorene	ND		ug/l	0.28	1
Phenanthrene	ND		ug/l	0.28	1
Dibenzo(a,h)anthracene	ND		ug/l	0.28	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.28	1
Pyrene	ND		ug/l	0.28	1
2-Methylnaphthalene	ND		ug/l	0.28	1
Pentachlorophenol	ND		ug/l	1.1	1
Hexachlorobenzene	ND		ug/l	1.1	1
Hexachloroethane	ND		ug/l	1.1	1

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		15-110
Phenol-d6	59		15-110
Nitrobenzene-d5	105		30-130
2-Fluorobiphenyl	100		30-130
2,4,6-Tribromophenol	85		15-110
4-Terphenyl-d14	95		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/06/07 18:15
Analytical Date:	03/07/07 23:35		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.8	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	9.8	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	20	1
Pentachlorophenol	ND		ug/l	20	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		15-110
Phenol-d6	40		15-110
Nitrobenzene-d5	65		30-130
2-Fluorobiphenyl	64		30-130
2,4,6-Tribromophenol	75		15-110
4-Terphenyl-d14	77		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	03/06/07 18:15
Analytical Date:	03/22/07 06:43		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		15-110
Phenol-d6	46		15-110
Nitrobenzene-d5	94		30-130
2-Fluorobiphenyl	94		30-130
2,4,6-Tribromophenol	83		15-110
4-Terphenyl-d14	82		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/06/07 18:15
Analytical Date:	03/08/07 00:00		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.9	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.9	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	9.9	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.9	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.9	1
2,4-Dinitrophenol	ND		ug/l	20	1
Pentachlorophenol	ND		ug/l	20	1
Phenol	ND		ug/l	6.9	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		15-110
Phenol-d6	30		15-110
Nitrobenzene-d5	56		30-130
2-Fluorobiphenyl	55		30-130
2,4,6-Tribromophenol	66		15-110
4-Terphenyl-d14	78		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	03/06/07 18:15
Analytical Date:	03/22/07 07:24		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.79	1
Hexachlorobenzene	ND		ug/l	0.79	1
Hexachloroethane	ND		ug/l	0.79	1

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	32		15-110
Phenol-d6	36		15-110
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	86		30-130
2,4,6-Tribromophenol	53		15-110
4-Terphenyl-d14	85		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C
Analytical Date: 03/07/07 18:46
Analyst: RL

Extraction Method: EPA 3510C
Extraction Date: 03/06/07 18:15

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-05 Batch: WG272453-1				
Acenaphthene	ND		ug/l	5.0
1,2,4-Trichlorobenzene	ND		ug/l	5.0
Hexachlorobenzene	ND		ug/l	5.0
Bis(2-chloroethyl)ether	ND		ug/l	5.0
2-Chloronaphthalene	ND		ug/l	5.0
1,2-Dichlorobenzene	ND		ug/l	5.0
1,3-Dichlorobenzene	ND		ug/l	5.0
1,4-Dichlorobenzene	ND		ug/l	5.0
3,3'-Dichlorobenzidine	ND		ug/l	10
2,4-Dinitrotoluene	ND		ug/l	5.0
2,6-Dinitrotoluene	ND		ug/l	5.0
Azobenzene	ND		ug/l	5.0
Fluoranthene	ND		ug/l	5.0
4-Bromophenyl phenyl ether	ND		ug/l	5.0
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0
Bis(2-chloroethoxy)methane	ND		ug/l	5.0
Hexachlorobutadiene	ND		ug/l	10
Hexachloroethane	ND		ug/l	5.0
Isophorone	ND		ug/l	5.0
Naphthalene	ND		ug/l	5.0
Nitrobenzene	ND		ug/l	5.0
Bis(2-Ethylhexyl)phthalate	ND		ug/l	10
Butyl benzyl phthalate	ND		ug/l	5.0
Di-n-butylphthalate	ND		ug/l	5.0
Di-n-octylphthalate	ND		ug/l	5.0
Diethyl phthalate	ND		ug/l	5.0
Dimethyl phthalate	ND		ug/l	5.0
Benzo(a)anthracene	ND		ug/l	5.0
Benzo(a)pyrene	ND		ug/l	5.0
Benzo(b)fluoranthene	ND		ug/l	5.0
Benzo(k)fluoranthene	ND		ug/l	5.0

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3510C
Analytical Date:	03/07/07 18:46	Extraction Date:	03/06/07 18:15
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-05 Batch: WG272453-1				
Chrysene	ND		ug/l	5.0
Acenaphthylene	ND		ug/l	5.0
Anthracene	ND		ug/l	5.0
Benzo(ghi)perylene	ND		ug/l	5.0
Fluorene	ND		ug/l	5.0
Phenanthrene	ND		ug/l	5.0
Dibenzo(a,h)anthracene	ND		ug/l	5.0
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0
Pyrene	ND		ug/l	5.0
Aniline	ND		ug/l	10
4-Chloroaniline	ND		ug/l	5.0
Dibenzofuran	ND		ug/l	5.0
2-Methylnaphthalene	ND		ug/l	5.0
Acetophenone	ND		ug/l	20
2,4,6-Trichlorophenol	ND		ug/l	5.0
2-Chlorophenol	ND		ug/l	6.0
2,4-Dichlorophenol	ND		ug/l	10
2,4-Dimethylphenol	ND		ug/l	5.0
2-Nitrophenol	ND		ug/l	20
4-Nitrophenol	ND		ug/l	10
2,4-Dinitrophenol	ND		ug/l	20
Pentachlorophenol	ND		ug/l	20
Phenol	ND		ug/l	7.0
2-Methylphenol	ND		ug/l	6.0
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0
2,4,5-Trichlorophenol	ND		ug/l	5.0

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3510C
Analytical Date:	03/07/07 18:46	Extraction Date:	03/06/07 18:15
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-05 Batch: WG272453-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	28		15-110
Phenol-d6	25		15-110
Nitrobenzene-d5	45		30-130
2-Fluorobiphenyl	31		30-130
2,4,6-Tribromophenol	48		15-110
4-Terphenyl-d14	68		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C-SIM	Extraction Method:	EPA 3510C
Analytical Date:	03/22/07 04:04	Extraction Date:	03/06/07 18:15
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C-SIM for sample(s): 01-05 Batch: WG274289-1				
Acenaphthene	ND		ug/l	0.20
2-Chloronaphthalene	ND		ug/l	0.20
Fluoranthene	ND		ug/l	0.20
Hexachlorobutadiene	ND		ug/l	0.50
Naphthalene	ND		ug/l	0.20
Benzo(a)anthracene	ND		ug/l	0.20
Benzo(a)pyrene	ND		ug/l	0.20
Benzo(b)fluoranthene	ND		ug/l	0.20
Benzo(k)fluoranthene	ND		ug/l	0.20
Chrysene	ND		ug/l	0.20
Acenaphthylene	ND		ug/l	0.20
Anthracene	ND		ug/l	0.20
Benzo(ghi)perylene	ND		ug/l	0.20
Fluorene	ND		ug/l	0.20
Phenanthrene	ND		ug/l	0.20
Dibenzo(a,h)anthracene	ND		ug/l	0.20
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20
Pyrene	ND		ug/l	0.20
2-Methylnaphthalene	ND		ug/l	0.20
Pentachlorophenol	ND		ug/l	0.80
Hexachlorobenzene	ND		ug/l	0.80
Hexachloroethane	ND		ug/l	0.80

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C-SIM	Extraction Method:	EPA 3510C
Analytical Date:	03/22/07 04:04	Extraction Date:	03/06/07 18:15
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C-SIM for sample(s): 01-05 Batch: WG274289-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	32		15-110
Phenol-d6	29		15-110
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	47		30-130
2,4,6-Tribromophenol	51		15-110
4-Terphenyl-d14	63		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-05 Batch: WG272453-2 WG272453-3					
Acenaphthene	59	63	40-140	7	20
1,2,4-Trichlorobenzene	49	55	40-140	12	20
Hexachlorobenzene	64	70	40-140	9	20
Bis(2-chloroethyl)ether	61	70	40-140	14	20
2-Chloronaphthalene	54	62	40-140	14	20
1,2-Dichlorobenzene	48	55	40-140	14	20
1,3-Dichlorobenzene	49	54	40-140	10	20
1,4-Dichlorobenzene	48	53	40-140	10	20
3,3'-Dichlorobenzidine	48	43	40-140	11	20
2,4-Dinitrotoluene	77	82	40-140	6	20
2,6-Dinitrotoluene	73	82	40-140	12	20
Azobenzene	69	75	40-140	8	20
Fluoranthene	80	84	40-140	5	20
4-Bromophenyl phenyl ether	65	72	40-140	10	20
Bis(2-chloroisopropyl)ether	60	70	40-140	15	20
Bis(2-chloroethoxy)methane	60	74	40-140	21	20
Hexachlorobutadiene	48	54	40-140	12	20
Hexachloroethane	49	54	40-140	10	20
Isophorone	65	77	40-140	17	20
Naphthalene	53	59	40-140	11	20
Nitrobenzene	62	67	40-140	8	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-05 Batch: WG272453-2 WG272453-3					
Bis(2-Ethylhexyl)phthalate	74	86	40-140	15	20
Butyl benzyl phthalate	76	83	40-140	9	20
Di-n-butylphthalate	82	89	40-140	8	20
Di-n-octylphthalate	73	82	40-140	12	20
Diethyl phthalate	71	77	40-140	8	20
Dimethyl phthalate	70	75	40-140	7	20
Benzo(a)anthracene	76	80	40-140	5	20
Benzo(a)pyrene	71	78	40-140	9	20
Benzo(b)fluoranthene	72	80	40-140	11	20
Benzo(k)fluoranthene	70	81	40-140	15	20
Chrysene	72	76	40-140	5	20
Acenaphthylene	57	62	40-140	8	20
Anthracene	69	72	40-140	4	20
Benzo(ghi)perylene	70	68	40-140	3	20
Fluorene	65	68	40-140	5	20
Phenanthrene	69	71	40-140	3	20
Dibenzo(a,h)anthracene	69	66	40-140	4	20
Indeno(1,2,3-cd)Pyrene	68	67	40-140	1	20
Pyrene	77	78	40-140	1	20
Aniline	17	19	40-140	11	20
4-Chloroaniline	34	33	40-140	3	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-05 Batch: WG272453-2 WG272453-3					
Dibenzofuran	62	64	40-140	3	20
2-Methylnaphthalene	51	57	40-140	11	20
Acetophenone	58	69	40-140	17	20
2,4,6-Trichlorophenol	60	65	30-130	8	20
2-Chlorophenol	54	61	30-130	12	20
2,4-Dichlorophenol	58	68	30-130	16	20
2,4-Dimethylphenol	46	54	30-130	16	20
2-Nitrophenol	55	67	30-130	20	20
4-Nitrophenol	34	41	30-130	19	20
2,4-Dinitrophenol	56	62	30-130	10	20
Pentachlorophenol	65	65	30-130	0	20
Phenol	24	30	30-130	22	20
2-Methylphenol	51	59	30-130	15	20
3-Methylphenol/4-Methylphenol	45	54	30-130	18	20
2,4,5-Trichlorophenol	67	67	30-130	0	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-05 Batch: WG272453-2 WG272453-3					

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		41		15-110
Phenol-d6	34		40		15-110
Nitrobenzene-d5	62		70		30-130
2-Fluorobiphenyl	56		60		30-130
2,4,6-Tribromophenol	73		74		15-110
4-Terphenyl-d14	85		87		30-130

Semivolatile Organics by MCP 8270C-SIM Associated sample(s): 01-05 Batch: WG274289-2 WG274289-3					
Acenaphthene	71	80	40-140	12	20
2-Chloronaphthalene	89	101	40-140	13	20
Fluoranthene	81	90	40-140	11	20
Hexachlorobutadiene	61	73	40-140	18	20
Naphthalene	65	78	40-140	18	20
Benzo(a)anthracene	93	102	40-140	9	20
Benzo(a)pyrene	98	112	40-140	13	20
Benzo(b)fluoranthene	106	106	40-140	0	20
Benzo(k)fluoranthene	93	106	40-140	13	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C-SIM Associated sample(s): 01-05 Batch: WG274289-2 WG274289-3					
Chrysene	91	96	40-140	5	20
Acenaphthylene	86	96	40-140	11	20
Anthracene	99	102	40-140	3	20
Benzo(ghi)perylene	81	99	40-140	20	20
Fluorene	85	97	40-140	13	20
Phenanthrene	88	103	40-140	16	20
Dibenzo(a,h)anthracene	92	108	40-140	16	20
Indeno(1,2,3-cd)Pyrene	98	119	40-140	19	20
Pyrene	77	88	40-140	13	20
2-Methylnaphthalene	66	78	40-140	17	20
Pentachlorophenol	62	69	30-130	11	20
Hexachlorobenzene	61	69	40-140	12	20
Hexachloroethane	70	84	40-140	18	20

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		52		15-110
Phenol-d6	40		48		15-110
Nitrobenzene-d5	89		104		30-130
2-Fluorobiphenyl	88		99		30-130
2,4,6-Tribromophenol	82		83		15-110
4-Terphenyl-d14	75		82		30-130

PCBS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/06/07 17:00
Analytical Date:	03/07/07 17:57	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.284	1
Aroclor 1221	ND		ug/l	0.284	1
Aroclor 1232	ND		ug/l	0.284	1
Aroclor 1242	ND		ug/l	0.284	1
Aroclor 1248	ND		ug/l	0.284	1
Aroclor 1254	ND		ug/l	0.284	1
Aroclor 1260	ND		ug/l	0.284	1
Aroclor 1262	ND		ug/l	0.284	1
Aroclor 1268	ND		ug/l	0.284	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	93		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/06/07 17:00
Analytical Date:	03/07/07 18:25	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.281	1
Aroclor 1221	ND		ug/l	0.281	1
Aroclor 1232	ND		ug/l	0.281	1
Aroclor 1242	ND		ug/l	0.281	1
Aroclor 1248	ND		ug/l	0.281	1
Aroclor 1254	ND		ug/l	0.281	1
Aroclor 1260	ND		ug/l	0.281	1
Aroclor 1262	ND		ug/l	0.281	1
Aroclor 1268	ND		ug/l	0.281	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	106		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/06/07 17:00
Analytical Date:	03/07/07 18:54	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.342	1
Aroclor 1221	ND		ug/l	0.342	1
Aroclor 1232	ND		ug/l	0.342	1
Aroclor 1242	ND		ug/l	0.342	1
Aroclor 1248	ND		ug/l	0.342	1
Aroclor 1254	ND		ug/l	0.342	1
Aroclor 1260	ND		ug/l	0.342	1
Aroclor 1262	ND		ug/l	0.342	1
Aroclor 1268	ND		ug/l	0.342	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	94		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/06/07 17:00
Analytical Date:	03/07/07 19:22	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.294	1
Aroclor 1221	ND		ug/l	0.294	1
Aroclor 1232	ND		ug/l	0.294	1
Aroclor 1242	ND		ug/l	0.294	1
Aroclor 1248	ND		ug/l	0.294	1
Aroclor 1254	ND		ug/l	0.294	1
Aroclor 1260	ND		ug/l	0.294	1
Aroclor 1262	ND		ug/l	0.294	1
Aroclor 1268	ND		ug/l	0.294	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	91		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/06/07 17:00
Analytical Date:	03/07/07 19:50	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.298	1
Aroclor 1221	ND		ug/l	0.298	1
Aroclor 1232	ND		ug/l	0.298	1
Aroclor 1242	ND		ug/l	0.298	1
Aroclor 1248	ND		ug/l	0.298	1
Aroclor 1254	ND		ug/l	0.298	1
Aroclor 1260	ND		ug/l	0.298	1
Aroclor 1262	ND		ug/l	0.298	1
Aroclor 1268	ND		ug/l	0.298	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	108		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8082	Extraction Method:	EPA 3510C
Analytical Date:	03/07/07 16:32	Extraction Date:	03/06/07 17:00
Analyst:	JB	Cleanup Method1:	EPA 3665A
		Cleanup Date1:	03/07/07

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by MCP 8082 for sample(s): 01-05 Batch: WG272441-1				
Aroclor 1016	ND		ug/l	0.250
Aroclor 1221	ND		ug/l	0.250
Aroclor 1232	ND		ug/l	0.250
Aroclor 1242	ND		ug/l	0.250
Aroclor 1248	ND		ug/l	0.250
Aroclor 1254	ND		ug/l	0.250
Aroclor 1260	ND		ug/l	0.250
Aroclor 1262	ND		ug/l	0.250
Aroclor 1268	ND		ug/l	0.250

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	46		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	46		30-150	B
Decachlorobiphenyl	118		30-150	B

PESTICIDES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 19:31	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.023	1
Lindane	ND		ug/l	0.023	1
Alpha-BHC	ND		ug/l	0.023	1
Beta-BHC	ND		ug/l	0.023	1
Heptachlor	ND		ug/l	0.023	1
Aldrin	ND		ug/l	0.023	1
Heptachlor epoxide	ND		ug/l	0.023	1
Endrin	ND		ug/l	0.045	1
Endrin ketone	ND		ug/l	0.045	1
Dieldrin	ND		ug/l	0.045	1
4,4'-DDE	ND		ug/l	0.045	1
4,4'-DDT	ND		ug/l	0.045	1
Endosulfan I	ND		ug/l	0.023	1
Endosulfan sulfate	ND		ug/l	0.045	1
Methoxychlor	ND		ug/l	0.225	1
Chlordane	ND		ug/l	0.225	1
Hexachlorobenzene	ND		ug/l	0.023	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	54		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 19:31	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.045	1
Endosulfan II	ND		ug/l	0.045	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	54		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 19:59	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.222	1
Chlordane	ND		ug/l	0.222	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	36		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	35		30-150	B
Decachlorobiphenyl	50		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 19:59	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	36		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	35		30-150	B
Decachlorobiphenyl	50		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 20:28	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.028	1
Lindane	ND		ug/l	0.028	1
Alpha-BHC	ND		ug/l	0.028	1
Beta-BHC	ND		ug/l	0.028	1
Heptachlor	ND		ug/l	0.028	1
Aldrin	ND		ug/l	0.028	1
Heptachlor epoxide	ND		ug/l	0.028	1
Endrin	ND		ug/l	0.056	1
Endrin ketone	ND		ug/l	0.056	1
Dieldrin	ND		ug/l	0.056	1
4,4'-DDE	ND		ug/l	0.056	1
4,4'-DDT	ND		ug/l	0.056	1
Endosulfan I	ND		ug/l	0.028	1
Endosulfan sulfate	ND		ug/l	0.056	1
Methoxychlor	ND		ug/l	0.278	1
Chlordane	ND		ug/l	0.278	1
Hexachlorobenzene	ND		ug/l	0.028	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 20:28	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.056	1
Endosulfan II	ND		ug/l	0.056	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 20:57	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.021	1
Lindane	ND		ug/l	0.021	1
Alpha-BHC	ND		ug/l	0.021	1
Beta-BHC	ND		ug/l	0.021	1
Heptachlor	ND		ug/l	0.021	1
Aldrin	ND		ug/l	0.021	1
Heptachlor epoxide	ND		ug/l	0.021	1
Endrin	ND		ug/l	0.043	1
Endrin ketone	ND		ug/l	0.043	1
Dieldrin	ND		ug/l	0.043	1
4,4'-DDE	ND		ug/l	0.043	1
4,4'-DDT	ND		ug/l	0.043	1
Endosulfan I	ND		ug/l	0.021	1
Endosulfan sulfate	ND		ug/l	0.043	1
Methoxychlor	ND		ug/l	0.213	1
Chlordane	ND		ug/l	0.213	1
Hexachlorobenzene	ND		ug/l	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	46		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 20:57	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.043	1
Endosulfan II	ND		ug/l	0.043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	54		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	46		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 21:25	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.222	1
Chlordane	ND		ug/l	0.222	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	43		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/06/07 18:15
Analytical Date:	03/09/07 21:25	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	43		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8081A	Extraction Method:	EPA 3510C
Analytical Date:	03/09/07 18:05	Extraction Date:	03/06/07 18:15
Analyst:	JB	Cleanup Method1:	EPA 3620B
		Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 01-05 Batch: WG272454-1				
Delta-BHC	ND		ug/l	0.020
Lindane	ND		ug/l	0.020
Alpha-BHC	ND		ug/l	0.020
Beta-BHC	ND		ug/l	0.020
Heptachlor	ND		ug/l	0.020
Aldrin	ND		ug/l	0.020
Heptachlor epoxide	ND		ug/l	0.020
Endrin	ND		ug/l	0.040
Endrin ketone	ND		ug/l	0.040
Dieldrin	ND		ug/l	0.040
4,4'-DDE	ND		ug/l	0.040
4,4'-DDT	ND		ug/l	0.040
Endosulfan I	ND		ug/l	0.020
Endosulfan sulfate	ND		ug/l	0.040
Methoxychlor	ND		ug/l	0.200
Chlordane	ND		ug/l	0.200
Hexachlorobenzene	ND		ug/l	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	38		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	34		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8081A	Extraction Method:	EPA 3510C
Analytical Date:	03/09/07 18:05	Extraction Date:	03/06/07 18:15
Analyst:	JB	Cleanup Method1:	EPA 3620B
		Cleanup Date1:	03/09/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 01-05 Batch: WG272454-1				
4,4'-DDD	ND		ug/l	0.040
Endosulfan II	ND		ug/l	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	38		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	34		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Organochlorine Pesticides by MCP 8081A Associated sample(s): 01-05 Batch: WG272454-2 WG272454-3					
Delta-BHC	70	74	40-140	5	20
Lindane	63	73	40-140	15	20
Alpha-BHC	57	70	40-140	21	20
Beta-BHC	71	76	40-140	6	20
Heptachlor	57	67	40-140	16	20
Aldrin	57	66	40-140	15	20
Heptachlor epoxide	73	79	40-140	8	20
Endrin	83	88	40-140	5	20
Endrin ketone	63	65	40-140	3	20
Dieldrin	75	79	40-140	6	20
4,4'-DDE	72	76	40-140	5	20
4,4'-DDT	76	79	40-140	3	20
Endosulfan I	74	79	40-140	6	20
Endosulfan sulfate	70	71	40-140	2	20
Methoxychlor	73	76	40-140	3	20
Hexachlorobenzene	40	51	40-140	24	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Organochlorine Pesticides by MCP 8081A Associated sample(s): 01-05 Batch: WG272454-2 WG272454-3					

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		54		30-150	A
Decachlorobiphenyl	73		60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	43		55		30-150	B
Decachlorobiphenyl	64		53		30-150	B

Organochlorine Pesticides by MCP 8081A Associated sample(s): 01-05 Batch: WG272454-2 WG272454-3					
4,4'-DDD	74	77	40-140	3	20
Endosulfan II	81	86	40-140	6	20

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		54		30-150	A
Decachlorobiphenyl	73		60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	43		55		30-150	B
Decachlorobiphenyl	64		53		30-150	B

METALS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.020		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:10	EPA 3005A	64,6020A	BM
Calcium, Dissolved	7.6		mg/l	0.10	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Iron, Dissolved	12		mg/l	0.05	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:10	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.749		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:10	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:10	EPA 3005A	64,6020A	BM
Sodium, Dissolved	11		mg/l	2.0	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.0088		mg/l	0.0050	1	03/09/07 18:30	03/13/07 21:10	EPA 3005A	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 14:27	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.311		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:21	EPA 3005A	64,6020A	BM
Calcium, Dissolved	80		mg/l	0.10	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Iron, Dissolved	4.2		mg/l	0.05	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:21	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.548		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:12	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:21	EPA 3005A	64,6020A	BM
Sodium, Dissolved	40		mg/l	2.0	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.0050	1	03/09/07 18:30	03/13/07 21:21	EPA 3005A	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 14:30	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.014		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:27	EPA 3005A	64,6020A	BM
Calcium, Dissolved	3.5		mg/l	0.10	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Iron, Dissolved	0.64		mg/l	0.05	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Lead, Dissolved	0.0011		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:27	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.135		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:14	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:27	EPA 3005A	64,6020A	BM
Sodium, Dissolved	12		mg/l	2.0	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.0148		mg/l	0.0050	1	03/09/07 18:30	03/13/07 21:27	EPA 3005A	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 14:34	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.053		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:32	EPA 3005A	64,6020A	BM
Calcium, Dissolved	16		mg/l	0.10	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Iron, Dissolved	3.5		mg/l	0.05	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:32	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.530		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:16	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:32	EPA 3005A	64,6020A	BM
Sodium, Dissolved	15		mg/l	2.0	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.0137		mg/l	0.0050	1	03/09/07 18:30	03/13/07 21:32	EPA 3005A	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 14:37	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.014		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:38	EPA 3005A	64,6020A	BM
Calcium, Dissolved	10		mg/l	0.10	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Iron, Dissolved	0.36		mg/l	0.05	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:38	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.462		mg/l	0.010	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:18	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 21:38	EPA 3005A	64,6020A	BM
Sodium, Dissolved	4.6		mg/l	2.0	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.0086		mg/l	0.0050	1	03/09/07 18:30	03/13/07 21:38	EPA 3005A	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 14:40	EPA 3005A	60,6010B	AI

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-05 Batch: WG272430-1									
Mercury, Dissolved	ND		mg/l	0.0002	1	03/06/07 15:55	03/07/07 12:05	64,7470A	DM

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-05 Batch: WG272452-1									
Arsenic, Dissolved	ND		mg/l	0.005	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Barium, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Calcium, Dissolved	ND		mg/l	0.10	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Iron, Dissolved	ND		mg/l	0.05	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Manganese, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Selenium, Dissolved	ND		mg/l	0.010	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Sodium, Dissolved	ND		mg/l	2.0	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/06/07 17:00	03/07/07 13:45	60,6010B	AI

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-05 Batch: WG272847-1									
Cadmium, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 20:32	64,6020A	BM
Lead, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/12/07 23:43	64,6020A	BM
Silver, Dissolved	ND		mg/l	0.0005	1	03/09/07 18:30	03/13/07 20:32	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.0050	1	03/09/07 18:30	03/12/07 23:43	64,6020A	BM

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-05 Batch: WG272430-2 WG272430-3					
Mercury, Dissolved	100	100	80-120	0	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-05 Batch: WG272452-2 WG272452-3					
Arsenic, Dissolved	105	102	80-120	3	20
Barium, Dissolved	101	100	80-120	1	20
Calcium, Dissolved	94	93	80-120	1	20
Chromium, Dissolved	100	100	80-120	0	20
Copper, Dissolved	94	93	80-120	1	20
Iron, Dissolved	97	96	80-120	1	20
Manganese, Dissolved	96	95	80-120	1	20
Selenium, Dissolved	112	109	80-120	3	20
Sodium, Dissolved	90	88	80-120	2	20
Zinc, Dissolved	98	97	80-120	1	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-05 Batch: WG272847-2 WG272847-3					
Cadmium, Dissolved	100	100	80-120	0	20
Lead, Dissolved	104	108	80-120	4	20
Silver, Dissolved	106	102	80-120	4	20
Zinc, Dissolved	102	102	80-120	0	20

INORGANICS
&
MISCELLANEOUS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-01	Date Collected:	03/05/07 13:10
Client ID:	MW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:53	64,9014	DD
General Chemistry									
Alkalinity, Total	16		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	130		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
Chloride	21		mg/l	1.0	1	-	03/05/07 23:26	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/06/07 23:52	30,4500NO3-F	DD
Sulfate	20		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-02	Date Collected:	03/05/07 10:10
Client ID:	MW-5	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:38	64,9014	DD
General Chemistry									
Alkalinity, Total	270		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	420		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
Chloride	57		mg/l	1.0	1	-	03/05/07 22:39	1,9251	DD
Nitrogen, Nitrate	4.1		mg/l	0.10	1	-	03/06/07 23:53	30,4500NO3-F	DD
Sulfate	12		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-03	Date Collected:	03/05/07 13:30
Client ID:	SW-1	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
tal Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:38	64,9014	DD
neral Chemistry									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	120		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
C oride	24		mg/l	1.0	1	-	03/05/07 22:39	1,9251	DD
Nitrogen, Nitrate	0.28		mg/l	0.10	1	-	03/06/07 23:54	30,4500NO3-F	DD
S ate	11		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
C mical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-04	Date Collected:	03/05/07 11:00
Client ID:	SW-2	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:39	64,9014	DD
General Chemistry									
Alkalinity, Total	18		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	120		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
Chloride	22		mg/l	1.0	1	-	03/05/07 22:40	1,9251	DD
Nitrogen, Nitrate	0.17		mg/l	0.10	1	-	03/06/07 23:54	30,4500NO3-F	DD
Sulfate	20		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703070
Project Number:	Not Specified	**Report Date:**	03/26/07

SAMPLE RESULTS

Lab ID:	L0703070-05	Date Collected:	03/05/07 12:00
Client ID:	SW-3	Date Received:	03/05/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:40	64,9014	DD
General Chemistry									
Alkalinity, Total	21		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	82		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
Chloride	6.6		mg/l	1.0	1	-	03/05/07 22:40	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/06/07 23:55	30,4500NO3-F	DD
Sulfate	18		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703070

Project Number: Not Specified **Report Date:** 03/26/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry for sample(s): 01-05 Batch: WG272324-2									
Chloride	ND		mg/l	1.0	1	-	03/05/07 21:36	1,9251	DD
General Chemistry for sample(s): 01-05 Batch: WG272372-1									
Solids, Total Dissolved	ND		mg/l	10	1	-	03/06/07 11:30	30,2540C	DW
General Chemistry for sample(s): 01-05 Batch: WG272473-2									
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/06/07 23:42	30,4500NO3-F	DD
Total Cyanide by MCP 9014 for sample(s): 01-05 Batch: WG272674-3									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:21	64,9014	DD
General Chemistry for sample(s): 01-05 Batch: WG272761-1									
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 12:15	30,5220D	DW
General Chemistry for sample(s): 01-05 Batch: WG272888-1									
Sulfate	ND		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
General Chemistry for sample(s): 01-05 Batch: WG272898-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT

Lab Control Sample Analysis

Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL

Project Number: Not Specified

Lab Number: L0703070

Report Date: 03/26/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-05 Batch: WG272324-1					
Chloride	93	-	84-110	-	
Associated sample(s): 01-05 Batch: WG272372-2					
Solids, Total Dissolved	100	-	72-121	-	
Associated sample(s): 01-05 Batch: WG272473-1					
Nitrogen, Nitrate	96	-	88-105	-	
Total Cyanide by MCP 9014 Associated sample(s): 01-05 Batch: WG272674-1 WG272674-2					
Cyanide, Total	107	100	80-120	7	20
Associated sample(s): 01-05 Batch: WG272761-2					
Chemical Oxygen Demand	99	-	93-106	-	
Associated sample(s): 01-05 Batch: WG272888-2					
Sulfate	90	-	84-108	-	
Associated sample(s): 01-05 Batch: WG272898-2					
Alkalinity, Total	102	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-05 QC Batch ID: WG272324-3 QC Sample: L0702985-01 Client ID: MS Sample									
Chloride	78	20	95	85	-	-	58-140	-	7
Associated sample(s): 01-05 QC Batch ID: WG272473-3 QC Sample: L0703115-05 Client ID: MS Sample									
Nitrogen, Nitrate	1.4	4	5.5	102	-	-	83-120	-	6
Associated sample(s): 01-05 QC Batch ID: WG272761-3 QC Sample: L0702942-01 Client ID: MS Sample									
Chemical Oxygen Demand	ND	238	250	104	-	-	84-120	-	12
Associated sample(s): 01-05 QC Batch ID: WG272888-3 QC Sample: L0703115-03 Client ID: MS Sample									
Sulfate	ND	20	28	140	-	-	55-147	-	14
Associated sample(s): 01-05 QC Batch ID: WG272898-4 QC Sample: L0703115-02 Client ID: MS Sample									
Alkalinity, Total	8.8	100	110	102	-	-	86-116	-	4

Lab Duplicate Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Associated sample(s): 01-05 QC Batch ID: WG272324-4 QC Sample: L0703023-01 Client ID: DUP Sample					
Chloride	25000	26000	mg/l	4	7
Associated sample(s): 01-05 QC Batch ID: WG272372-3 QC Sample: L0702942-01 Client ID: DUP Sample					
Solids, Total Dissolved	64	84	mg/l	27	11
Associated sample(s): 01-05 QC Batch ID: WG272473-4 QC Sample: L0703134-01 Client ID: DUP Sample					
Nitrogen, Nitrate	0.46	0.44	mg/l	4	6
Associated sample(s): 01-05 QC Batch ID: WG272761-4 QC Sample: L0702942-01 Client ID: DUP Sample					
Chemical Oxygen Demand	ND	ND	mg/l	NC	12
Associated sample(s): 01-05 QC Batch ID: WG272888-4 QC Sample: L0703115-05 Client ID: DUP Sample					
Sulfate	31	31	mg/l	0	14
Associated sample(s): 01-05 QC Batch ID: WG272898-3 QC Sample: L0703115-02 Client ID: DUP Sample					
Alkalinity, Total	8.8	8.7	mg CaCO3/L	1	4

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703070
Project Number: Not Specified **Report Date:** 03/26/07

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703070-01A	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-01B	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-01C	Plastic 250ml NaOH preserved	A	>12	3C	Y	Absent	MCP-TCN9014-04
L0703070-01D	Plastic 250ml H2SO4 preserved	A	<2	3C	Y	Absent	COD-5220
L0703070-01E	Plastic 500ml unpreserved	A	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703070-01F	Plastic 500ml unpreserved	A	7	3C	Y	Absent	TDS-2540
L0703070-01G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6010S,MCP-ZN-6020S
L0703070-01H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0703070-01I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0703070-01J	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0703070-01K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703070-02A	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-02B	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-02C	Plastic 250ml NaOH preserved	A	>12	3C	Y	Absent	MCP-TCN9014-04
L0703070-02D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703070-02E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703070-02F	Plastic 500ml unpreserved	A	7	3C	Y	Absent	TDS-2540
L0703070-02G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6010S,MCP-ZN-6020S
L0703070-02H	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8081-04
L0703070-02I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703070-02J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0703070-02K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703070-03A	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-03B	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-03C	Plastic 250ml NaOH preserved	A	>12	3C	Y	Absent	MCP-TCN9014-04
L0703070-03D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703070-03E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703070-03F	Plastic 500ml unpreserved	B	7	2C	Y	Absent	TDS-2540
L0703070-03G	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6010S,MCP-ZN-6020S
L0703070-03H	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8081-04
L0703070-03I	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8082-04
L0703070-03J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0703070-03K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703070-04A	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-04B	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-04C	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04
L0703070-04D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703070-04E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703070-04F	Plastic 500ml unpreserved	B	7	2C	Y	Absent	TDS-2540
L0703070-04G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6010S,MCP-ZN-6020S
L0703070-04H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0703070-04I	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8082-04
L0703070-04J	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0703070-04K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703070-05A	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-05B	Vial HCl preserved	C	N/A	2C	Y	Absent	MCP-8260-04
L0703070-05C	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703070-05D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703070-05E	Plastic 500ml unpreserved	A	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703070-05F	Plastic 500ml unpreserved	B	7	2C	Y	Absent	TDS-2540
L0703070-05G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6010S,MCP-ZN-6020S
L0703070-05H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0703070-05I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0703070-05J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0703070-05K	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04

Container Comments

L0703070-01A	Temp. probe
L0703070-01B	Temp. probe
L0703070-01C	Temp. probe
L0703070-01D	Temp. probe
L0703070-01E	Temp. probe
L0703070-01F	Temp. probe
L0703070-01G	Temp. probe
L0703070-01H	Temp. probe
L0703070-01I	Temp. probe
L0703070-01J	Temp. probe
L0703070-01K	Temp. probe
L0703070-02A	Temp. probe
L0703070-02B	Temp. probe
L0703070-02C	Temp. probe
L0703070-02D	Temp. probe
L0703070-02E	Temp. probe
L0703070-02F	Temp. probe
L0703070-02G	Temp. probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703070
Report Date: 03/26/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0703070-02H	Temp. probe
L0703070-02I	Temp. probe
L0703070-02J	Temp. probe
L0703070-02K	Temp. probe
L0703070-03A	Temp. probe
L0703070-03B	Temp. probe
L0703070-03C	Temp. probe
L0703070-03D	Temp. probe
L0703070-03E	Temp. probe
L0703070-03F	Temp. probe
L0703070-03G	Temp. probe
L0703070-03H	Temp. probe
L0703070-03I	Temp. probe
L0703070-03J	Temp. probe
L0703070-03K	Temp. probe
L0703070-04A	Temp. probe
L0703070-04B	Temp. probe
L0703070-04C	Temp. probe
L0703070-04D	Temp. probe
L0703070-04E	Temp. probe
L0703070-04F	Temp. probe
L0703070-04G	Temp. probe
L0703070-04H	Temp. probe
L0703070-04I	Temp. probe
L0703070-04J	Temp. probe
L0703070-04K	Temp. probe
L0703070-05A	Temp. probe
L0703070-05B	Temp. probe

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0703070-05C	Temp. probe
L0703070-05D	Temp. probe
L0703070-05E	Temp. probe
L0703070-05F	Temp. probe
L0703070-05G	Temp. probe
L0703070-05H	Temp. probe
L0703070-05I	Temp. probe
L0703070-05J	Temp. probe
L0703070-05K	Temp. probe

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.
LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD - Matrix Spike Sample Duplicate: Refer to MS.
NA - Not Applicable.
NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND - Not detected at the reported detection limit for the sample.
RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

The following data qualifiers have been identified for use under the CT DEP Reasonable Confidence Protocols.

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

J - Estimated value. The analyte was tentatively identified; the quantitation is an estimation. (Tentatively identified compounds only.)

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

60 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Woods Hole Labs performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Woods Hole Labs be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

EST environmental & industrial

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

ALPHA Job # L0703070 Chain 1 of 2

CHAIN OF CUSTODY RECORD

ast revised by AV 2/07

Laboratory: Alpha Analytical Laboratory

Client: SEA Consultants, Inc.
Address: 485 Massachusetts Avenue Cambridge, MA 02139
Contact: Alex Dubanowitz
Phone #: 617-497-7800 Fax: 617-498-4630

Project Name: Hamilton Sanitary Landfill
Address: Hamilton, MA
Contact: Alex Dubanowitz Phone: 617-498-4638
Location ID #: Fax:
Description: Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX
1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other

EST to Invoice: SEA
Lab to Invoice: SEA
Lab Report to: Alex.Dubanowitz@seacon.com
Billing Reference: 7800-Q#-xx
Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type Glass	Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Analytical Information: Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	PCB's & Pesticides (5)	Comments
MW-1	3/5/07	1310	2	4	4 5	2	X	X	X	X			X	X	X	X	X	X	
~~MW-2~~		~~[illegible]~~	~~2~~	~~4~~	~~4 5~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	EST to complete Temp, pH
~~MW-3~~			~~2~~	~~4~~	~~4~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	Spec. Cond. & DO in field
~~MW-4S~~			~~2~~	~~4~~	~~4~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	
~~MW-4D~~			~~2~~	~~4~~	~~4~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	
MW-5		1010	2	4	4 5	2	X	X	X	X			X	X	X	X	X	X	
~~MW-6S~~			~~2~~	~~4~~	~~4~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	
~~MW-6D~~			~~2~~	~~4~~	~~4~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	
SW-1		1330	2	4	4 5	2	X	X	X	X			X	X	X	X	X	X	
SW-2		1100	2	4	4 5	2	X	X	X	X			X	X	X	X	X	X	
SW-3		1200	2	4	4 5	2	X	X	X	X			X	X	X	X	X	X	

Turnaround Information
- Std. 10 Day Turnaround
- 7 Day RUSH
- 4 Day RUSH
- 3 Day RUSH
- 2 Day RUSH
- 1 Day RUSH

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, NEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (including PAH's)

(5) PCEs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/5/07 1600	1 [signature]	3-5-07 1600
2 [signature]	3/5/07 1700	2 [signature]	3-5-07 1700
3		3	

Seal # Preserve where applicable ☐ On Ice ☐ Temp.

ALPHA
WOODS HOLE LABS

ANALYTICAL REPORT

Lab Number:	L0703115
Client:	SEA Consultants 485 Massachusetts Avenue Cambridge, MA 02139
ATTN:	Alex Dubanowitz
Project Name:	HAMILTON SANITARY LANDFILL
Project Number:	Not Specified
Report Date:	03/13/07

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (200305), NJ (MA935), RI (LAO00065), ME (2006012), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Sample Location
L0703115-01	MW-2	HAMILTON, MA.
L0703115-02	MW-3	HAMILTON, MA.
L0703115-03	MW-4S	HAMILTON, MA.
L0703115-04	MW-4D	HAMILTON, MA.
L0703115-05	MW-6S	HAMILTON, MA.
L0703115-06	MW-6D	HAMILTON, MA.

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	N/A

A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Case Narrative

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives:

Sample Receipt

The samples were Field Filtered for Dissolved Metals only.

Volatile Organics

In reference to question E:

The WG272653-1/2 LCS/LCSD have a high recovery for Trichlorofluoromethane and an elevated RPD for carbon tetrachloride.

The WG272807-1/2 LCS/LCSD have a high recovery for Trichlorofluoromethane and a high RPD for carbon tetrachloride and Bromomethane.

Semi-Volatile Organics

The original analysis of sample L0703115-02 had one or more Internal Standards (IS) outside method acceptance criteria. This sample was re-analyzed and all IS met acceptance criteria, therefore, the re-analysis data only is reported.

In reference to question E:

The WG272585 LCS/LCSD % recoveries for Aniline, Phenol, and 4-Chloroaniline were below the individual method acceptance criteria, but within overall method acceptance criteria.

PCB

L0703115-01 has an elevated detection limit due to limited sample volume submitted.

L0703115-05 was re-extracted due to low surrogate recoveries on the original analysis. Re-extraction was performed within holding time and has acceptable surrogate recoveries, re-extract results reported.

Pesticides

L0703315-01 has an elevated detection limit due to limited sample volume submitted.

In reference to question E:

The WG272583 LCS/LCSD RPD for Lindane, Alpha-BHC, Heptachlor, Aldrin, and Hexachlorobenzene are above method acceptance criteria. No further action was taken.

Case Narrative (continued)

Metals

In reference to question F:

At the client's request, all submitted samples were not analyzed for the full MCP list of compounds specified for the Method.

Non-MCP Related Narratives:

TDS

The Duplicate RPD is above the acceptance criteria for the method. The elevated RPD has been attributed to the non-homogenous nature of the sample utilized for the laboratory duplicate.

Sulfate

L0703115-06 has an elevated limit of detection due to the 2x dilutions required for the sample to fall within the calibration curve.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kathleen M. Irvin

Title: Technical Director

Date: 03/13/07

ORGANICS

VOLATILES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 19:44		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	2.0		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0703115-01
Client ID: MW-2
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 08:30
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	9.6		ug/l	1.0	1
o-Xylene	4.5		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	4.2		ug/l	0.50	1
sec-Butylbenzene	1.4		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	0.67		ug/l	0.50	1
p-Isopropyltoluene	1.4		ug/l	0.50	1
Naphthalene	3.1		ug/l	2.5	1
n-Propylbenzene	2.8		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	8.4		ug/l	2.5	1
1,2,4-Trimethylbenzene	22		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	128		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	117		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 20:19		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0703115-02 Date Collected: 03/06/07 09:45
Client ID: MW-3 Date Received: 03/06/07
Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-02
Client ID: MW-3
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 09:45
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	108		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/08/07 20:55		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-03
Client ID: MW-4S
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 11:10
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	0.73		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/09/07 13:01		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	1.6		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	1.4		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0703115-04 Date Collected: 03/06/07 11:25
Client ID: MW-4D Date Received: 03/06/07
Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	0.50		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	18		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-04
Client ID: MW-4D
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 11:25
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	108		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/09/07 14:46		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-05
Client ID: MW-6S
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 12:25
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	112		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	03/09/07 15:22		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0703115-06 Date Collected: 03/06/07 12:40
Client ID: MW-6D Date Received: 03/06/07
Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	1.9		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	113		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-03 Batch: WG272653-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-03 Batch: WG272653-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/08/07 10:55
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-03 Batch: WG272653-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	105		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/09/07 10:40
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 04-06 Batch: WG272807-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/09/07 10:40
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 04-06 Batch: WG272807-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 03/09/07 10:40
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 04-06 Batch: WG272807-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	108		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-03 Batch: WG272653-1 WG272653-2					
Methylene chloride	113	109	70-130	4	25
1,1-Dichloroethane	119	109	70-130	9	25
Chloroform	118	108	70-130	9	25
Carbon tetrachloride	124	87	70-130	35	25
1,2-Dichloropropane	104	99	70-130	5	25
Dibromochloromethane	86	82	70-130	5	25
1,1,2-Trichloroethane	90	94	70-130	4	25
Tetrachloroethene	101	96	70-130	5	25
Chlorobenzene	95	93	70-130	2	25
Trichlorofluoromethane	157	138	70-130	13	25
1,2-Dichloroethane	120	109	70-130	10	25
1,1,1-Trichloroethane	116	104	70-130	11	25
Bromodichloromethane	108	95	70-130	13	25
trans-1,3-Dichloropropene	81	84	70-130	4	25
cis-1,3-Dichloropropene	91	87	70-130	4	25
1,1-Dichloropropene	115	106	70-130	8	25
Bromoform	78	78	70-130	0	50
1,1,2,2-Tetrachloroethane	80	80	70-130	0	25
Benzene	105	100	70-130	5	25
Toluene	100	95	70-130	5	25
Ethylbenzene	105	100	70-130	5	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-03 Batch: WG272653-1 WG272653-2					
Chloromethane	99	93	70-130	6	50
Bromomethane	98	108	70-130	10	50
Vinyl chloride	109	98	70-130	11	25
Chloroethane	118	110	70-130	7	25
1,1-Dichloroethene	113	109	70-130	4	25
trans-1,2-Dichloroethene	115	105	70-130	9	25
Trichloroethene	108	101	70-130	7	25
1,2-Dichlorobenzene	89	84	70-130	6	25
1,3-Dichlorobenzene	95	90	70-130	5	25
1,4-Dichlorobenzene	93	88	70-130	6	25
Methyl tert butyl ether	118	120	70-130	2	25
p/m-Xylene	102	97	70-130	5	25
o-Xylene	101	96	70-130	5	25
cis-1,2-Dichloroethene	110	103	70-130	7	25
Dibromomethane	115	105	70-130	9	25
1,2,3-Trichloropropane	94	93	70-130	1	25
Styrene	103	97	70-130	6	25
Dichlorodifluoromethane	87	78	70-130	11	50
Acetone	112	107	70-130	5	50
Carbon disulfide	102	96	70-130	6	25
2-Butanone	104	103	70-130	1	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-03 Batch: WG272653-1 WG272653-2					
4-Methyl-2-pentanone	100	96	70-130	4	50
2-Hexanone	96	99	70-130	3	50
Bromochloromethane	104	101	70-130	3	25
Tetrahydrofuran	78	82	70-130	5	25
2,2-Dichloropropane	78	74	70-130	5	50
1,2-Dibromoethane	97	96	70-130	1	25
1,3-Dichloropropane	95	95	70-130	0	25
1,1,1,2-Tetrachloroethane	101	94	70-130	7	25
Bromobenzene	93	90	70-130	3	25
n-Butylbenzene	98	93	70-130	5	25
sec-Butylbenzene	97	90	70-130	7	25
tert-Butylbenzene	97	92	70-130	5	25
o-Chlorotoluene	102	97	70-130	5	25
p-Chlorotoluene	102	95	70-130	7	25
1,2-Dibromo-3-chloropropane	76	76	70-130	0	50
Hexachlorobutadiene	92	84	70-130	9	25
Isopropylbenzene	109	103	70-130	6	25
p-Isopropyltoluene	99	94	70-130	5	25
Naphthalene	82	83	70-130	1	25
n-Propylbenzene	103	98	70-130	5	25
1,2,3-Trichlorobenzene	84	85	70-130	1	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-03 Batch: WG272653-1 WG272653-2					
1,2,4-Trichlorobenzene	85	82	70-130	4	25
1,3,5-Trimethylbenzene	103	96	70-130	7	25
1,2,4-Trimethylbenzene	103	98	70-130	5	25
Ethyl ether	106	102	70-130	4	25
Isopropyl Ether	110	106	70-130	4	25
Ethyl-Tert-Butyl-Ether	101	97	70-130	4	25
Tertiary-Amyl Methyl Ether	89	85	70-130	5	25
1,4-Dioxane	83	97	70-130	16	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		115		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	104		101		70-130
Dibromofluoromethane	113		109		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 04-06 Batch: WG272807-1 WG272807-2					
Methylene chloride	106	109	70-130	3	25
1,1-Dichloroethane	112	116	70-130	4	25
Chloroform	111	111	70-130	0	25
Carbon tetrachloride	130	99	70-130	27	25
1,2-Dichloropropane	105	105	70-130	0	25
Dibromochloromethane	90	83	70-130	8	25
1,1,2-Trichloroethane	94	91	70-130	3	25
Tetrachloroethene	100	102	70-130	2	25
Chlorobenzene	95	97	70-130	2	25
Trichlorofluoromethane	141	142	70-130	1	25
1,2-Dichloroethane	114	110	70-130	4	25
1,1,1-Trichloroethane	107	109	70-130	2	25
Bromodichloromethane	105	101	70-130	4	25
trans-1,3-Dichloropropene	85	82	70-130	4	25
cis-1,3-Dichloropropene	92	89	70-130	3	25
1,1-Dichloropropene	112	114	70-130	2	25
Bromoform	83	76	70-130	9	50
1,1,2,2-Tetrachloroethane	82	80	70-130	2	25
Benzene	104	104	70-130	0	25
Toluene	96	98	70-130	2	25
Ethylbenzene	102	104	70-130	2	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 04-06 Batch: WG272807-1 WG272807-2					
Chloromethane	91	97	70-130	6	50
Bromomethane	86	113	70-130	27	50
Vinyl chloride	98	101	70-130	3	25
Chloroethane	105	108	70-130	3	25
1,1-Dichloroethene	106	116	70-130	9	25
trans-1,2-Dichloroethene	107	109	70-130	2	25
Trichloroethene	105	108	70-130	3	25
1,2-Dichlorobenzene	86	88	70-130	2	25
1,3-Dichlorobenzene	91	93	70-130	2	25
1,4-Dichlorobenzene	92	91	70-130	1	25
Methyl tert butyl ether	129	124	70-130	4	25
p/m-Xylene	98	101	70-130	3	25
o-Xylene	95	98	70-130	3	25
cis-1,2-Dichloroethene	105	110	70-130	5	25
Dibromomethane	107	104	70-130	3	25
1,2,3-Trichloropropane	95	92	70-130	3	25
Styrene	95	97	70-130	2	25
Dichlorodifluoromethane	75	78	70-130	4	50
Acetone	95	95	70-130	0	50
Carbon disulfide	97	98	70-130	1	25
2-Butanone	100	110	70-130	10	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 04-06 Batch: WG272807-1 WG272807-2					
4-Methyl-2-pentanone	96	100	70-130	4	50
2-Hexanone	94	96	70-130	2	50
Bromochloromethane	94	103	70-130	9	25
Tetrahydrofuran	74	81	70-130	9	25
2,2-Dichloropropane	90	80	70-130	12	50
1,2-Dibromoethane	103	98	70-130	5	25
1,3-Dichloropropane	99	97	70-130	2	25
1,1,1,2-Tetrachloroethane	105	97	70-130	8	25
Bromobenzene	93	92	70-130	1	25
n-Butylbenzene	96	97	70-130	1	25
sec-Butylbenzene	95	94	70-130	1	25
tert-Butylbenzene	96	97	70-130	1	25
o-Chlorotoluene	98	98	70-130	0	25
p-Chlorotoluene	100	98	70-130	2	25
1,2-Dibromo-3-chloropropane	76	74	70-130	3	50
Hexachlorobutadiene	91	90	70-130	1	25
Isopropylbenzene	108	109	70-130	1	25
p-Isopropyltoluene	98	98	70-130	0	25
Naphthalene	82	85	70-130	4	25
n-Propylbenzene	103	104	70-130	1	25
1,2,3-Trichlorobenzene	82	84	70-130	2	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 04-06 Batch: WG272807-1 WG272807-2					
1,2,4-Trichlorobenzene	82	83	70-130	1	25
1,3,5-Trimethylbenzene	101	102	70-130	1	25
1,2,4-Trimethylbenzene	101	101	70-130	0	25
Ethyl ether	88	88	70-130	0	25
Isopropyl Ether	101	102	70-130	1	25
Ethyl-Tert-Butyl-Ether	119	104	70-130	13	25
Tertiary-Amyl Methyl Ether	109	86	70-130	24	25
1,4-Dioxane	76	97	70-130	24	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		108		70-130
Toluene-d8	103		102		70-130
4-Bromofluorobenzene	104		101		70-130
Dibromofluoromethane	111		107		70-130

SEMIVOLATILES

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 00:02		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	8.3	1
1,2,4-Trichlorobenzene	ND		ug/l	8.3	1
Hexachlorobenzene	ND		ug/l	8.3	1
Bis(2-chloroethyl)ether	ND		ug/l	8.3	1
2-Chloronaphthalene	ND		ug/l	8.3	1
1,2-Dichlorobenzene	ND		ug/l	8.3	1
1,3-Dichlorobenzene	ND		ug/l	8.3	1
1,4-Dichlorobenzene	ND		ug/l	8.3	1
3,3'-Dichlorobenzidine	ND		ug/l	17	1
2,4-Dinitrotoluene	ND		ug/l	8.3	1
2,6-Dinitrotoluene	ND		ug/l	8.3	1
Azobenzene	ND		ug/l	8.3	1
Fluoranthene	ND		ug/l	8.3	1
4-Bromophenyl phenyl ether	ND		ug/l	8.3	1
Bis(2-chloroisopropyl)ether	ND		ug/l	8.3	1
Bis(2-chloroethoxy)methane	ND		ug/l	8.3	1
Hexachlorobutadiene	ND		ug/l	17	1
Hexachloroethane	ND		ug/l	8.3	1
Isophorone	ND		ug/l	8.3	1
Naphthalene	ND		ug/l	8.3	1
Nitrobenzene	ND		ug/l	8.3	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	17	1
Butyl benzyl phthalate	ND		ug/l	8.3	1
Di-n-butylphthalate	ND		ug/l	8.3	1
Di-n-octylphthalate	ND		ug/l	8.3	1
Diethyl phthalate	ND		ug/l	8.3	1
Dimethyl phthalate	ND		ug/l	8.3	1
Benzo(a)anthracene	ND		ug/l	8.3	1
Benzo(a)pyrene	ND		ug/l	8.3	1
Benzo(b)fluoranthene	ND		ug/l	8.3	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-01 Date Collected: 03/06/07 08:30

Client ID: MW-2 Date Received: 03/06/07

Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	8.3	1
Chrysene	ND		ug/l	8.3	1
Acenaphthylene	ND		ug/l	8.3	1
Anthracene	ND		ug/l	8.3	1
Benzo(ghi)perylene	ND		ug/l	8.3	1
Fluorene	ND		ug/l	8.3	1
Phenanthrene	ND		ug/l	8.3	1
Dibenzo(a,h)anthracene	ND		ug/l	8.3	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	8.3	1
Pyrene	ND		ug/l	8.3	1
Aniline	ND		ug/l	17	1
4-Chloroaniline	ND		ug/l	8.3	1
Dibenzofuran	ND		ug/l	8.3	1
2-Methylnaphthalene	ND		ug/l	8.3	1
Acetophenone	ND		ug/l	33	1
2,4,6-Trichlorophenol	ND		ug/l	8.3	1
2-Chlorophenol	ND		ug/l	10	1
2,4-Dichlorophenol	ND		ug/l	17	1
2,4-Dimethylphenol	ND		ug/l	8.3	1
2-Nitrophenol	ND		ug/l	33	1
4-Nitrophenol	ND		ug/l	17	1
2,4-Dinitrophenol	ND		ug/l	33	1
Pentachlorophenol	ND		ug/l	33	1
Phenol	ND		ug/l	12	1
2-Methylphenol	ND		ug/l	10	1
3-Methylphenol/4-Methylphenol	ND		ug/l	10	1
2,4,5-Trichlorophenol	ND		ug/l	8.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		15-110
Phenol-d6	57		15-110
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	77		30-130
2,4,6-Tribromophenol	97		15-110
4-Terphenyl-d14	87		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02 R	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 14:13		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.5	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.5	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.5	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02 R	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	9.5	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.7	1
2,4-Dichlorophenol	ND		ug/l	9.5	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.5	1
2,4-Dinitrophenol	ND		ug/l	19	1
Pentachlorophenol	ND		ug/l	19	1
Phenol	ND		ug/l	6.7	1
2-Methylphenol	ND		ug/l	5.7	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.7	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		15-110
Phenol-d6	35		15-110
Nitrobenzene-d5	61		30-130
2-Fluorobiphenyl	47		30-130
2,4,6-Tribromophenol	59		15-110
4-Terphenyl-d14	69		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 00:52		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	5.0	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1
Hexachlorobenzene	ND		ug/l	5.0	1
Bis(2-chloroethyl)ether	ND		ug/l	5.0	1
2-Chloronaphthalene	ND		ug/l	5.0	1
1,2-Dichlorobenzene	ND		ug/l	5.0	1
1,3-Dichlorobenzene	ND		ug/l	5.0	1
1,4-Dichlorobenzene	ND		ug/l	5.0	1
3,3'-Dichlorobenzidine	ND		ug/l	10	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1
Azobenzene	ND		ug/l	5.0	1
Fluoranthene	ND		ug/l	5.0	1
4-Bromophenyl phenyl ether	ND		ug/l	5.0	1
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1
Hexachlorobutadiene	ND		ug/l	10	1
Hexachloroethane	ND		ug/l	5.0	1
Isophorone	ND		ug/l	5.0	1
Naphthalene	ND		ug/l	5.0	1
Nitrobenzene	ND		ug/l	5.0	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	10	1
Butyl benzyl phthalate	ND		ug/l	5.0	1
Di-n-butylphthalate	ND		ug/l	5.0	1
Di-n-octylphthalate	ND		ug/l	5.0	1
Diethyl phthalate	ND		ug/l	5.0	1
Dimethyl phthalate	ND		ug/l	5.0	1
Benzo(a)anthracene	ND		ug/l	5.0	1
Benzo(a)pyrene	ND		ug/l	5.0	1
Benzo(b)fluoranthene	ND		ug/l	5.0	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	5.0	1
Chrysene	ND		ug/l	5.0	1
Acenaphthylene	ND		ug/l	5.0	1
Anthracene	ND		ug/l	5.0	1
Benzo(ghi)perylene	ND		ug/l	5.0	1
Fluorene	ND		ug/l	5.0	1
Phenanthrene	ND		ug/l	5.0	1
Dibenzo(a,h)anthracene	ND		ug/l	5.0	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0	1
Pyrene	ND		ug/l	5.0	1
Aniline	ND		ug/l	10	1
4-Chloroaniline	ND		ug/l	5.0	1
Dibenzofuran	ND		ug/l	5.0	1
2-Methylnaphthalene	ND		ug/l	5.0	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	1
2-Chlorophenol	ND		ug/l	6.0	1
2,4-Dichlorophenol	ND		ug/l	10	1
2,4-Dimethylphenol	ND		ug/l	5.0	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	10	1
2,4-Dinitrophenol	ND		ug/l	20	1
Pentachlorophenol	ND		ug/l	20	1
Phenol	ND		ug/l	7.0	1
2-Methylphenol	ND		ug/l	6.0	1
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		15-110
Phenol-d6	43		15-110
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	78		30-130
2,4,6-Tribromophenol	90		15-110
4-Terphenyl-d14	91		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 01:17		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.6	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.6	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.6	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-04 Date Collected: 03/06/07 11:25

Client ID: MW-4D Date Received: 03/06/07

Sample Location: HAMILTON, MA. Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	9.6	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.7	1
2,4-Dichlorophenol	ND		ug/l	9.6	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.6	1
2,4-Dinitrophenol	ND		ug/l	19	1
Pentachlorophenol	ND		ug/l	19	1
Phenol	ND		ug/l	6.7	1
2-Methylphenol	ND		ug/l	5.7	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.7	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		15-110
Phenol-d6	32		15-110
Nitrobenzene-d5	56		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	67		15-110
4-Terphenyl-d14	72		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 01:41		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.6	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.6	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.6	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

SAMPLE RESULTS

Lab ID: L0703115-05
Client ID: MW-6S
Sample Location: HAMILTON, MA.

Date Collected: 03/06/07 12:25
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	9.6	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.7	1
2,4-Dichlorophenol	ND		ug/l	9.6	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.6	1
2,4-Dinitrophenol	ND		ug/l	19	1
Pentachlorophenol	ND		ug/l	19	1
Phenol	ND		ug/l	6.7	1
2-Methylphenol	ND		ug/l	5.7	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.7	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	22		15-110
Phenol-d6	22		15-110
Nitrobenzene-d5	40		30-130
2-Fluorobiphenyl	39		30-130
2,4,6-Tribromophenol	45		15-110
4-Terphenyl-d14	51		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	03/07/07 18:30
Analytical Date:	03/09/07 02:06		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	9.8	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	9.8	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	20	1
Pentachlorophenol	ND		ug/l	20	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		15-110
Phenol-d6	38		15-110
Nitrobenzene-d5	65		30-130
2-Fluorobiphenyl	66		30-130
2,4,6-Tribromophenol	74		15-110
4-Terphenyl-d14	80		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C
Analytical Date: 03/08/07 17:56
Analyst: RL

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 18:30

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-06 Batch: WG272585-1				
Acenaphthene	ND		ug/l	5.0
1,2,4-Trichlorobenzene	ND		ug/l	5.0
Hexachlorobenzene	ND		ug/l	5.0
Bis(2-chloroethyl)ether	ND		ug/l	5.0
2-Chloronaphthalene	ND		ug/l	5.0
1,2-Dichlorobenzene	ND		ug/l	5.0
1,3-Dichlorobenzene	ND		ug/l	5.0
1,4-Dichlorobenzene	ND		ug/l	5.0
3,3'-Dichlorobenzidine	ND		ug/l	10
2,4-Dinitrotoluene	ND		ug/l	5.0
2,6-Dinitrotoluene	ND		ug/l	5.0
Azobenzene	ND		ug/l	5.0
Fluoranthene	ND		ug/l	5.0
4-Bromophenyl phenyl ether	ND		ug/l	5.0
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0
Bis(2-chloroethoxy)methane	ND		ug/l	5.0
Hexachlorobutadiene	ND		ug/l	10
Hexachloroethane	ND		ug/l	5.0
Isophorone	ND		ug/l	5.0
Naphthalene	ND		ug/l	5.0
Nitrobenzene	ND		ug/l	5.0
Bis(2-Ethylhexyl)phthalate	ND		ug/l	10
Butyl benzyl phthalate	ND		ug/l	5.0
Di-n-butylphthalate	ND		ug/l	5.0
Di-n-octylphthalate	ND		ug/l	5.0
Diethyl phthalate	ND		ug/l	5.0
Dimethyl phthalate	ND		ug/l	5.0
Benzo(a)anthracene	ND		ug/l	5.0
Benzo(a)pyrene	ND		ug/l	5.0
Benzo(b)fluoranthene	ND		ug/l	5.0
Benzo(k)fluoranthene	ND		ug/l	5.0

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C
Analytical Date: 03/08/07 17:56
Analyst: RL

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 18:30

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-06 Batch: WG272585-1				
Chrysene	ND		ug/l	5.0
Acenaphthylene	ND		ug/l	5.0
Anthracene	ND		ug/l	5.0
Benzo(ghi)perylene	ND		ug/l	5.0
Fluorene	ND		ug/l	5.0
Phenanthrene	ND		ug/l	5.0
Dibenzo(a,h)anthracene	ND		ug/l	5.0
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0
Pyrene	ND		ug/l	5.0
Aniline	ND		ug/l	10
4-Chloroaniline	ND		ug/l	5.0
Dibenzofuran	ND		ug/l	5.0
2-Methylnaphthalene	ND		ug/l	5.0
Acetophenone	ND		ug/l	20
2,4,6-Trichlorophenol	ND		ug/l	5.0
2-Chlorophenol	ND		ug/l	6.0
2,4-Dichlorophenol	ND		ug/l	10
2,4-Dimethylphenol	ND		ug/l	5.0
2-Nitrophenol	ND		ug/l	20
4-Nitrophenol	ND		ug/l	10
2,4-Dinitrophenol	ND		ug/l	20
Pentachlorophenol	ND		ug/l	20
Phenol	ND		ug/l	7.0
2-Methylphenol	ND		ug/l	6.0
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0
2,4,5-Trichlorophenol	ND		ug/l	5.0

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C
Analytical Date: 03/08/07 17:56
Analyst: RL

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 18:30

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-06 Batch: WG272585-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		15-110
Phenol-d6	42		15-110
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	86		15-110
4-Terphenyl-d14	102		30-130

PCBS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/07/07 17:00
Analytical Date:	03/08/07 16:13	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/08/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.352	1
Aroclor 1221	ND		ug/l	0.352	1
Aroclor 1232	ND		ug/l	0.352	1
Aroclor 1242	ND		ug/l	0.352	1
Aroclor 1248	ND		ug/l	0.352	1
Aroclor 1254	ND		ug/l	0.352	1
Aroclor 1260	ND		ug/l	0.352	1
Aroclor 1262	ND		ug/l	0.352	1
Aroclor 1268	ND		ug/l	0.352	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/07/07 17:00
Analytical Date:	03/08/07 16:42	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/08/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.260	1
Aroclor 1221	ND		ug/l	0.260	1
Aroclor 1232	ND		ug/l	0.260	1
Aroclor 1242	ND		ug/l	0.260	1
Aroclor 1248	ND		ug/l	0.260	1
Aroclor 1254	ND		ug/l	0.260	1
Aroclor 1260	ND		ug/l	0.260	1
Aroclor 1262	ND		ug/l	0.260	1
Aroclor 1268	ND		ug/l	0.260	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	108		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/07/07 17:00
Analytical Date:	03/08/07 17:10	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/08/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.260	1
Aroclor 1221	ND		ug/l	0.260	1
Aroclor 1232	ND		ug/l	0.260	1
Aroclor 1242	ND		ug/l	0.260	1
Aroclor 1248	ND		ug/l	0.260	1
Aroclor 1254	ND		ug/l	0.260	1
Aroclor 1260	ND		ug/l	0.260	1
Aroclor 1262	ND		ug/l	0.260	1
Aroclor 1268	ND		ug/l	0.260	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	109		30-150	B

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/07/07 17:00
Analytical Date:	03/08/07 17:38	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/08/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.266	1
Aroclor 1221	ND		ug/l	0.266	1
Aroclor 1232	ND		ug/l	0.266	1
Aroclor 1242	ND		ug/l	0.266	1
Aroclor 1248	ND		ug/l	0.266	1
Aroclor 1254	ND		ug/l	0.266	1
Aroclor 1260	ND		ug/l	0.266	1
Aroclor 1262	ND		ug/l	0.266	1
Aroclor 1268	ND		ug/l	0.266	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	85		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	110		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05 RE	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/09/07 19:00
Analytical Date:	03/12/07 18:41	Cleanup Method1:	EPA 3665A
Analyst:	SS	Cleanup Date1:	03/10/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.275	1
Aroclor 1221	ND		ug/l	0.275	1
Aroclor 1232	ND		ug/l	0.275	1
Aroclor 1242	ND		ug/l	0.275	1
Aroclor 1248	ND		ug/l	0.275	1
Aroclor 1254	ND		ug/l	0.275	1
Aroclor 1260	ND		ug/l	0.275	1
Aroclor 1262	ND		ug/l	0.275	1
Aroclor 1268	ND		ug/l	0.275	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	93		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	121		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	03/07/07 17:00
Analytical Date:	03/08/07 18:35	Cleanup Method1:	EPA 3665A
Analyst:	JB	Cleanup Date1:	03/08/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.258	1
Aroclor 1221	ND		ug/l	0.258	1
Aroclor 1232	ND		ug/l	0.258	1
Aroclor 1242	ND		ug/l	0.258	1
Aroclor 1248	ND		ug/l	0.258	1
Aroclor 1254	ND		ug/l	0.258	1
Aroclor 1260	ND		ug/l	0.258	1
Aroclor 1262	ND		ug/l	0.258	1
Aroclor 1268	ND		ug/l	0.258	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	98		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8082
Analytical Date: 03/08/07 14:48
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 17:00
Cleanup Method1: EPA 3665A
Cleanup Date1: 03/08/07

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by MCP 8082 for sample(s): 01-04,06 Batch: WG272571-1				
Aroclor 1016	ND		ug/l	0.250
Aroclor 1221	ND		ug/l	0.250
Aroclor 1232	ND		ug/l	0.250
Aroclor 1242	ND		ug/l	0.250
Aroclor 1248	ND		ug/l	0.250
Aroclor 1254	ND		ug/l	0.250
Aroclor 1260	ND		ug/l	0.250
Aroclor 1262	ND		ug/l	0.250
Aroclor 1268	ND		ug/l	0.250

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	95		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8082
Analytical Date: 03/12/07 17:16
Analyst: SS

Extraction Method: EPA 3510C
Extraction Date: 03/09/07 19:00
Cleanup Method1: EPA 3665A
Cleanup Date1: 03/10/07

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by MCP 8082 for sample(s): 05 Batch: WG273035-1				
Aroclor 1016	ND		ug/l	0.250
Aroclor 1221	ND		ug/l	0.250
Aroclor 1232	ND		ug/l	0.250
Aroclor 1242	ND		ug/l	0.250
Aroclor 1248	ND		ug/l	0.250
Aroclor 1254	ND		ug/l	0.250
Aroclor 1260	ND		ug/l	0.250
Aroclor 1262	ND		ug/l	0.250
Aroclor 1268	ND		ug/l	0.250

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	96		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Polychlorinated Biphenyls by MCP 8082 Associated sample(s): 05 Batch: WG273035-2 WG273035-3					
Aroclor 1016	72	75	40-140	3	20
Aroclor 1260	80	83	40-140	3	20

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		66		30-150	A
Decachlorobiphenyl	60		70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		66		30-150	B
Decachlorobiphenyl	79		91		30-150	B

PESTICIDES

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 20:56	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.033	1
Lindane	ND		ug/l	0.033	1
Alpha-BHC	ND		ug/l	0.033	1
Beta-BHC	ND		ug/l	0.033	1
Heptachlor	ND		ug/l	0.033	1
Aldrin	ND		ug/l	0.033	1
Heptachlor epoxide	ND		ug/l	0.033	1
Endrin	ND		ug/l	0.066	1
Endrin ketone	ND		ug/l	0.066	1
Dieldrin	ND		ug/l	0.066	1
4,4'-DDE	ND		ug/l	0.066	1
4,4'-DDT	ND		ug/l	0.066	1
Endosulfan I	ND		ug/l	0.033	1
Endosulfan sulfate	ND		ug/l	0.066	1
Methoxychlor	ND		ug/l	0.328	1
Chlordane	ND		ug/l	0.328	1
Hexachlorobenzene	ND		ug/l	0.033	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-01	Date Collected:	03/06/07 08:30
Client ID:	MW-2	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 20:56	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.066	1
Endosulfan II	ND		ug/l	0.066	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 21:25	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.222	1
Chlordane	ND		ug/l	0.222	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 21:25	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 21:53	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.217	1
Chlordane	ND		ug/l	0.217	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-03	Date Collected:	03/06/07 11:10
Client ID:	MW-4S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 21:53	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	69		30-150	B

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 22:22	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.220	1
Chlordane	ND		ug/l	0.220	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 22:22	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 22:51	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.222	1
Chlordane	ND		ug/l	0.222	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/12/07 22:51	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.044	1
Endosulfan II	ND		ug/l	0.044	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	80		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/13/07 23:20	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
4,4'-DDD	ND		ug/l	0.043	1
Endosulfan II	ND		ug/l	0.043	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	03/07/07 19:00
Analytical Date:	03/13/07 23:20	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	03/12/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.043	1
Endrin ketone	ND		ug/l	0.043	1
Dieldrin	ND		ug/l	0.043	1
4,4'-DDE	ND		ug/l	0.043	1
4,4'-DDT	ND		ug/l	0.043	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan sulfate	ND		ug/l	0.043	1
Methoxychlor	ND		ug/l	0.215	1
Chlordane	ND		ug/l	0.215	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8081A
Analytical Date: 03/12/07 19:30
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 19:00
Cleanup Method1: EPA 3620B
Cleanup Date1: 03/12/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 01-06 Batch: WG272583-1				
Delta-BHC	ND		ug/l	0.020
Lindane	ND		ug/l	0.020
Alpha-BHC	ND		ug/l	0.020
Beta-BHC	ND		ug/l	0.020
Heptachlor	ND		ug/l	0.020
Aldrin	ND		ug/l	0.020
Heptachlor epoxide	ND		ug/l	0.020
Endrin	ND		ug/l	0.040
Endrin ketone	ND		ug/l	0.040
Dieldrin	ND		ug/l	0.040
4,4'-DDE	ND		ug/l	0.040
4,4'-DDT	ND		ug/l	0.040
Endosulfan I	ND		ug/l	0.020
Endosulfan sulfate	ND		ug/l	0.040
Methoxychlor	ND		ug/l	0.200
Chlordane	ND		ug/l	0.200
Hexachlorobenzene	ND		ug/l	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	56		30-150	B

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8081A
Analytical Date: 03/12/07 19:30
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 03/07/07 19:00
Cleanup Method1: EPA 3620B
Cleanup Date1: 03/12/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 01-06 Batch: WG272583-1				
4,4'-DDD	ND		ug/l	0.040
Endosulfan II	ND		ug/l	0.040

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	56		30-150	B

METALS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-01
Client ID: MW-2
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 08:30
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.033		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Calcium, Dissolved	18		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Iron, Dissolved	1.5		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Manganese, Dissolved	2.22		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 09:59	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Sodium, Dissolved	7.2		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:19	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-02	Date Collected:	03/06/07 09:45
Client ID:	MW-3	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.027		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Calcium, Dissolved	4.8		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Iron, Dissolved	ND		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Manganese, Dissolved	0.385		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 10:01	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Sodium, Dissolved	5.1		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:49	EPA 3005A	60,6010B	AI

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-03
Client ID: MW-4S
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 11:10
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.029		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Calcium, Dissolved	1.2		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Iron, Dissolved	0.15		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Manganese, Dissolved	0.037		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 10:04	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Sodium, Dissolved	5.1		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:52	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-04	Date Collected:	03/06/07 11:25
Client ID:	MW-4D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	0.015		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.065		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Calcium, Dissolved	36		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Iron, Dissolved	10		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Manganese, Dissolved	6.23		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 10:06	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Sodium, Dissolved	27		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:55	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-05	Date Collected:	03/06/07 12:25
Client ID:	MW-6S	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.018		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Calcium, Dissolved	21		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Iron, Dissolved	ND		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Manganese, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 10:08	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Sodium, Dissolved	12		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.090		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:59	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0703115
Project Number:	Not Specified	**Report Date:**	03/13/07

SAMPLE RESULTS

Lab ID:	L0703115-06	Date Collected:	03/06/07 12:40
Client ID:	MW-6D	Date Received:	03/06/07
Sample Location:	HAMILTON, MA.	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.031		mg/l	0.010	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Calcium, Dissolved	28		mg/l	0.10	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Iron, Dissolved	6.4		mg/l	0.05	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Manganese, Dissolved	5.00		mg/l	0.010	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 10:09	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Sodium, Dissolved	19		mg/l	2.0	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 14:02	EPA 3005A	60,6010B	AI

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-06 Batch: WG272564-1									
Mercury, Dissolved	ND		mg/l	0.0002	1	03/07/07 16:05	03/08/07 09:48	64,7470A	DM

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-06 Batch: WG272575-1									
Arsenic, Dissolved	ND		mg/l	0.005	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Barium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Calcium, Dissolved	ND		mg/l	0.10	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Iron, Dissolved	ND		mg/l	0.05	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Manganese, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Selenium, Dissolved	ND		mg/l	0.010	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Sodium, Dissolved	ND		mg/l	2.0	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	03/07/07 18:00	03/09/07 13:05	60,6010B	AI

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-06 Batch: WG272564-2 WG272564-3					
Mercury, Dissolved	104	101	80-120	3	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-06 Batch: WG272575-2 WG272575-3					
Arsenic, Dissolved	102	103	80-120	1	20
Barium, Dissolved	100	100	80-120	0	20
Cadmium, Dissolved	100	101	80-120	1	20
Calcium, Dissolved	91	92	80-120	1	20
Chromium, Dissolved	100	100	80-120	0	20
Copper, Dissolved	93	93	80-120	0	20
Iron, Dissolved	96	97	80-120	1	20
Lead, Dissolved	100	100	80-120	0	20
Manganese, Dissolved	96	96	80-120	0	20
Selenium, Dissolved	108	109	80-120	1	20
Silver, Dissolved	99	100	80-120	1	20
Sodium, Dissolved	96	97	80-120	1	20
Zinc, Dissolved	96	96	80-120	0	20

INORGANICS
&
MISCELLANEOUS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-01
Client ID: MW-2
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 08:30
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:41	64,9014	DD
General Chemistry									
Alkalinity, Total	83		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	160		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
Chloride	7.6		mg/l	1.0	1	-	03/12/07 20:16	1,9251	DD
Nitrogen, Nitrate	0.86		mg/l	0.10	1	-	03/06/07 23:56	30,4500NO3-F	DD
Sulfate	34		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	45		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-02
Client ID: MW-3
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 09:45
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
otal Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:42	64,9014	DD
eneral Chemistry									
Alkalinity, Total	8.8		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
olids, Total Dissolved	55		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
hloride	7.0		mg/l	1.0	1	-	03/12/07 20:17	1,9251	DD
Nitrogen, Nitrate	0.14		mg/l	0.10	1	-	03/07/07 00:13	30,4500NO3-F	DD
ulfate	ND		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
hemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-03
Client ID: MW-4S
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 11:10
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:42	64,9014	DD
General Chemistry									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	31		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
Chloride	7.9		mg/l	1.0	1	-	03/12/07 20:18	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/07/07 00:14	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-04
Client ID: MW-4D
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 11:25
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
otal Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:43	64,9014	DD
eneral Chemistry									
Alkalinity, Total	100		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
olids, Total Dissolved	140		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
hloride	15		mg/l	1.0	1	-	03/12/07 20:19	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/07/07 00:14	30,4500NO3-F	DD
ulfate	ND		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
hemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-05
Client ID: MW-6S
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 12:25
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:44	64,9014	DD
General Chemistry									
Alkalinity, Total	38		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
Solids, Total Dissolved	130		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
Chloride	9.8		mg/l	1.0	1	-	03/12/07 20:19	1,9251	DD
Nitrogen, Nitrate	1.4		mg/l	0.10	1	-	03/07/07 00:15	30,4500NO3-F	DD
Sulfate	31		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

SAMPLE RESULTS

Lab ID: L0703115-06
Client ID: MW-6D
Sample Location: HAMILTON, MA.
Matrix: Water

Date Collected: 03/06/07 12:40
Date Received: 03/06/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
otal Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:47	64,9014	DD
eneral Chemistry									
Alkalinity, Total	79		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
olids, Total Dissolved	220		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
loride	40		mg/l	1.0	1	-	03/12/07 20:20	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/07/07 00:16	30,4500NO3-F	DD
lfate	35		mg/l	20	2	03/10/07 14:30	03/10/07 14:30	1,9038	ST
emical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115

Project Number: Not Specified **Report Date:** 03/13/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry for sample(s): 01-06 Batch: WG272473-2									
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	03/06/07 23:42	30,4500NO3-F	DD
Total Cyanide by MCP 9014 for sample(s): 01-06 Batch: WG272674-3									
Cyanide, Total	ND		mg/l	0.005	1	03/08/07 15:30	03/08/07 20:21	64,9014	DD
General Chemistry for sample(s): 01-06 Batch: WG272758-1									
Solids, Total Dissolved	ND		mg/l	10	1	-	03/09/07 13:00	30,2540C	DW
General Chemistry for sample(s): 01-06 Batch: WG272762-1									
Chemical Oxygen Demand	ND		mg/l	20	1	-	03/09/07 11:05	30,5220D	DW
General Chemistry for sample(s): 01-06 Batch: WG272888-1									
Sulfate	ND		mg/l	10	1	03/10/07 14:30	03/10/07 14:30	1,9038	ST
General Chemistry for sample(s): 01-06 Batch: WG272898-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	03/09/07 13:26	30,2320B	JT
General Chemistry for sample(s): 01-06 Batch: WG272964-2									
Chloride	ND		mg/l	1.0	1	-	03/12/07 20:11	1,9251	DD

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-06 Batch: WG272473-1					
Nitrogen, Nitrate	96	-	88-105	-	
Total Cyanide by MCP 9014 Associated sample(s): 01-06 Batch: WG272674-1 WG272674-2					
Cyanide, Total	107	100	80-120	7	20
Associated sample(s): 01-06 Batch: WG272758-2					
Solids, Total Dissolved	95	-	72-121	-	
Associated sample(s): 01-06 Batch: WG272762-2					
Chemical Oxygen Demand	97	-	93-106	-	
Associated sample(s): 01-06 Batch: WG272888-2					
Sulfate	90	-	84-108	-	
Associated sample(s): 01-06 Batch: WG272898-2					
Alkalinity, Total	102	-	85-115	-	
Associated sample(s): 01-06 Batch: WG272964-1					
Chloride	93	-	84-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-06 QC Batch ID: WG272473-3 QC Sample: L0703115-05 Client ID: MW-6S									
Nitrogen, Nitrate	1.4	4	5.5	102	-	-	83-120	-	6
Associated sample(s): 01-06 QC Batch ID: WG272762-3 QC Sample: L0703115-01 Client ID: MW-2									
Chemical Oxygen Demand	45	238	300	105	-	-	84-120	-	12
Associated sample(s): 01-06 QC Batch ID: WG272888-3 QC Sample: L0703115-03 Client ID: MW-4S									
Sulfate	ND	20	28	140	-	-	55-147	-	14
Associated sample(s): 01-06 QC Batch ID: WG272898-4 QC Sample: L0703115-02 Client ID: MW-3									
Alkalinity, Total	8.8	100	110	102	-	-	86-116	-	4
Associated sample(s): 01-06 QC Batch ID: WG272964-3 QC Sample: L0703115-02 Client ID: MW-3									
Chloride	7.0	20	26	95	-	-	58-140	-	7

Lab Duplicate Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Associated sample(s): 01-06 QC Batch ID: WG272473-4 QC Sample: L0703134-01 Client ID: DUP Sample					
Nitrogen, Nitrate	0.46	0.44	mg/l	4	6
Associated sample(s): 01-06 QC Batch ID: WG272758-3 QC Sample: L0703115-04 Client ID: MW-4D					
Solids, Total Dissolved	140	180	mg/l	25	11
Associated sample(s): 01-06 QC Batch ID: WG272762-4 QC Sample: L0703115-01 Client ID: MW-2					
Chemical Oxygen Demand	45	45	mg/l	0	12
Associated sample(s): 01-06 QC Batch ID: WG272888-4 QC Sample: L0703115-05 Client ID: MW-6S					
Sulfate	31	31	mg/l	0	14
Associated sample(s): 01-06 QC Batch ID: WG272898-3 QC Sample: L0703115-02 Client ID: MW-3					
Alkalinity, Total	8.8	8.7	mg CaCO3/L	1	4
Associated sample(s): 01-06 QC Batch ID: WG272964-4 QC Sample: L0703129-02 Client ID: DUP Sample					
Chloride	120	120	mg/l	0	7

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent
E	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703115-01A	Vial HCl preserved	E	N/A	3 C	Y	Absent	MCP-8260-04
L0703115-01B	Vial HCl preserved	E	N/A	3 C	Y	Absent	MCP-8260-04
L0703115-01C	Plastic 250ml NaOH preserved	C	<12	2C	Y	Absent	MCP-TCN9014-04
L0703115-01D	Plastic 250ml H2SO4 preserved	C	<2	2C	Y	Absent	COD-5220
L0703115-01E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-01F	Plastic 500ml unpreserved	C	7	2C	Y	Absent	TDS-2540
L0703115-01G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0703115-01H	Amber 1000ml unpreserved	D	7	3C	Y	Absent	MCP-8081-04
L0703115-01I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0703115-01J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04
L0703115-01K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	-
L0703115-02A	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-02B	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-02C	Plastic 250ml NaOH preserved	A	<12	3C	Y	Absent	MCP-TCN9014-04
L0703115-02D	Plastic 250ml H2SO4 preserved	A	<2	3C	Y	Absent	COD-5220
L0703115-02E	Plastic 500ml unpreserved	C	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-02F	Plastic 500ml unpreserved	A	7	3C	Y	Absent	TDS-2540
L0703115-02G	Plastic 500ml HNO3 preserved	D	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703115-02H	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8081-04
L0703115-02I	Amber 1000ml unpreserved	D	7	3C	Y	Absent	MCP-8082-04
L0703115-02J	Amber 1000ml unpreserved	D	7	3C	Y	Absent	MCP-8270-04
L0703115-02K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703115-03A	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-03B	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-03C	Plastic 250ml NaOH preserved	A	<12	3C	Y	Absent	MCP-TCN9014-04
L0703115-03D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703115-03E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-03F	Plastic 500ml unpreserved	C	7	2C	Y	Absent	TDS-2540
L0703115-03G	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0703115-03H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0703115-03I	Amber 1000ml unpreserved	D	7	3C	Y	Absent	MCP-8082-04
L0703115-03J	Amber 1000ml unpreserved	C	7	2C	Y	Absent	MCP-8270-04
L0703115-03K	Amber 1000ml unpreserved	C	7	2C	Y	Absent	MCP-8270-04
L0703115-04A	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-04B	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-04C	Plastic 250ml NaOH preserved	B	<12	2C	Y	Absent	MCP-TCN9014-04
L0703115-04D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703115-04E	Plastic 500ml unpreserved	C	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-04F	Plastic 500ml unpreserved	C	7	2C	Y	Absent	TDS-2540
L0703115-04G	Plastic 500ml HNO3 preserved	A	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0703115-04H	Amber 1000ml unpreserved	C	7	2C	Y	Absent	MCP-8081-04
L0703115-04I	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8082-04
L0703115-04J	Amber 1000ml unpreserved	C	7	2C	Y	Absent	MCP-8270-04
L0703115-04K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703115-05A	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703115-05B	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-05C	Plastic 250ml NaOH preserved	B	<12	2C	Y	Absent	MCP-TCN9014-04
L0703115-05D	Plastic 250ml H2SO4 preserved	A	<2	3C	Y	Absent	COD-5220
L0703115-05E	Plastic 500ml unpreserved	C	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-05F	Plastic 500ml unpreserved	C	7	2C	Y	Absent	TDS-2540
L0703115-05G	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0703115-05H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0703115-05I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0703115-05J	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703115-05K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04
L0703115-06A	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-06B	Vial HCl preserved	D	N/A	3C	Y	Absent	MCP-8260-04
L0703115-06C	Plastic 250ml NaOH preserved	C	<12	2C	Y	Absent	MCP-TCN9014-04
L0703115-06D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0703115-06E	Plastic 500ml unpreserved	D	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0703115-06F	Plastic 500ml unpreserved	D	7	3C	Y	Absent	TDS-2540
L0703115-06G	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0703115-06H	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8081-04
L0703115-06I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0703115-06J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04
L0703115-06K	Amber 1000ml unpreserved	A	7	3C	Y	Absent	MCP-8270-04

Container Comments

L0703115-01A	Temp. probe
L0703115-01B	Temp. probe
L0703115-01C	Temp. probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0703115-01D	Temp. probe
L0703115-01E	Temp. probe
L0703115-01F	Temp. probe
L0703115-01G	Temp. probe
L0703115-01H	Temp. probe
L0703115-01I	Temp. probe
L0703115-01J	Temp. probe
L0703115-01K	Temp. probe
L0703115-02A	Temp. probe
L0703115-02B	Temp. probe
L0703115-02C	Temp. probe
L0703115-02D	Temp. probe
L0703115-02E	Temp. probe
L0703115-02F	Temp. probe
L0703115-02G	Temp. probe
L0703115-02H	Temp. probe
L0703115-02I	Temp. probe
L0703115-02J	Temp. probe
L0703115-02K	Temp. probe
L0703115-03A	Temp. probe
L0703115-03B	Temp. probe
L0703115-03C	Temp. probe
L0703115-03D	Temp. probe
L0703115-03E	Temp. probe
L0703115-03F	Temp. probe
L0703115-03G	Temp. probe
L0703115-03H	Temp. probe
L0703115-03I	Temp. probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0703115-03J	Temp. probe
L0703115-03K	Temp. probe
L0703115-04A	Temp. probe
L0703115-04B	Temp. probe
L0703115-04C	Temp. probe
L0703115-04D	Temp. probe
L0703115-04E	Temp. probe
L0703115-04F	Temp. probe
L0703115-04G	Temp. probe
L0703115-04H	Temp. probe
L0703115-04I	Temp. probe
L0703115-04J	Temp. probe
L0703115-04K	Temp. probe
L0703115-05A	Temp. probe
L0703115-05B	Temp. probe
L0703115-05C	Temp. probe
L0703115-05D	Temp. probe
L0703115-05E	Temp. probe
L0703115-05F	Temp. probe
L0703115-05G	Temp. probe
L0703115-05H	Temp. probe
L0703115-05I	Temp. probe
L0703115-05J	Temp. probe
L0703115-05K	Temp. probe
L0703115-06A	Temp. probe
L0703115-06B	Temp. probe
L0703115-06C	Temp. probe
L0703115-06D	Temp. probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0703115
Report Date: 03/13/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0703115-06E	This container has not been properly returned to CUSTODY! It was last assigned to JTRAN for department CUSTODY on 03/09/07 18:06
L0703115-06F	Temp. probe
L0703115-06G	Temp. probe
L0703115-06H	Temp. probe
L0703115-06I	Temp. probe
L0703115-06J	Temp. probe
L0703115-06K	Temp. probe

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115
Project Number: Not Specified **Report Date:** 03/13/07

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.
LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD - Matrix Spike Sample Duplicate: Refer to MS.
NA - Not Applicable.
NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND - Not detected at the reported detection limit for the sample.
RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

The following data qualifiers have been identified for use under the CT DEP Reasonable Confidence Protocols.

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

J - Estimated value. The analyte was tentatively identified; the quantitation is an estimation. (Tentatively identified compounds only.)

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0703115
Project Number: Not Specified **Report Date:** 03/13/07

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

60 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Woods Hole Labs performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Woods Hole Labs be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

Chain 1 of 2

ALPHA Job # L0703415

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630

Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4636
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Feld ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Plastic	VOA's	HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	PCB's & Pesticides (5)	Comments:
MW-2	3/6/2007	0830	2	#3	5	2**	X	X	X	X			X	X	X	X	X	X	Spec. Cond. & DO in field
MW-3	3/6/2007	0945	2	4	5	2	X	X	X	X			X	X	X	X	X	X	
MW-4S	3/6/2007	1110	2	4	#5	2	X	X	X	X			X	X	X	X	X	X	
MW-4D	3/6/2007	1125	2	4	#5	2	X	X	X	X			X	X	X	X	X	X	
MW-6S	3/6/2007	1225	2	4	#5	2	X	X	X	X			X	X	X	X	X	X	
MW-6D	3/6/2007	1240	2	4	#5	2	X	X	X	X			X	X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extradable Compounds by EPA Method 8270 (including PAH's)

(5) PCBs and Pesticides by EPA Method 8080

**2 VOA's for MW-2 submitted one day prior (3/5/07).

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/6/07 1520	1 Don Barba	3/6/07 1540
2 Don Barba	3/6/07 1645	2 [signature]	3/6/07 1645
3		3	

Relinquished by Sampler: 3 — Date Time: — Received By: 3 — Date Time: — Seal # — Preserve where applicable ☐ ☐ ☐ ☐ On Ice — Temp.

ALPHA Job # 10703115

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4638

Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other

EST to Invoice:	SEA
Lab to Invoice:	SEA
Lab Report to:	Alex.Dubanowitz@seacon.com
Billing Reference:	7800-QF-xx
	QF4971216-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Type Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	PCB's & Pesticides (5)	Comments:
MW-2	3/6/2007	0830	2	~~4~~ 3	5	2**	X	X	X	X			X	X	X	X	X	X	Spec. Cond. & DO in field
MW-3	3/6/2007	0945	2	4	5	2	X	X	X	X			X	X	X	X	X	X	* VOA's for MW-2
MW-4S	3/6/2007	1110	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	were collected on
MW-4D	3/6/2007	1125	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	3/5/07 at 14:30
MW-6S	3/6/2007	1225	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	AV
MW-8D	3/6/2007	1240	2	4	~~4~~ 5	2	X	X	X	X			X	X	X	X	X	X	

Turnaround Information

- Std. 10 Day Turnaround
- 7 Day RUSH
- 4 Day RUSH
- 3 Day RUSH
- 2 Day RUSH
- 1 Day RUSH

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (including PAH's)

(5) PCBs and Pesticides by EPA Method 8080

**2 VOA's for MW-2 submitted one day prior (3/5/07).

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/6/07 1520	1 [signature]	3/6/07 1540
2		2	
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

03130717:19

ANALYTICAL REPORT

Prepared for:
SEA Consultants, Inc.
485 Massachusetts Ave.
Cambridge, MA 02139

Project:	Hamilton Sanitary Landfill
ETR:	0703022
Report Date:	March 27, 2007

Certifications and Accreditations

Massachusetts M-MA030
Connecticut PH-0141
New Hampshire 2206
Rhode Island LAO00289
New Jersey MA015
Maine MA0030
New York 11627
Louisiana 03090
Florida E87814
Pennsylvania 68-02089
Army Corps of Engineers
Department of the Navy

This report shall not be reproduced except in full, without written approval from the laboratory.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Alpha Woods Hole Labs

Project Number: 0703022

Project Location: **MCP RTN #[1]:**

This Form provides certifications for the following data set: [Laboratory Sample ID Number(s)]:

0703022-01,-02,-03

Sample Matrices: Groundwater **[Soil/Sediment]** Drinking Water Other:

MCP SW-846 Methods used (as specified in MADEP Compendium of Analytical Methods)
Check all that apply:

8260B (X)	8151A ( )	8330 ( )	6010B ( )	**7470A/1A (X)**
8270C (X)	**8081A (X)**	VPH ( )	**6020 (X)**	9014M[2] ( )
8082 (X)	8021B ( )	EPH ( )	7000 S[3] ( )	Other:

[1] – List Release Tracking Number (RTN), if known.
[2]M – SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method.
[3]S – SW-846 Methods 7000 Series. List individual method and analyte.

	An affirmative response to question A, B, C and D is required for "Presumptive Certainty" status.		
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	**[Yes]**	No[1]
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	**[Yes]**	No[1]
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for Acquisition and Reporting of Analytical Data"?	**[Yes]**	No[1]
D	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective Methods)?	Yes	No[1]
	A response to questions E and F below is required for "Presumptive Certainty" status.		
E	Were all analytical QC performance standards and recommendations for the specified methods achieved?	Yes	**[No[1]]**
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	**[Yes]**	No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

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

Signature: Gerard R. Zsohau **Position:** **Senior Project Manager**

Printed Name: **Gerard R. Zsohau** **Date:** **03/27/07**

CASE NARRATIVE
Alpha Woods Hole Labs

ETR: 0703022
Project: Hamilton Sanitary Landfill

All analyses were performed according to Alpha Woods Hole Labs quality assurance program and documented Standard Operating Procedures (SOPs). The analytical results contained in this report were performed within holding time, and with appropriate quality control measures, except where noted. A summary of all state and federal accreditations is provided within this report. Blank correction of results is not performed in the laboratory for any parameter. Soil/sediment samples are reported on a dry weight basis unless otherwise noted. Air and sediment samples are either not certifiable under the NELAC and/or are not currently held as accredited matrices.

Volatile Organics by 8260

1. The initial calibration had values for compounds outside of the 15% RSD QC advisory limit. Refer to the Form VI Initial Calibration Summary report for specific outliers. This initial calibration meets the acceptability criteria.

Preparation Methods

1. Organic extractable parameters were extracted via preparation method SW-846 Method 3570.

Semi-Volatile Organics by 8270

1. The initial calibration had values for compounds outside of the 15% RSD QC advisory limit. Refer to the Form VI Initial Calibration Summary report for specific outliers. This initial calibration meets the acceptability criteria.

2. The laboratory control samples, SS030907LCS03 and SS030907LCSD03 had Aniline recovered below the 40% QC limit at 39% and 29% respectively. Additionally, 2,4-Dinitrophenol was not detected in either laboratory control sample. Since 2,4-Dinitrophenol was not detected, all samples were re-extracted on 3/16/07 and both sets of analyses are reported.

3. The laboratory control samples, SS031607LCS04 and SS031607LCSD04 had a few recoveries outside of QC limits as well as almost all RPD values above the 30% QC limit due to an apparent overall lower recovery for the LCS versus the LCSD. Since these laboratory control samples are associated to the re-extracted samples for 2,4-Dinitrophenol, and this compound recovered above 10% in the LCS and within QC limits in the LCSD, no further action was taken.

Pesticides by 8081

1. The continuing calibration verification standard had components outside of the 15% D QC acceptance limit. Refer to the Form VII Calibration Verification summary report for specific outliers. This calibration verification meets the acceptability criteria.

Metals

Sample SED-1(0703022-01) was digested using (3050:1T, 3050:2T and 7471) and analyzed in duplicate with a matrix spike. All QC measures were within acceptance criteria except for the following:

1. The matrix spike had Calcium recovered below the 75% QC limit at 69%. This may be due to matrix effect.

The enclosed results of analyses are representative of the samples as received by the laboratory. Alpha Woods Hole Labs makes no representations or certifications as to the method of sample collection, sample identification, or transporting/handling procedures used prior to the receipt of samples by Alpha Woods Hole Labs. To the best of my knowledge, the information contained in this report is accurate and complete.

Approved by: [illegible] Title: Sr. Project Manager Date: 03-27-07

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Sample ID Cross Reference

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**

Lab Sample ID	Client Sample ID
0703022-01	SED-1
0703022-02	SED-2
0703022-03	SED-3

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VOLATILE ORGANICS

Form I
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-1**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/08/07	74.4	15	11.99	0.1	5	1	ALM

Parameter	Result	
Dichlorodifluoromethane	200	U
Chloromethane	200	U
Vinyl chloride	200	U
Bromomethane	200	U
Chloroethane	200	U
Trichlorofluoromethane	200	U
Diethyl ether	200	U
Acetone	510	U
1,1-Dichloroethene	200	U
Carbon disulfide	200	U
Methylene chloride	**580**	
Methyl tert-butyl ether (MTBE)	200	U
trans-1,2-Dichloroethene	200	U
Diisopropyl Ether (DIPE)	200	U
1,1-Dichloroethane	200	U
Ethyl Tertiary Butyl Ether (ETBE)	200	U
2-Butanone (MEK)	200	U
cis-1,2-Dichloroethene	200	U
2,2-Dichloropropane	200	U
Bromochloromethane	200	U
Chloroform	200	U
1,1,1-Trichloroethane	200	U
1,1-Dichloropropene	200	U
Carbon tetrachloride	200	U
Tetrahydrofuran	200	U
Benzene	200	U
Tertiary Amyl Methyl Ether (TAME)	200	U
1,2-Dichloroethane	200	U
Trichloroethene	200	U
1,2-Dichloropropane	200	U
Dibromomethane	200	U
1,4-Dioxane	10000	U
Bromodichloromethane	200	U
Methyl isobutyl ketone (MIBK)	200	U

Parameter	Result	
1,3-Dichloropropene, Total	200	U
Toluene	200	U
1,1,2-Trichloroethane	200	U
2-Hexanone	200	U
Tetrachloroethene	200	U
1,3-Dichloropropane	200	U
Dibromochloromethane	200	U
1,2-Dibromoethane	200	U
Chlorobenzene	200	U
1,1,1,2-Tetrachloroethane	200	U
Ethylbenzene	200	U
Xylenes, Total	610	U
Styrene	200	U
Bromoform	200	U
Isopropylbenzene	200	U
1,1,2,2-Tetrachloroethane	200	U
Bromobenzene	200	U
1,2,3-Trichloropropane	200	U
n-Propylbenzene	200	U
2-Chlorotoluene	200	U
1,3,5-Trimethylbenzene	200	U
4-Chlorotoluene	200	U
tert-Butylbenzene	200	U
1,2,4-Trimethylbenzene	200	U
sec-Butylbenzene	200	U
1,3-Dichlorobenzene	200	U
p-Isopropyltoluene	200	U
1,4-Dichlorobenzene	200	U
n-Butylbenzene	200	U
1,2-Dichlorobenzene	200	U
1,2-Dibromo-3-chloropropane	200	U
1,2,4-Trichlorobenzene	200	U
Hexachlorobutadiene	200	U
Naphthalene	200	U
1,2,3-Trichlorobenzene	200	U

Surrogate	% Recovery	Acceptance Range (%)
2-Bromo-1-chloropropane	120	70-130
1-Chloro-2-fluorobenzene	127	70-130
1,4-Dichlorobutane	113	70-130
Dibromofluoromethane	90	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	102	70-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 11:50

Form I
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-2**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/08/07	56.8	15	8.66	0.1	5	1	ALM

Parameter	Result		Parameter	Result	
Dichlorodifluoromethane	380	U	1,3-Dichloropropene, Total	380	U
Chloromethane	380	U	Toluene	380	U
Vinyl chloride	380	U	1,1,2-Trichloroethane	380	U
Bromomethane	380	U	2-Hexanone	380	U
Chloroethane	380	U	Tetrachloroethene	380	U
Trichlorofluoromethane	380	U	1,3-Dichloropropane	380	U
Diethyl ether	380	U	Dibromochloromethane	380	U
Acetone	**1200**	B	1,2-Dibromoethane	380	U
1,1-Dichloroethene	380	U	Chlorobenzene	380	U
Carbon disulfide	380	U	1,1,1,2-Tetrachloroethane	380	U
Methylene chloride	**1300**		Ethylbenzene	380	U
Methyl tert-butyl ether (MTBE)	380	U	Xylenes, Total	1100	U
trans-1,2-Dichloroethene	380	U	Styrene	380	U
Diisopropyl Ether (DIPE)	380	U	Bromoform	380	U
1,1-Dichloroethane	380	U	Isopropylbenzene	380	U
Ethyl Tertiary Butyl Ether (ETBE)	380	U	1,1,2,2-Tetrachloroethane	380	U
2-Butanone (MEK)	380	U	Bromobenzene	380	U
cis-1,2-Dichloroethene	380	U	1,2,3-Trichloropropane	380	U
2,2-Dichloropropane	380	U	n-Propylbenzene	380	U
Bromochloromethane	380	U	2-Chlorotoluene	380	U
Chloroform	380	U	1,3,5-Trimethylbenzene	380	U
1,1,1-Trichloroethane	380	U	4-Chlorotoluene	380	U
1,1-Dichloropropene	380	U	tert-Butylbenzene	380	U
Carbon tetrachloride	380	U	1,2,4-Trimethylbenzene	380	U
Tetrahydrofuran	380	U	sec-Butylbenzene	380	U
Benzene	380	U	1,3-Dichlorobenzene	380	U
Tertiary Amyl Methyl Ether (TAME)	380	U	p-Isopropyltoluene	380	U
1,2-Dichloroethane	380	U	1,4-Dichlorobenzene	380	U
Trichloroethene	380	U	n-Butylbenzene	380	U
1,2-Dichloropropane	380	U	1,2-Dichlorobenzene	380	U
Dibromomethane	380	U	1,2-Dibromo-3-chloropropane	380	U
1,4-Dioxane	19000	U	1,2,4-Trichlorobenzene	380	U
Bromodichloromethane	380	U	Hexachlorobutadiene	380	U
Methyl isobutyl ketone (MIBK)	380	U	Naphthalene	380	U
			1,2,3-Trichlorobenzene	380	U

Surrogate	% Recovery	Acceptance Range (%)
2-Bromo-1-chloropropane	124	70-130
1-Chloro-2-fluorobenzene	128	70-130
1,4-Dichlorobutane	118	70-130
Dibromofluoromethane	94	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	102	70-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 11:50

Form I
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-3**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/08/07	78.8	15	7.32	0.1	5	1	ALM

Parameter	Result		Parameter	Result	
Dichlorodifluoromethane	290	U	1,3-Dichloropropene, Total	290	U
Chloromethane	290	U	Toluene	290	U
Vinyl chloride	290	U	1,1,2-Trichloroethane	290	U
Bromomethane	290	U	2-Hexanone	290	U
Chloroethane	290	U	Tetrachloroethene	290	U
Trichlorofluoromethane	290	U	1,3-Dichloropropane	290	U
Diethyl ether	290	U	Dibromochloromethane	290	U
Acetone	**830**	B	1,2-Dibromoethane	290	U
1,1-Dichloroethene	290	U	Chlorobenzene	290	U
Carbon disulfide	290	U	1,1,1,2-Tetrachloroethane	290	U
Methylene chloride	720	U	Ethylbenzene	290	U
Methyl tert-butyl ether (MTBE)	290	U	Xylenes, Total	860	U
trans-1,2-Dichloroethene	290	U	Styrene	290	U
Diisopropyl Ether (DIPE)	290	U	Bromoform	290	U
1,1-Dichloroethane	290	U	Isopropylbenzene	290	U
Ethyl Tertiary Butyl Ether (ETBE)	290	U	1,1,2,2-Tetrachloroethane	290	U
2-Butanone (MEK)	290	U	Bromobenzene	290	U
cis-1,2-Dichloroethene	290	U	1,2,3-Trichloropropane	290	U
2,2-Dichloropropane	290	U	n-Propylbenzene	290	U
Bromochloromethane	290	U	2-Chlorotoluene	290	U
Chloroform	290	U	1,3,5-Trimethylbenzene	290	U
1,1,1-Trichloroethane	290	U	4-Chlorotoluene	290	U
1,1-Dichloropropene	290	U	tert-Butylbenzene	290	U
Carbon tetrachloride	290	U	1,2,4-Trimethylbenzene	290	U
Tetrahydrofuran	290	U	sec-Butylbenzene	290	U
Benzene	290	U	1,3-Dichlorobenzene	290	U
Tertiary Amyl Methyl Ether (TAME)	290	U	p-Isopropyltoluene	290	U
1,2-Dichloroethane	290	U	1,4-Dichlorobenzene	290	U
Trichloroethene	290	U	n-Butylbenzene	290	U
1,2-Dichloropropane	290	U	1,2-Dichlorobenzene	290	U
Dibromomethane	290	U	1,2-Dibromo-3-chloropropane	290	U
1,4-Dioxane	14000	U	1,2,4-Trichlorobenzene	290	U
Bromodichloromethane	290	U	Hexachlorobutadiene	290	U
Methyl isobutyl ketone (MIBK)	290	U	Naphthalene	290	U
			1,2,3-Trichlorobenzene	290	U

Surrogate	% Recovery	Acceptance Range (%)
2-Bromo-1-chloropropane	104	70-130
1-Chloro-2-fluorobenzene	112	70-130
1,4-Dichlorobutane	102	70-130
Dibromofluoromethane	93	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	104	70-130

N/A - Not Applicable
B - Found in associated blank as well as sample.
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 11:50

Form I
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Blank**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **VS030807B05**
Associated Blank: N/A
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/08/07	100	15	5.00	0.1	5	1	ALM

Parameter	Result		Parameter	Result	
Dichlorodifluoromethane	300	U	1,3-Dichloropropene, Total	300	U
Chloromethane	300	U	Toluene	300	U
Vinyl chloride	300	U	1,1,2-Trichloroethane	300	U
Bromomethane	300	U	2-Hexanone	300	U
Chloroethane	300	U	Tetrachloroethene	300	U
Trichlorofluoromethane	300	U	1,3-Dichloropropane	300	U
Diethyl ether	300	U	Dibromochloromethane	300	U
Acetone	3100		1,2-Dibromoethane	300	U
1,1-Dichloroethene	300	U	Chlorobenzene	300	U
Carbon disulfide	300	U	1,1,1,2-Tetrachloroethane	300	U
Methylene chloride	750	U	Ethylbenzene	300	U
Methyl tert-butyl ether (MTBE)	300	U	Xylenes, Total	900	U
trans-1,2-Dichloroethene	300	U	Styrene	300	U
Diisopropyl Ether (DIPE)	300	U	Bromoform	300	U
1,1-Dichloroethane	300	U	Isopropylbenzene	300	U
Ethyl Tertiary Butyl Ether (ETBE)	300	U	1,1,2,2-Tetrachloroethane	300	U
2-Butanone (MEK)	300	U	Bromobenzene	300	U
cis-1,2-Dichloroethene	300	U	1,2,3-Trichloropropane	300	U
2,2-Dichloropropane	300	U	n-Propylbenzene	300	U
Bromochloromethane	300	U	2-Chlorotoluene	300	U
Chloroform	300	U	1,3,5-Trimethylbenzene	300	U
1,1,1-Trichloroethane	300	U	4-Chlorotoluene	300	U
1,1-Dichloropropene	300	U	tert-Butylbenzene	300	U
Carbon tetrachloride	300	U	1,2,4-Trimethylbenzene	300	U
Tetrahydrofuran	300	U	sec-Butylbenzene	300	U
Benzene	300	U	1,3-Dichlorobenzene	300	U
Tertiary Amyl Methyl Ether (TAME)	300	U	p-Isopropyltoluene	300	U
1,2-Dichloroethane	300	U	1,4-Dichlorobenzene	300	U
Trichloroethene	300	U	n-Butylbenzene	300	U
1,2-Dichloropropane	300	U	1,2-Dichlorobenzene	300	U
Dibromomethane	300	U	1,2-Dibromo-3-chloropropane	300	U
1,4-Dioxane	15000	U	1,2,4-Trichlorobenzene	300	U
Bromodichloromethane	300	U	Hexachlorobutadiene	300	U
Methyl isobutyl ketone (MIBK)	300	U	Naphthalene	300	U
			1,2,3-Trichlorobenzene	300	U

Surrogate	% Recovery	Acceptance Range (%)
2-Bromo-1-chloropropane	117	70-130
1-Chloro-2-fluorobenzene	123	70-130
1,4-Dichlorobutane	106	70-130
Dibromofluoromethane	83	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	102	70-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 11:50

Form III
Spike Recovery Summary
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/08/07	100	15	5.00	0.1	5	1	ALM

Lab ID: VS030807B05 VS030807LCS03 VS030807LCSD03

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Dichlorodifluoromethane	300	U	2700	90	2700	90	0	25	70-130
Chloromethane	300	U	2900	97	3000	99	1	25	70-130
Vinyl chloride	300	U	2900	97	2900	95	2	25	70-130
Bromomethane	300	U	2400	80	2400	81	1	25	70-130
Chloroethane	300	U	3200	106	3000	102	5	25	70-130
Trichlorofluoromethane	300	U	2800	94	2800	95	1	25	70-130
Diethyl ether	300	U	3100	103	3000	99	4	25	70-130
Acetone	3100		3600	120	3600	121	1	25	70-130
1,1-Dichloroethene	300	U	3000	99	3000	100	1	25	70-130
Carbon disulfide	300	U	3600	121	3600	121	0	25	70-130
Methylene chloride	750	U	3300	110	3400	113	2	25	70-130
Methyl tert-butyl ether (MTBE)	300	U	3200	108	3200	108	0	25	70-130
trans-1,2-Dichloroethene	300	U	3200	108	3200	106	1	25	70-130
Diisopropyl Ether (DIPE)	300	U	3100	103	3100	103	0	25	70-130
1,1-Dichloroethane	300	U	3200	106	3100	104	1	25	70-130
Ethyl Tertiary Butyl Ether (ETBE)	300	U	3000	101	3100	102	1	25	70-130
2-Butanone (MEK)	300	U	3300	110	3500	118	6	25	70-130
cis-1,2-Dichloroethene	300	U	3100	104	3200	105	1	25	70-130
2,2-Dichloropropane	300	U	3200	106	3200	106	0	25	70-130
Bromochloromethane	300	U	3200	108	3300	110	2	25	70-130
Chloroform	300	U	3200	105	3200	106	0	25	70-130
1,1,1-Trichloroethane	300	U	3100	104	3100	103	1	25	70-130
1,1-Dichloropropene	300	U	3100	103	3100	104	1	25	70-130
Carbon tetrachloride	300	U	3000	100	3000	99	1	25	70-130
Tetrahydrofuran	300	U	3100	102	3200	107	4	25	70-130
Benzene	300	U	3200	106	3100	104	2	25	70-130
Tertiary Amyl Methyl Ether (TAME)	300	U	3300	109	3200	107	2	25	70-130
1,2-Dichloroethane	300	U	3100	105	3100	103	1	25	70-130
Trichloroethene	300	U	3200	106	3100	104	1	25	70-130
1,2-Dichloropropane	300	U	3300	109	3200	108	1	25	70-130
Dibromomethane	300	U	3100	103	3200	105	2	25	70-130
1,4-Dioxane	15000	U	32000	106	31000	104	3	25	70-130
Bromodichloromethane	300	U	3200	106	3200	107	1	25	70-130

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Form III
Spike Recovery Summary
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/08/07	100	15	5.00	0.1	5	1	ALM

Lab ID: VS030807B05 VS030807LCS03 VS030807LCSD03

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Methyl isobutyl ketone (MIBK)	300	U	3700	124	3600	120	3	25	70-130
1,3-Dichloropropene, Total	300	U	6400	106	6400	108	1	25	70-130
Toluene	300	U	3000	101	3000	102	1	25	70-130
1,1,2-Trichloroethane	300	U	3200	106	3200	106	1	25	70-130
2-Hexanone	300	U	3600	121	3700	122	1	25	70-130
Tetrachloroethene	300	U	3100	105	3100	102	3	25	70-130
1,3-Dichloropropane	300	U	3200	105	3200	105	0	25	70-130
Dibromochloromethane	300	U	3400	112	3400	112	0	25	70-130
1,2-Dibromoethane	300	U	3100	105	3100	103	1	25	70-130
Chlorobenzene	300	U	3200	106	3200	106	1	25	70-130
1,1,1,2-Tetrachloroethane	300	U	3200	107	3200	108	1	25	70-130
Ethylbenzene	300	U	3200	107	3200	108	1	25	70-130
Xylenes, Total	900	U	9700	108	9700	108	0	25	70-130
Styrene	300	U	3300	109	3200	107	1	25	70-130
Bromoform	300	U	3100	102	3100	103	1	25	70-130
Isopropylbenzene	300	U	3200	108	3300	110	1	25	70-130
1,1,2,2-Tetrachloroethane	300	U	3300	109	3300	110	1	25	70-130
Bromobenzene	300	U	3000	101	3100	105	3	25	70-130
1,2,3-Trichloropropane	300	U	3300	111	3400	113	2	25	70-130
n-Propylbenzene	300	U	3300	110	3300	109	1	25	70-130
2-Chlorotoluene	300	U	3100	103	3200	105	2	25	70-130
1,3,5-Trimethylbenzene	300	U	3300	110	3300	109	1	25	70-130
4-Chlorotoluene	300	U	3200	107	3200	106	1	25	70-130
tert-Butylbenzene	300	U	3300	110	3400	112	2	25	70-130
1,2,4-Trimethylbenzene	300	U	3200	107	3200	107	0	25	70-130
sec-Butylbenzene	300	U	3300	110	3300	110	1	25	70-130
1,3-Dichlorobenzene	300	U	3100	102	3000	101	1	25	70-130
p-Isopropyltoluene	300	U	3300	110	3200	107	2	25	70-130
1,4-Dichlorobenzene	300	U	3000	101	3000	100	2	25	70-130
n-Butylbenzene	300	U	3200	108	3100	104	4	25	70-130
1,2-Dichlorobenzene	300	U	3100	104	3100	103	1	25	70-130
1,2-Dibromo-3-chloropropane	300	U	3300	110	3200	108	2	25	70-130
1,2,4-Trichlorobenzene	300	U	2800	93	2600	87	6	25	70-130

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Form III
Spike Recovery Summary
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **VS030807B05**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Analyzed	Percent Solid	Methanol Volume (ml)	Sample Amount (g)	Extract Volume (ml)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/08/07	100	15	5.00	0.1	5	1	ALM

Lab ID:	VS030807B05	VS030807LCS03		VS030807LCSD03				
Parameter	**Blank Conc.**	**LCS Conc.**	**LCS % Recovery**	**LCSD Conc.**	**LCSD % Recovery**	**% RPD**	**RPD Limit**	**% Recovery Limits**
Hexachlorobutadiene	300 U	3200	108	3100	104	4	25	70-130
Naphthalene	300 U	2900	97	2900	97	0	25	70-130
1,2,3-Trichlorobenzene	300 U	2900	96	2800	93	3	25	70-130

Surrogate	% Recovery		Acceptance Range (%)
2-Bromo-1-chloropropane	N/A	N/A	70-130
1-Chloro-2-fluorobenzene	N/A	N/A	70-130
1,4-Dichlorobutane	N/A	N/A	70-130
Dibromofluoromethane	101	101	70-130
Toluene-d8	99	99	70-130
4-Bromofluorobenzene	98	98	70-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

03/13/07 11:52

Supporting Quality Control Results

Form II
Surrogate Recovery
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: **N/A** SDG: **N/A**

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Client ID	Lab ID	2-Bromo-1-chloropropane	1-Chloro-2-fluorobenzene	1,4-Dichlorobutane
LCS	VS030807LCS03	N/A	N/A	N/A
LCSD	VS030807LCSD03	N/A	N/A	N/A
Blank	VS030807B05	117	123	106
SED-1	0703022-01	120	127	113
SED-2	0703022-02	124	128	118
SED-3	0703022-03	104	112	102

N/A - Not Applicable

Surrogate	QC Limit
2-Bromo-1-chloropropane	70-130
1-Chloro-2-fluorobenzene	70-130
1,4-Dichlorobutane	70-130
Dibromofluoromethane	70-130
Toluene-d8	70-130
4-Bromofluorobenzene	70-130

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Form II
Surrogate Recovery
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Client ID	Lab ID	Dibromofluoromethane	Toluene-d8	4-Bromofluorobenzene
LCS	VS030807LCS03	101	99	98
LCSD	VS030807LCSD03	101	99	98
Blank	VS030807B05	83	106	102
SED-1	0703022-01	90	106	102
SED-2	0703022-02	94	105	102
SED-3	0703022-03	93	105	104

N/A - Not Applicable

Surrogate	QC Limit
2-Bromo-1-chloropropane	70-130
1-Chloro-2-fluorobenzene	70-130
1,4-Dichlorobutane	70-130
Dibromofluoromethane	70-130
Toluene-d8	70-130
4-Bromofluorobenzene	70-130

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Form IV
Method Blank Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **VS030807B05**
Date Analyzed: **03/08/07 17:27**

Client ID	Lab ID	Date/Time Analyzed
LCS	VS030807LCS03	03/08/07 16:24
LCSD	VS030807LCSD03	03/08/07 16:55
SED-1	0703022-01	03/08/07 17:58
SED-2	0703022-02	03/08/07 18:30
SED-3	0703022-03	03/08/07 19:01

N/A - Not Applicable

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Form V
Tune Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **T3030801**
Date Analyzed: **03/08/07 10:05**

Target Mass	Relative To Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result
50	95	15	40	18.4	53973	Pass
75	95	30	60	52	152448	Pass
95	95	100	100	100	293163	Pass
96	95	5	9	6.5	19180	Pass
173	174	0	2	0.3	775	Pass
174	95	50	100	90.3	264789	Pass
175	174	5	9	7.2	18989	Pass
176	174	95	101	98.4	260480	Pass
177	176	5	9	6	15570	Pass

Client ID	Lab ID	Date/Time Analyzed
Initial Calibration	I3030801	03/08/07 10:37
Initial Calibration	I3030802	03/08/07 11:09
Initial Calibration	I3030803	03/08/07 11:40
Initial Calibration	I3030804	03/08/07 12:11
Initial Calibration	I3030805	03/08/07 12:43
Initial Calibration	I3030806	03/08/07 13:14

N/A - Not Applicable

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Form V
Tune Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **T3030802**
Date Analyzed: **03/08/07 15:21**

Target Mass	Relative To Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result
50	95	15	40	18.2	15983	Pass
75	95	30	60	51	44854	Pass
95	95	100	100	100	87918	Pass
96	95	5	9	7.7	6741	Pass
173	174	0	2	0.5	421	Pass
174	95	50	100	88.2	77500	Pass
175	174	5	9	8.1	6264	Pass
176	174	95	101	95.2	73778	Pass
177	176	5	9	8.3	6097	Pass

Client ID	Lab ID	Date/Time Analyzed
CCV	C3030801	03/08/07 15:52
LCS	VS030807LCS03	03/08/07 16:24
LCSD	VS030807LCSD03	03/08/07 16:55
Blank	VS030807B05	03/08/07 17:27
SED-1	0703022-01	03/08/07 17:58
SED-2	0703022-02	03/08/07 18:30
SED-3	0703022-03	03/08/07 19:01

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.** Lab Code: **MA00030**

Project: **Hamilton Sanitary Landfill** ETR: **0703022**

Case: N/A SDG: N/A

Lab ID	Date/Time Analyzed
I3030801	03/08/07 10:37
I3030802	03/08/07 11:09
I3030803	03/08/07 11:40
I3030804	03/08/07 12:11
I3030805	03/08/07 12:43
I3030806	03/08/07 13:14

	Response Factors							
Parameter	**2**	**5**	**20**	**50**	**100**	**200**	**Mean**	**% RSD**
Dichlorodifluoromethane	0.60	0.59	0.58	0.60	0.52	0.47	0.56	9.7
Chloromethane	0.34	0.35	0.32	0.34	0.33	0.32	0.33	3.7
Vinyl chloride	0.38	0.39	0.40	0.39	0.35	0.33	0.37	7.6
Bromomethane	0.36	0.38	0.36	0.29	0.11		0.30	36.6*
Chloroethane	0.22	0.22	0.22	0.21	0.18		0.21	7.1
Trichlorofluoromethane	0.80	0.83	0.82	0.76	0.64	0.56	0.74	14.6
Diethyl ether	0.24	0.29	0.31	0.32	0.32	0.32	0.30	10.2
Acetone		0.24	0.17	0.14	0.13	0.11	0.16	31.9*
1,1-Dichloroethene	0.55	0.56	0.57	0.56	0.53	0.49	0.54	5.2
Carbon disulfide	0.88	0.84	0.85	0.87	0.82	0.77	0.84	5.0
Methylene chloride		0.39	0.36	0.31	0.31	0.29	0.33	12.7
Methyl tert-butyl ether (MTBE)	1.30	1.30	1.36	1.18	1.32	1.32	1.30	4.8
trans-1,2-Dichloroethene	0.53	0.52	0.54	0.49	0.51	0.50	0.52	4.0
Diisopropyl Ether (DIPE)	1.06	1.09	1.09	1.12	1.11	1.12	1.10	2.0
1,1-Dichloroethane	0.70	0.73	0.74	0.77	0.72	0.71	0.73	3.5
Ethyl Tertiary Butyl Ether (ETBE)	1.25	1.18	1.29	1.31	1.32	1.32	1.28	4.2
2-Butanone (MEK)	0.32	0.27	0.24	0.21	0.21	0.18	0.24	22.0*
cis-1,2-Dichloroethene	0.52	0.54	0.57	0.59	0.61	0.57	0.57	5.3
2,2-Dichloropropane	0.75	0.72	0.79	0.76	0.78	0.74	0.76	3.2
Bromochloromethane	0.22	0.24	0.26	0.24	0.24	0.22	0.24	6.0
Chloroform	0.80	0.82	0.86	0.86	0.85	0.82	0.84	3.0
1,1,1-Trichloroethane	0.79	0.78	0.85	0.82	0.82	0.77	0.81	3.7
1,1-Dichloropropene	0.55	0.55	0.57	0.60	0.58	0.54	0.56	3.7
Carbon tetrachloride	0.77	0.71	0.71	0.70	0.69	0.67	0.71	4.8
Tetrahydrofuran	0.20	0.13	0.14	0.12	0.13	0.11	0.14	23.6*
Benzene	1.60	1.59	1.60	1.66	1.59	1.52	1.59	2.9
Tertiary Amyl Methyl Ether (TAME)	1.15	1.09	1.22	1.30	1.32	1.29	1.23	7.7
1,2-Dichloroethane	0.76	0.76	0.79	0.78	0.78	0.75	0.77	1.9
Trichloroethene	0.27	0.26	0.28	0.28	0.29	0.28	0.28	2.9
1,2-Dichloropropane	0.20	0.22	0.24	0.24	0.25	0.25	0.23	8.2
Dibromomethane	0.17	0.17	0.19	0.19	0.20	0.19	0.18	5.6
1,4-Dioxane		0.004	0.003	0.003	0.003	0.002	0.003	21.3*

N/A - Not Applicable

* - Value outside of QC advisory limits.

03/13/07 11:41

Form VI
Initial Calibration Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**

Case: N/A SDG: N/A

Lab ID	Date/Time Analyzed
I3030801	03/08/07 10:37
I3030802	03/08/07 11:09
I3030803	03/08/07 11:40
I3030804	03/08/07 12:11
I3030805	03/08/07 12:43
I3030806	03/08/07 13:14

	Response Factors							
Parameter	**2**	**5**	**20**	**50**	**100**	**200**	**Mean**	**% RSD**
Bromodichloromethane	0.29	0.34	0.38	0.39	0.41	0.41	0.37	13.0
Methyl isobutyl ketone (MIBK)	0.20	0.23	0.28	0.27	0.29	0.26	0.25	13.9
cis-1,3-Dichloropropene	0.29	0.35	0.41	0.45	0.47	0.47	0.41	18.0[a]
Toluene	0.75	0.70	0.70	0.71	0.71	0.69	0.71	3.3
trans-1,3-Dichloropropene	0.30	0.34	0.41	0.44	0.48	0.48	0.41	17.8[a]
1,1,2-Trichloroethane	0.20	0.22	0.22	0.22	0.23	0.22	0.22	5.5
2-Hexanone	0.15	0.17	0.21	0.21	0.22	0.19	0.19	13.4
Tetrachloroethene	0.32	0.33	0.35	0.37	0.36	0.34	0.35	6.0
1,3-Dichloropropane	0.42	0.42	0.48	0.49	0.50	0.48	0.46	7.7
Dibromochloromethane	0.21	0.25	0.30	0.31	0.33	0.34	0.29	17.4[a]
1,2-Dibromoethane	0.23	0.25	0.29	0.29	0.31	0.30	0.28	10.7
Chlorobenzene	0.89	0.88	0.92	0.91	0.92	0.88	0.90	1.9
1,1,1,2-Tetrachloroethane	0.35	0.34	0.38	0.38	0.39	0.38	0.37	5.3
Ethylbenzene	1.11	1.17	1.37	1.42	1.42	1.34	1.30	10.4
p/m-Xylene	0.37	0.42	0.50	0.54	0.54	0.51	0.48	14.2
o-Xylene	0.33	0.37	0.47	0.52	0.53	0.52	0.46	18.8[a]
Styrene	0.53	0.62	0.84	0.89	0.93	0.90	0.79	21.3[a]
Bromoform	0.19	0.20	0.24	0.25	0.27	0.26	0.24	14.3
Isopropylbenzene	0.81	0.96	1.26	1.37	1.40	1.31	1.19	20.5[a]
1,1,2,2-Tetrachloroethane	0.39	0.42	0.43	0.42	0.42	0.37	0.41	6.0
Bromobenzene	0.37	0.37	0.39	0.41	0.43	0.41	0.40	6.4
1,2,3-Trichloropropane	0.37	0.37	0.39	0.37	0.37	0.32	0.37	6.4
n-Propylbenzene	0.99	1.13	1.40	1.51	1.51	1.40	1.32	16.2[a]
2-Chlorotoluene	0.72	0.76	0.89	0.95	0.95	0.90	0.86	11.3
1,3,5-Trimethylbenzene	0.60	0.71	0.94	1.02	1.04	0.99	0.88	21.1[a]
4-Chlorotoluene	0.69	0.76	0.90	0.96	0.96	0.90	0.86	12.9
tert-Butylbenzene	0.61	0.68	0.91	1.02	1.04	0.98	0.87	21.0[a]
1,2,4-Trimethylbenzene	0.59	0.70	0.96	1.04	1.05	1.00	0.89	21.6[a]
sec-Butylbenzene	0.84	0.97	1.34	1.45	1.47	1.36	1.24	21.6[a]
1,3-Dichlorobenzene	0.58	0.59	0.67	0.71	0.69	0.64	0.65	8.0
p-Isopropyltoluene	0.68	0.78	1.09	1.21	1.22	1.13	1.02	22.6[a]
1,4-Dichlorobenzene	0.57	0.57	0.64	0.69	0.69	0.64	0.63	8.6

N/A - Not Applicable
[a] - Value outside of QC advisory limits.

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Form VI
Initial Calibration Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**

Lab ID	Date/Time Analyzed
I3030801	03/08/07 10:37
I3030802	03/08/07 11:09
I3030803	03/08/07 11:40
I3030804	03/08/07 12:11
I3030805	03/08/07 12:43
I3030806	03/08/07 13:14

	Response Factors							
Parameter	**2**	**5**	**20**	**50**	**100**	**200**	**Mean**	**% RSD**
n-Butylbenzene	0.53	0.60	0.85	0.96	0.97	0.89	0.80	23.7[a]
1,2-Dichlorobenzene	0.56	0.56	0.65	0.68	0.68	0.64	0.63	9.0
1,2-Dibromo-3-chloropropane	0.074	0.077	0.086	0.084	0.085	0.073	0.080	7.3
1,2,4-Trichlorobenzene	0.31	0.30	0.35	0.39	0.40	0.37	0.35	11.4
Hexachlorobutadiene	0.19	0.21	0.24	0.26	0.26	0.23	0.23	11.9
Naphthalene	0.90	0.89	1.03	1.14	1.18	1.07	1.03	11.7
1,2,3-Trichlorobenzene	0.33	0.32	0.38	0.41	0.41	0.38	0.37	10.6
2-Bromo-1-chloropropane	0.33	0.35	0.39	0.41	0.42	0.42	0.39	10.1
1-Chloro-2-fluorobenzene	0.78	0.81	0.86	0.88	0.89	0.84	0.84	4.9
1,4-Dichlorobutane	0.53	0.54	0.53	0.54	0.55	0.51	0.53	2.8
Dibromofluoromethane	0.43	0.41	0.42	0.43	0.44	0.42	0.43	1.7
Toluene-d8	1.00	1.05	1.08	1.08	1.10	1.11	1.07	3.7
4-Bromofluorobenzene	0.43	0.45	0.47	0.47	0.49	0.47	0.46	4.2
Average RSD								10.6

N/A - Not Applicable
[a] - Value outside of QC advisory limits.

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Form VII
Calibration Verification
Volatile Organics by 8260

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3030801**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
Dichlorodifluoromethane	0.56	0.59	6.3	30
Chloromethane	0.33	0.34	1.6	30
Vinyl chloride	0.37	0.39	5.8	20
Bromomethane	0.30	0.33	10.2	30
Chloroethane	0.21	0.21	1.7	30
Trichlorofluoromethane	0.74	0.77	5.0	30
Diethyl ether	0.30	0.32	6.2	30
Acetone	0.16	0.13	15.2	30
1,1-Dichloroethene	0.54	0.58	6.7	20
Carbon disulfide	0.84	0.89	6.2	30
Methylene chloride	0.33	0.35	6.3	30
Methyl tert-butyl ether (MTBE)	1.30	1.40	8.2	30
trans-1,2-Dichloroethene	0.52	0.55	7.3	30
Diisopropyl Ether (DIPE)	1.10	1.17	6.3	30
1,1-Dichloroethane	0.73	0.78	7.2	30
Ethyl Tertiary Butyl Ether (ETBE)	1.28	1.38	8.3	30
2-Butanone (MEK)	0.24	0.22	7.5	30
cis-1,2-Dichloroethene	0.57	0.62	10.1	30
2,2-Dichloropropane	0.76	0.84	10.9	30
Bromochloromethane	0.24	0.26	9.7	30
Chloroform	0.84	0.91	9.1	20
1,1,1-Trichloroethane	0.81	0.85	5.2	30
1,1-Dichloropropene	0.56	0.61	8.4	30
Carbon tetrachloride	0.71	0.74	5.0	30
Tetrahydrofuran	0.14	0.12	11.2	30
Benzene	1.59	1.72	8.1	30
Tertiary Amyl Methyl Ether (TAME)	1.23	1.37	11.4	30
1,2-Dichloroethane	0.77	0.81	5.2	30
Trichloroethene	0.28	0.30	9.9	30
1,2-Dichloropropane	0.23	0.26	9.4	20
Dibromomethane	0.18	0.20	8.2	30
1,4-Dioxane	0.003	0.003	0.7	30
Bromodichloromethane	0.37	0.42	13.9	30
Methyl isobutyl ketone (MIBK)	0.25	0.28	10.5	30
cis-1,3-Dichloropropene	0.41	0.47	16.1	30
Toluene	0.71	0.74	3.6	20
trans-1,3-Dichloropropene	0.41	0.47	15.0	30
1,1,2-Trichloroethane	0.22	0.24	9.1	30

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VII
Calibration Verification
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3030801**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
2-Hexanone	0.19	0.22	12.9	30
Tetrachloroethene	0.35	0.38	11.4	30
1,3-Dichloropropane	0.46	0.51	10.6	30
Dibromochloromethane	0.29	0.33	15.5	30
1,2-Dibromoethane	0.28	0.31	10.5	30
Chlorobenzene	0.90	0.98	8.5	30
1,1,1,2-Tetrachloroethane	0.37	0.41	12.5	30
Ethylbenzene	1.30	1.52	16.3	20
p/m-Xylene	0.48	0.56	16.5	30
o-Xylene	0.46	0.55	19.5	30
Styrene	0.79	0.94	20.3	30
Bromoform	0.24	0.27	15.6	30
Isopropylbenzene	1.19	1.47	23.6	30
1,1,2,2-Tetrachloroethane	0.41	0.45	10.6	30
Bromobenzene	0.40	0.44	12.1	30
1,2,3-Trichloropropane	0.37	0.40	8.8	30
n-Propylbenzene	1.32	1.59	20.4	30
2-Chlorotoluene	0.86	0.98	14.1	30
1,3,5-Trimethylbenzene	0.88	1.08	22.6	30
4-Chlorotoluene	0.86	0.98	14.1	30
tert-Butylbenzene	0.87	1.08	23.6	30
1,2,4-Trimethylbenzene	0.89	1.08	21.2	30
sec-Butylbenzene	1.24	1.55	25.2	30
1,3-Dichlorobenzene	0.65	0.72	10.7	30
p-Isopropyltoluene	1.02	1.28	25.3	30
1,4-Dichlorobenzene	0.63	0.69	9.7	30
n-Butylbenzene	0.80	0.99	24.3	30
1,2-Dichlorobenzene	0.63	0.70	11.1	30
1,2-Dibromo-3-chloropropane	0.080	0.087	9.2	30
1,2,4-Trichlorobenzene	0.35	0.36	1.9	30
Hexachlorobutadiene	0.23	0.27	14.5	30
Naphthalene	1.03	1.12	7.9	30
1,2,3-Trichlorobenzene	0.37	0.39	5.8	30
2-Bromo-1-chloropropane	0.39	0.43	11.8	30
1-Chloro-2-fluorobenzene	0.84	0.93	10.7	30
1,4-Dichlorobutane	0.53	0.57	7.8	30
Dibromofluoromethane	0.43	0.43	1.2	30
Toluene-d8	1.07	1.07	0.4	30

N/A - Not Applicable

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Form VII
Calibration Verification
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3030801**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
4-Bromofluorobenzene	0.46	0.48	3.6	30
Average % D			10.8	

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VIII
Internal Standard Summary
Volatile Organics by 8260

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3030801**

		Pentafluorobenzene		Fluorobenzene		Chlorobenzene-D5	
		Area	RT	Area	RT	Area	RT
Standard:		1003622	6.38	1648933	7.18	1488363	11.56
Upper Limit:		2007244	6.88	3297866	7.68	2976726	12.06
Lower Limit:		501811	5.88	824466	6.68	744182	11.06
Client ID	**Lab ID**						
LCS	VS030807LCS03	1034944	6.38	1661134	7.18	1469214	11.56
LCSD	VS030807LCSD03	1027747	6.39	1657188	7.18	1458777	11.56
Blank	VS030807B05	816897	6.38	1264936	7.17	1328474	11.57
SED-1	0703022-01	819533	6.38	1264976	7.17	1290128	11.56
SED-2	0703022-02	800696	6.38	1250600	7.17	1275838	11.56
SED-3	0703022-03	780896	6.38	1209543	7.17	1245929	11.56

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

03/13/07 11:43

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SEMIVOLATILE ORGANICS

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-1**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01**
Associated Blank: **SS030907B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/13/07	74.4	5.39	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	250	U	2,6-Dinitrotoluene	250	U
Phenol	250	U	Acenaphthene	250	U
bis(2-Chloroethyl)ether	250	U	2,4-Dinitrophenol	250	U
2-Chlorophenol	250	U	4-Nitrophenol	250	U
1,3-Dichlorobenzene	250	U	Dibenzofuran	250	U
1,4-Dichlorobenzene	250	U	2,4-Dinitrotoluene	250	U
1,2-Dichlorobenzene	250	U	Diethylphthalate	250	U
2-Methylphenol	250	U	Azobenzene	250	U
bis(2-Chloroisopropyl)ether	250	U	Fluorene	250	U
Acetophenone	250	U	4-Bromophenyl-phenylether	250	U
4-Methylphenol[1]	250	U	Hexachlorobenzene	250	U
Hexachloroethane	250	U	Pentachlorophenol	1000	U
Nitrobenzene	250	U	Phenanthrene	250	U
Isophorone	250	U	Anthracene	250	U
2-Nitrophenol	250	U	Di-n-butylphthalate	250	U
2,4-Dimethylphenol	250	U	Fluoranthene	250	U
bis(2-Chloroethoxy)methane	250	U	Pyrene	250	U
2,4-Dichlorophenol	250	U	Butylbenzylphthalate	250	U
1,2,4-Trichlorobenzene	250	U	3,3'-Dichlorobenzidine	250	U
Naphthalene	250	U	Benz[a]anthracene	250	U
4-Chloroaniline	250	U	Chrysene	250	U
Hexachlorobutadiene	250	U	bis(2-Ethylhexyl)phthalate	250	U
2-Methylnaphthalene	250	U	Di-n-octylphthalate	250	U
2,4,6-Trichlorophenol	250	U	Benzo[b]fluoranthene	250	U
2,4,5-Trichlorophenol	250	U	Benzo[k]fluoranthene	250	U
2-Chloronaphthalene	250	U	Benzo[a]pyrene	250	U
Dimethylphthalate	250	U	Indeno[1,2,3-cd]pyrene	250	U
Acenaphthylene	250	U	Dibenz[a,h]anthracene	250	U
			Benzo[g,h,i]perylene	250	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	90	30-130
Phenol-d5	91	30-130
Nitrobenzene-d5	91	30-130
2-Fluorophenol	93	30-130
2,4,6-Tribromophenol	93	30-130
Terphenyl-d14	96	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 14:17

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-1**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01X**
Associated Blank: **SS031607B06**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/16/07	03/23/07	74.4	5.83	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	230	U	2,6-Dinitrotoluene	230	U
Phenol	230	U	Acenaphthene	230	U
bis(2-Chloroethyl)ether	230	U	2,4-Dinitrophenol	230	U
2-Chlorophenol	230	U	4-Nitrophenol	230	U
1,3-Dichlorobenzene	230	U	Dibenzofuran	230	U
1,4-Dichlorobenzene	230	U	2,4-Dinitrotoluene	230	U
1,2-Dichlorobenzene	230	U	Diethylphthalate	230	U
2-Methylphenol	230	U	Azobenzene	230	U
bis(2-Chloroisopropyl)ether	230	U	Fluorene	230	U
Acetophenone	230	U	4-Bromophenyl-phenylether	230	U
4-Methylphenol[1]	230	U	Hexachlorobenzene	230	U
Hexachloroethane	230	U	Pentachlorophenol	920	U
Nitrobenzene	230	U	Phenanthrene	230	U
Isophorone	230	U	Anthracene	230	U
2-Nitrophenol	230	U	Di-n-butylphthalate	230	U
2,4-Dimethylphenol	230	U	Fluoranthene	230	U
bis(2-Chloroethoxy)methane	230	U	Pyrene	230	U
2,4-Dichlorophenol	230	U	Butylbenzylphthalate	230	U
1,2,4-Trichlorobenzene	230	U	3,3'-Dichlorobenzidine	230	U
Naphthalene	230	U	Benz[a]anthracene	230	U
4-Chloroaniline	230	U	Chrysene	230	U
Hexachlorobutadiene	230	U	bis(2-Ethylhexyl)phthalate	230	U
2-Methylnaphthalene	230	U	Di-n-octylphthalate	230	U
2,4,6-Trichlorophenol	230	U	Benzo[b]fluoranthene	230	U
2,4,5-Trichlorophenol	230	U	Benzo[k]fluoranthene	230	U
2-Chloronaphthalene	230	U	Benzo[a]pyrene	230	U
Dimethylphthalate	230	U	Indeno[1,2,3-cd]pyrene	230	U
Acenaphthylene	230	U	Dibenz[a,h]anthracene	230	U
			Benzo[g,h,i]perylene	230	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	76	30-130
Phenol-d5	78	30-130
Nitrobenzene-d5	77	30-130
2-Fluorophenol	84	30-130
2,4,6-Tribromophenol	80	30-130
Terphenyl-d14	77	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/23/07 16:03

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-2**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02**
Associated Blank: **SS030907B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/13/07	56.8	5.27	2	1	SEO

Parameter	Result	
Aniline	330	U
Phenol	330	U
bis(2-Chloroethyl)ether	330	U
2-Chlorophenol	330	U
1,3-Dichlorobenzene	330	U
1,4-Dichlorobenzene	330	U
1,2-Dichlorobenzene	330	U
2-Methylphenol	330	U
bis(2-Chloroisopropyl)ether	330	U
Acetophenone	330	U
4-Methylphenol[1]	330	U
Hexachloroethane	330	U
Nitrobenzene	330	U
Isophorone	330	U
2-Nitrophenol	330	U
2,4-Dimethylphenol	330	U
bis(2-Chloroethoxy)methane	330	U
2,4-Dichlorophenol	330	U
1,2,4-Trichlorobenzene	330	U
Naphthalene	330	U
4-Chloroaniline	330	U
Hexachlorobutadiene	330	U
2-Methylnaphthalene	330	U
2,4,6-Trichlorophenol	330	U
2,4,5-Trichlorophenol	330	U
2-Chloronaphthalene	330	U
Dimethylphthalate	330	U
Acenaphthylene	330	U

Parameter	Result	
2,6-Dinitrotoluene	330	U
Acenaphthene	330	U
2,4-Dinitrophenol	330	U
4-Nitrophenol	330	U
Dibenzofuran	330	U
2,4-Dinitrotoluene	330	U
Diethylphthalate	330	U
Azobenzene	330	U
Fluorene	330	U
4-Bromophenyl-phenylether	330	U
Hexachlorobenzene	330	U
Pentachlorophenol	1300	U
Phenanthrene	330	U
Anthracene	330	U
Di-n-butylphthalate	330	U
Fluoranthene	330	U
Pyrene	330	U
Butylbenzylphthalate	330	U
3,3'-Dichlorobenzidine	330	U
Benz[a]anthracene	330	U
Chrysene	330	U
bis(2-Ethylhexyl)phthalate	330	U
Di-n-octylphthalate	330	U
Benzo[b]fluoranthene	330	U
Benzo[k]fluoranthene	330	U
Benzo[a]pyrene	330	U
Indeno[1,2,3-cd]pyrene	330	U
Dibenz[a,h]anthracene	330	U
Benzo[g,h,i]perylene	330	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	83	30-130
Phenol-d5	82	30-130
Nitrobenzene-d5	72	30-130
2-Fluorophenol	82	30-130
2,4,6-Tribromophenol	80	30-130
Terphenyl-d14	85	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 14:18

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-2**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02X**
Associated Blank: **SS031607B06**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/16/07	03/23/07	56.8	5.43	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	320	U	2,6-Dinitrotoluene	320	U
Phenol	320	U	Acenaphthene	320	U
bis(2-Chloroethyl)ether	320	U	2,4-Dinitrophenol	320	U
2-Chlorophenol	320	U	4-Nitrophenol	320	U
1,3-Dichlorobenzene	320	U	Dibenzofuran	320	U
1,4-Dichlorobenzene	320	U	2,4-Dinitrotoluene	320	U
1,2-Dichlorobenzene	320	U	Diethylphthalate	320	U
2-Methylphenol	320	U	Azobenzene	320	U
bis(2-Chloroisopropyl)ether	320	U	Fluorene	320	U
Acetophenone	320	U	4-Bromophenyl-phenylether	320	U
4-Methylphenol[1]	320	U	Hexachlorobenzene	320	U
Hexachloroethane	320	U	Pentachlorophenol	1300	U
Nitrobenzene	320	U	Phenanthrene	320	U
Isophorone	320	U	Anthracene	320	U
2-Nitrophenol	320	U	Di-n-butylphthalate	320	U
2,4-Dimethylphenol	320	U	Fluoranthene	320	U
bis(2-Chloroethoxy)methane	320	U	Pyrene	320	U
2,4-Dichlorophenol	320	U	Butylbenzylphthalate	320	U
1,2,4-Trichlorobenzene	320	U	3,3'-Dichlorobenzidine	320	U
Naphthalene	320	U	Benz[a]anthracene	320	U
4-Chloroaniline	320	U	Chrysene	320	U
Hexachlorobutadiene	320	U	bis(2-Ethylhexyl)phthalate	320	U
2-Methylnaphthalene	320	U	Di-n-octylphthalate	320	U
2,4,6-Trichlorophenol	320	U	Benzo[b]fluoranthene	320	U
2,4,5-Trichlorophenol	320	U	Benzo[k]fluoranthene	320	U
2-Chloronaphthalene	320	U	Benzo[a]pyrene	320	U
Dimethylphthalate	320	U	Indeno[1,2,3-cd]pyrene	320	U
Acenaphthylene	320	U	Dibenz[a,h]anthracene	320	U
			Benzo[g,h,i]perylene	320	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	83	30-130
Phenol-d5	84	30-130
Nitrobenzene-d5	63	30-130
2-Fluorophenol	93	30-130
2,4,6-Tribromophenol	81	30-130
Terphenyl-d14	84	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/23/07 16:03

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-3**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03**
Associated Blank: **SS030907B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/13/07	78.8	5.44	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	230	U	2,6-Dinitrotoluene	230	U
Phenol	230	U	Acenaphthene	230	U
bis(2-Chloroethyl)ether	230	U	2,4-Dinitrophenol	230	U
2-Chlorophenol	230	U	4-Nitrophenol	230	U
1,3-Dichlorobenzene	230	U	Dibenzofuran	230	U
1,4-Dichlorobenzene	230	U	2,4-Dinitrotoluene	230	U
1,2-Dichlorobenzene	230	U	Diethylphthalate	230	U
2-Methylphenol	230	U	Azobenzene	230	U
bis(2-Chloroisopropyl)ether	230	U	Fluorene	230	U
Acetophenone	230	U	4-Bromophenyl-phenylether	230	U
4-Methylphenol[1]	230	U	Hexachlorobenzene	230	U
Hexachloroethane	230	U	Pentachlorophenol	930	U
Nitrobenzene	230	U	Phenanthrene	230	U
Isophorone	230	U	Anthracene	230	U
2-Nitrophenol	230	U	Di-n-butylphthalate	230	U
2,4-Dimethylphenol	230	U	Fluoranthene	230	U
bis(2-Chloroethoxy)methane	230	U	Pyrene	230	U
2,4-Dichlorophenol	230	U	Butylbenzylphthalate	230	U
1,2,4-Trichlorobenzene	230	U	3,3'-Dichlorobenzidine	230	U
Naphthalene	230	U	Benz[a]anthracene	230	U
4-Chloroaniline	230	U	Chrysene	230	U
Hexachlorobutadiene	230	U	bis(2-Ethylhexyl)phthalate	230	U
2-Methylnaphthalene	230	U	Di-n-octylphthalate	230	U
2,4,6-Trichlorophenol	230	U	Benzo[b]fluoranthene	230	U
2,4,5-Trichlorophenol	230	U	Benzo[k]fluoranthene	230	U
2-Chloronaphthalene	230	U	Benzo[a]pyrene	230	U
Dimethylphthalate	230	U	Indeno[1,2,3-cd]pyrene	230	U
Acenaphthylene	230	U	Dibenz[a,h]anthracene	230	U
			Benzo[g,h,i]perylene	230	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	68	30-130
Phenol-d5	71	30-130
Nitrobenzene-d5	67	30-130
2-Fluorophenol	69	30-130
2,4,6-Tribromophenol	84	30-130
Terphenyl-d14	84	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 14 18

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-3**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03X**
Associated Blank: **SS031607B06**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/16/07	03/23/07	78.8	5.28	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	240	U	2,6-Dinitrotoluene	240	U
Phenol	240	U	Acenaphthene	240	U
bis(2-Chloroethyl)ether	240	U	2,4-Dinitrophenol	240	U
2-Chlorophenol	240	U	4-Nitrophenol	240	U
1,3-Dichlorobenzene	240	U	Dibenzofuran	240	U
1,4-Dichlorobenzene	240	U	2,4-Dinitrotoluene	240	U
1,2-Dichlorobenzene	240	U	Diethylphthalate	240	U
2-Methylphenol	240	U	Azobenzene	240	U
bis(2-Chloroisopropyl)ether	240	U	Fluorene	240	U
Acetophenone	240	U	4-Bromophenyl-phenylether	240	U
4-Methylphenol[1]	240	U	Hexachlorobenzene	240	U
Hexachloroethane	240	U	Pentachlorophenol	960	U
Nitrobenzene	240	U	Phenanthrene	240	U
Isophorone	240	U	Anthracene	240	U
2-Nitrophenol	240	U	Di-n-butylphthalate	240	U
2,4-Dimethylphenol	240	U	Fluoranthene	240	U
bis(2-Chloroethoxy)methane	240	U	Pyrene	240	U
2,4-Dichlorophenol	240	U	Butylbenzylphthalate	240	U
1,2,4-Trichlorobenzene	240	U	3,3'-Dichlorobenzidine	240	U
Naphthalene	240	U	Benz[a]anthracene	240	U
4-Chloroaniline	240	U	Chrysene	240	U
Hexachlorobutadiene	240	U	bis(2-Ethylhexyl)phthalate	240	U
2-Methylnaphthalene	240	U	Di-n-octylphthalate	240	U
2,4,6-Trichlorophenol	240	U	Benzo[b]fluoranthene	240	U
2,4,5-Trichlorophenol	240	U	Benzo[k]fluoranthene	240	U
2-Chloronaphthalene	240	U	Benzo[a]pyrene	240	U
Dimethylphthalate	240	U	Indeno[1,2,3-cd]pyrene	240	U
Acenaphthylene	240	U	Dibenz[a,h]anthracene	240	U
			Benzo[g,h,i]perylene	240	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	65	30-130
Phenol-d5	67	30-130
Nitrobenzene-d5	64	30-130
2-Fluorophenol	71	30-130
2,4,6-Tribromophenol	61	30-130
Terphenyl-d14	67	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/23/07 16:03

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Blank**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **SS030907B03**
Associated Blank: N/A
Concentration Units: µg/Kg

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/09/07	03/13/07	100	5.00	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	200	U	2,6-Dinitrotoluene	200	U
Phenol	200	U	Acenaphthene	200	U
bis(2-Chloroethyl)ether	200	U	2,4-Dinitrophenol	200	U
2-Chlorophenol	200	U	4-Nitrophenol	200	U
1,3-Dichlorobenzene	200	U	Dibenzofuran	200	U
1,4-Dichlorobenzene	200	U	2,4-Dinitrotoluene	200	U
1,2-Dichlorobenzene	200	U	Diethylphthalate	200	U
2-Methylphenol	200	U	Azobenzene	200	U
bis(2-Chloroisopropyl)ether	200	U	Fluorene	200	U
Acetophenone	200	U	4-Bromophenyl-phenylether	200	U
4-Methylphenol[1]	200	U	Hexachlorobenzene	200	U
Hexachloroethane	200	U	Pentachlorophenol	800	U
Nitrobenzene	200	U	Phenanthrene	200	U
Isophorone	200	U	Anthracene	200	U
2-Nitrophenol	200	U	Di-n-butylphthalate	200	U
2,4-Dimethylphenol	200	U	Fluoranthene	200	U
bis(2-Chloroethoxy)methane	200	U	Pyrene	200	U
2,4-Dichlorophenol	200	U	Butylbenzylphthalate	200	U
1,2,4-Trichlorobenzene	200	U	3,3'-Dichlorobenzidine	200	U
Naphthalene	200	U	Benz[a]anthracene	200	U
4-Chloroaniline	200	U	Chrysene	200	U
Hexachlorobutadiene	200	U	bis(2-Ethylhexyl)phthalate	200	U
2-Methylnaphthalene	200	U	Di-n-octylphthalate	200	U
2,4,6-Trichlorophenol	200	U	Benzo[b]fluoranthene	200	U
2,4,5-Trichlorophenol	200	U	Benzo[k]fluoranthene	200	U
2-Chloronaphthalene	200	U	Benzo[a]pyrene	200	U
Dimethylphthalate	200	U	Indeno[1,2,3-cd]pyrene	200	U
Acenaphthylene	200	U	Dibenz[a,h]anthracene	200	U
			Benzo[g,h,i]perylene	200	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	77	30-130
Phenol-d5	81	30-130
Nitrobenzene-d5	81	30-130
2-Fluorophenol	82	30-130
2,4,6-Tribromophenol	64	30-130
Terphenyl-d14	85	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/13/07 14:17

Form I
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Blank**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **SS031607B06**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/16/07	03/23/07	100	5.00	2	1	SEO

Parameter	Result		Parameter	Result	
Aniline	200	U	2,6-Dinitrotoluene	200	U
Phenol	200	U	Acenaphthene	200	U
bis(2-Chloroethyl)ether	200	U	2,4-Dinitrophenol	200	U
2-Chlorophenol	200	U	4-Nitrophenol	200	U
1,3-Dichlorobenzene	200	U	Dibenzofuran	200	U
1,4-Dichlorobenzene	200	U	2,4-Dinitrotoluene	200	U
1,2-Dichlorobenzene	200	U	Diethylphthalate	200	U
2-Methylphenol	200	U	Azobenzene	200	U
bis(2-Chloroisopropyl)ether	200	U	Fluorene	200	U
Acetophenone	200	U	4-Bromophenyl-phenylether	200	U
4-Methylphenol[1]	200	U	Hexachlorobenzene	200	U
Hexachloroethane	200	U	Pentachlorophenol	800	U
Nitrobenzene	200	U	Phenanthrene	200	U
Isophorone	200	U	Anthracene	200	U
2-Nitrophenol	200	U	Di-n-butylphthalate	200	U
2,4-Dimethylphenol	200	U	Fluoranthene	200	U
bis(2-Chloroethoxy)methane	200	U	Pyrene	200	U
2,4-Dichlorophenol	200	U	Butylbenzylphthalate	200	U
1,2,4-Trichlorobenzene	200	U	3,3'-Dichlorobenzidine	200	U
Naphthalene	200	U	Benz[a]anthracene	200	U
4-Chloroaniline	200	U	Chrysene	200	U
Hexachlorobutadiene	200	U	bis(2-Ethylhexyl)phthalate	200	U
2-Methylnaphthalene	200	U	Di-n-octylphthalate	200	U
2,4,6-Trichlorophenol	200	U	Benzo[b]fluoranthene	200	U
2,4,5-Trichlorophenol	200	U	Benzo[k]fluoranthene	200	U
2-Chloronaphthalene	200	U	Benzo[a]pyrene	200	U
Dimethylphthalate	200	U	Indeno[1,2,3-cd]pyrene	200	U
Acenaphthylene	200	U	Dibenz[a,h]anthracene	200	U
			Benzo[g,h,i]perylene	200	U

[1] = 3-Methylphenol and 4-Methylphenol can not be differentiated by this method and are reported as 4-Methylphenol.

Surrogate	% Recovery	Acceptance Range (%)
2-Fluorobiphenyl	72	30-130
Phenol-d5	80	30-130
Nitrobenzene-d5	71	30-130
2-Fluorophenol	82	30-130
2,4,6-Tribromophenol	63	30-130
Terphenyl-d14	77	30-130

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form III
Spike Recovery Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: MA00030
ETR: 0703022
Lab ID: See Below
Associated Blank: SS030907B03
Concentration Units: µg/Kg

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/09/07	100	SEO

Lab ID:	SS030907B03	SS030907LCS03	SS030907LCSD03

Parameter	Blank Conc.		LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Aniline	200	U	1200	39[a]	870	29[a]	29	30	40-140
Phenol	200	U	2400	79	2500	83	5	30	30-130
bis(2-Chloroethyl)ether	200	U	2300	78	2400	81	4	30	40-140
2-Chlorophenol	200	U	2500	83	2600	87	4	30	30-130
1,3-Dichlorobenzene	200	U	2300	76	2300	77	2	30	40-140
1,4-Dichlorobenzene	200	U	2400	79	2400	81	3	30	40-140
1,2-Dichlorobenzene	200	U	2400	79	2400	82	4	30	40-140
2-Methylphenol	200	U	2300	78	2500	82	5	30	30-130
bis(2-Chloroisopropyl)ether	200	U	2400	81	2600	85	4	30	40-140
Acetophenone	200	U	2600	86	2700	91	6	30	40-140
4-Methylphenol	200	U	2300	76	2400	82	7	30	30-130
Hexachloroethane	200	U	2300	77	2300	77	1	30	40-140
Nitrobenzene	200	U	2300	78	2500	82	6	30	40-140
Isophorone	200	U	2500	83	2700	90	8	30	40-140
2-Nitrophenol	200	U	2300	77	2500	85	9	30	30-130
2,4-Dimethylphenol	200	U	2100	69	2300	77	12	30	30-130
bis(2-Chloroethoxy)methane	200	U	2400	80	2600	86	7	30	40-140
2,4-Dichlorophenol	200	U	2400	79	2600	86	8	30	30-130
1,2,4-Trichlorobenzene	200	U	2400	78	2500	83	5	30	40-140
Naphthalene	200	U	2400	81	2600	86	6	30	40-140
4-Chloroaniline	200	U	1300	43	1300	45	3	30	40-140
Hexachlorobutadiene	200	U	2500	82	2600	86	4	30	40-140
2-Methylnaphthalene	200	U	2200	75	2400	80	7	30	40-140
2,4,6-Trichlorophenol	200	U	2300	78	2600	86	10	30	30-130
2,4,5-Trichlorophenol	200	U	2200	74	2500	84	13	30	30-130
2-Chloronaphthalene	200	U	2400	80	2600	86	7	30	40-140
Dimethylphthalate	200	U	2400	80	2600	87	8	30	40-140
Acenaphthylene	200	U	2300	77	2500	84	9	30	40-140
2,6-Dinitrotoluene	200	U	2500	82	2700	90	10	30	40-140
Acenaphthene	200	U	2400	78	2600	88	11	30	40-140
2,4-Dinitrophenol	200	U	200 U	0[a]	200 U	0[a]	N/A	30	30-130
4-Nitrophenol	200	U	2500	83	2100	71	15	30	30-130
Dibenzofuran	200	U	2300	76	2500	84	10	30	40-140

03/13/07 11:21

Form III
Spike Recovery Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **SS030907B03**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/09/07	100	SEO

Lab ID:	SS030907B03		SS030907LCS03		SS030907LCSD03				
Parameter	**Blank Conc.**		**LCS Conc.**	**LCS % Recovery**	**LCSD Conc.**	**LCSD % Recovery**	**% RPD**	**RPD Limit**	**% Recovery Limits**
2,4-Dinitrotoluene	200	U	2600	87	2800	94	8	30	40-140
Diethylphthalate	200	U	2500	83	2700	91	9	30	40-140
Azobenzene	200	U	2200	72	2400	82	12	30	40-140
Fluorene	200	U	2500	83	2700	91	9	30	40-140
4-Bromophenyl-phenylether	200	U	2100	69	2300	76	10	30	40-140
Hexachlorobenzene	200	U	2400	81	2700	89	9	30	40-140
Pentachlorophenol	800	U	1400	47	1500	51	8	30	30-130
Phenanthrene	200	U	2500	85	2800	92	8	30	40-140
Anthracene	200	U	2500	84	2700	91	8	30	40-140
Di-n-butylphthalate	200	U	2700	90	2800	92	2	30	40-140
Fluoranthene	200	U	2800	92	2800	95	3	30	40-140
Pyrene	200	U	2700	91	2800	92	2	30	40-140
Butylbenzylphthalate	200	U	2800	93	2900	95	2	30	40-140
3,3'-Dichlorobenzidine	200	U	1500	50	1500	50	0	30	40-140
Benz[a]anthracene	200	U	2800	92	2800	94	2	30	40-140
Chrysene	200	U	2600	87	2700	90	3	30	40-140
bis(2-Ethylhexyl)phthalate	200	U	2800	93	2900	96	4	30	40-140
Di-n-octylphthalate	200	U	2700	89	2800	92	3	30	40-140
Benzo[b]fluoranthene	200	U	2600	88	2800	92	5	30	40-140
Benzo[k]fluoranthene	200	U	2800	93	2900	95	3	30	40-140
Benzo[a]pyrene	200	U	2700	91	2800	94	4	30	40-140
Indeno[1,2,3-cd]pyrene	200	U	2700	90	2800	94	4	30	40-140
Dibenz[a,h]anthracene	200	U	2700	90	2800	94	4	30	40-140
Benzo[g,h,i]perylene	200	U	2700	90	2800	95	5	30	40-140

Surrogate	% Recovery		Acceptance Range (%)
2-Fluorobiphenyl	85	90	30-130
Phenol-d5	84	87	30-130
Nitrobenzene-d5	84	88	30-130
2-Fluorophenol	86	89	30-130
2,4,6-Tribromophenol	81	86	30-130
Terphenyl-d14	92	94	30-130

N/A - Not Applicable
* - Value outside of QC Limits.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which inqludes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

03/13/07 11:21

Form III
Spike Recovery Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **SS031607B06**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/16/07	100	SEO

Lab ID:	SS031607B06		SS031607LCS04		SS031607LCSD04				
Parameter	**Blank Conc.**		**LCS Conc.**	**LCS % Recovery**	**LCSD Conc.**	**LCSD % Recovery**	**% RPD**	**RPD Limit**	**% Recovery Limits**
Aniline	200	U	450	15[a]	560	19[a]	22	30	40-140
Phenol	200	U	1600	52	2200	73	35[a]	30	30-130
bis(2-Chloroethyl)ether	200	U	1300	43	1900	62	36[a]	30	40-140
2-Chlorophenol	200	U	1600	53	2200	75	35[a]	30	30-130
1,3-Dichlorobenzene	200	U	1300	44	1800	60	32[a]	30	40-140
1,4-Dichlorobenzene	200	U	1400	45	1900	64	36[a]	30	40-140
1,2-Dichlorobenzene	200	U	1400	45	2000	65	36[a]	30	40-140
2-Methylphenol	200	U	1600	53	2000	66	22	30	30-130
bis(2-Chloroisopropyl)ether	200	U	1400	48	2000	67	34[a]	30	40-140
Acetophenone	200	U	1600	53	2200	72	31[a]	30	40-140
4-Methylphenol	200	U	1400	48	2000	65	31[a]	30	30-130
Hexachloroethane	200	U	1200	41	1800	59	37[a]	30	40-140
Nitrobenzene	200	U	1300	44	1900	64	36[a]	30	40-140
Isophorone	200	U	1400	45	1900	63	32[a]	30	40-140
2-Nitrophenol	200	U	1400	46	2000	66	36[a]	30	30-130
2,4-Dimethylphenol	200	U	1300	43	1800	59	31[a]	30	30-130
bis(2-Chloroethoxy)methane	200	U	1400	46	1900	64	32[a]	30	40-140
2,4-Dichlorophenol	200	U	1400	46	1900	63	31[a]	30	30-130
1,2,4-Trichlorobenzene	200	U	1300	43	1900	63	37[a]	30	40-140
Naphthalene	200	U	1400	46	2000	67	36[a]	30	40-140
4-Chloroaniline	200	U	540	18[a]	830	28[a]	42[a]	30	40-140
Hexachlorobutadiene	200	U	1300	44	2000	66	39[a]	30	40-140
2-Methylnaphthalene	200	U	1300	42	1700	57	29	30	40-140
2,4,6-Trichlorophenol	200	U	1400	48	2100	71	40[a]	30	30-130
2,4,5-Trichlorophenol	200	U	1300	44	1900	65	39[a]	30	30-130
2-Chloronaphthalene	200	U	1400	48	2000	67	33[a]	30	40-140
Dimethylphthalate	200	U	1400	46	2000	67	38[a]	30	40-140
Acenaphthylene	200	U	1300	44	1900	64	38[a]	30	40-140
2,6-Dinitrotoluene	200	U	1400	45	2000	67	39[a]	30	40-140
Acenaphthene	200	U	1400	45	2000	65	36[a]	30	40-140
2,4-Dinitrophenol	200	U	480	16[a]	1100	36	77[a]	30	30-130
4-Nitrophenol	200	U	1200	41	1800	59	36[a]	30	30-130
Dibenzofuran	200	U	1300	44	1900	64	37[a]	30	40-140

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Form III
Spike Recovery Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **SS031607B06**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/16/07	100	SEO

Lab ID:	SS031607B06		SS031607LCS04		SS031607LCSD04				
Parameter	**Blank Conc.**		**LCS Conc.**	**LCS % Recovery**	**LCSD Conc.**	**LCSD % Recovery**	**% RPD**	**RPD Limit**	**% Recovery Limits**
2,4-Dinitrotoluene	200	U	1400	47	2200	73	44[a]	30	40-140
Diethylphthalate	200	U	1400	48	2100	71	39[a]	30	40-140
Azobenzene	200	U	1200	41	1800	61	39[a]	30	40-140
Fluorene	200	U	1400	46	2100	70	41[a]	30	40-140
4-Bromophenyl-phenylether	200	U	1200	39[a]	1700	57	38[a]	30	40-140
Hexachlorobenzene	200	U	1300	44	1900	65	37[a]	30	40-140
Pentachlorophenol	800	U	930	31	1600	53	53[a]	30	30-130
Phenanthrene	200	U	1400	47	2100	69	37[a]	30	40-140
Anthracene	200	U	1400	46	2000	67	38[a]	30	40-140
Di-n-butylphthalate	200	U	1500	49	2200	72	38[a]	30	40-140
Fluoranthene	200	U	1500	49	2200	73	39[a]	30	40-140
Pyrene	200	U	1400	48	2200	72	40[a]	30	40-140
Butylbenzylphthalate	200	U	1300	43	2000	67	43[a]	30	40-140
3,3'-Dichlorobenzidine	200	U	310	10[a]	340	11[a]	10	30	40-140
Benz[a]anthracene	200	U	1500	49	2100	71	37[a]	30	40-140
Chrysene	200	U	1400	47	2100	69	37[a]	30	40-140
bis(2-Ethylhexyl)phthalate	200	U	2800	94	2000	67	34[a]	30	40-140
Di-n-octylphthalate	200	U	1300	43	1900	65	40[a]	30	40-140
Benzo[b]fluoranthene	200	U	1400	47	2100	71	40[a]	30	40-140
Benzo[k]fluoranthene	200	U	1600	53	2200	75	34[a]	30	40-140
Benzo[a]pyrene	200	U	1500	50	2100	71	35[a]	30	40-140
Indeno[1,2,3-cd]pyrene	200	U	1400	48	2100	70	38[a]	30	40-140
Dibenz[a,h]anthracene	200	U	1400	47	2100	70	39[a]	30	40-140
Benzo[g,h,i]perylene	200	U	1400	48	2100	71	38[a]	30	40-140

Surrogate	% Recovery		Acceptance Range (%)
2-Fluorobiphenyl	50	71	30-130
Phenol-d5	55	73	30-130
Nitrobenzene-d5	47	68	30-130
2-Fluorophenol	55	76	30-130
2,4,6-Tribromophenol	45	69	30-130
Terphenyl-d14	50	75	30-130

N/A - Not Applicable
[a] - Value outside of QC Limits.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

03/23/07 13:57

Supporting Quality Control Results

Form II
Surrogate Recovery
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Client ID	Lab ID	2-Fluorobiphenyl	Phenol-d5	Nitrobenzene-d5
Blank	SS030907B03	77	81	81
LCS	SS030907LCS03	85	84	84
LCSD	SS030907LCSD03	90	87	88
SED-1	0703022-01	90	91	91
SED-2	0703022-02	83	82	72
SED-3	0703022-03	68	71	67
Blank	SS031607B06	72	80	71
LCS	SS031607LCS04	50	55	47
LCSD	SS031607LCSD04	71	73	68
SED-1	0703022-01X	76	78	77
SED-2	0703022-02X	83	84	63
SED-3	0703022-03X	65	67	64

N/A - Not Applicable

Surrogate	QC Limit
2-Fluorobiphenyl	30-130
Phenol-d5	30-130
Nitrobenzene-d5	30-130
2-Fluorophenol	30-130
2,4,6-Tribromophenol	30-130
Terphenyl-d14	30-130

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Form II
Surrogate Recovery
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Client ID	Lab ID	2-Fluorophenol	2,4,6-Tribromophenol	Terphenyl-d14
Blank	SS030907B03	82	64	85
LCS	SS030907LCS03	86	81	92
LCSD	SS030907LCSD03	89	86	94
SED-1	0703022-01	93	93	96
SED-2	0703022-02	82	80	85
SED-3	0703022-03	69	84	84
Blank	SS031607B06	82	63	77
LCS	SS031607LCS04	55	45	50
LCSD	SS031607LCSD04	76	69	75
SED-1	0703022-01X	84	80	77
SED-2	0703022-02X	93	81	84
SED-3	0703022-03X	71	61	67

N/A - Not Applicable

Surrogate	QC Limit
2-Fluorobiphenyl	30-130
Phenol-d5	30-130
Nitrobenzene-d5	30-130
2-Fluorophenol	30-130
2,4,6-Tribromophenol	30-130
Terphenyl-d14	30-130

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Form IV
Method Blank Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **SS030907B03**
Date Analyzed: **03/13/07 09:36**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS030907LCS03	03/13/07 10:13
LCSD	SS030907LCSD03	03/13/07 10:49
SED-1	0703022-01	03/13/07 11:26
SED-2	0703022-02	03/13/07 12:02
SED-3	0703022-03	03/13/07 12:39

N/A - Not Applicable

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Form IV
Method Blank Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **SS031607B06**
Date Analyzed: **03/23/07 10:29**

Client ID	Lab ID	Date/Time Analyzed
LCS	SS031607LCS04	03/23/07 11:05
LCSD	SS031607LCSD04	03/23/07 11:42
SED-1	0703022-01X	03/23/07 12:18
SED-2	0703022-02X	03/23/07 12:55
SED-3	0703022-03X	03/23/07 13:31

N/A - Not Applicable

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Form V
Tune Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **T4031101**
Date Analyzed: **03/10/07 14:29**

Target Mass	Relative To Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result
51	198	30	60	53.8	385312	Pass
68	69	0	2	0.3	1219	Pass
69	198	0	100	48.9	350656	Pass
70	69	0	2	0.6	1959	Pass
127	198	40	60	54.6	391008	Pass
197	198	0	1	0	0	Pass
198	198	100	100	100	716544	Pass
199	198	5	9	6.9	49200	Pass
275	198	10	30	25.4	181852	Pass
365	198	1	100	2.9	21076	Pass
441	443	0.01	100	63.8	58771	Pass
442	198	40	100	63.3	453508	Pass
443	442	17	23	20.3	92178	Pass

Client ID	Lab ID	Date/Time Analyzed
Initial Calibration	I4031101	03/10/07 15:05
Initial Calibration	I4031102	03/10/07 15:41
Initial Calibration	I4031103	03/10/07 16:17
Initial Calibration	I4031104	03/10/07 16:53
Initial Calibration	I4031105	03/10/07 17:30
Initial Calibration	I4031106	03/10/07 18:06

N/A - Not Applicable

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Form V
Tune Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: MA00030
ETR: 0703022
Lab ID: T4031301
Date Analyzed: 03/13/07 08:24

Target Mass	Relative To Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result
51	198	30	60	46.9	359984	Pass
68	69	0	2	1.1	3669	Pass
69	198	0	100	43.3	331784	Pass
70	69	0	2	0.2	777	Pass
127	198	40	60	49.5	379650	Pass
197	198	0	1	0	0	Pass
198	198	100	100	100	767010	Pass
199	198	5	9	6.7	51451	Pass
275	198	10	30	28.1	215510	Pass
365	198	1	100	3.5	26991	Pass
441	443	0.01	100	65.9	96368	Pass
442	198	40	100	94.8	727034	Pass
443	442	17	23	20.1	146287	Pass

Client ID	Lab ID	Date/Time Analyzed
CCV	C4031301	03/13/07 09:00
Blank	SS030907B03	03/13/07 09:36
LCS	SS030907LCS03	03/13/07 10:13
LCSD	SS030907LCSD03	03/13/07 10:49
SED-1	0703022-01	03/13/07 11:26
SED-2	0703022-02	03/13/07 12:02
SED-3	0703022-03	03/13/07 12:39

N/A - Not Applicable

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Form V
Tune Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **T4032301**
Date Analyzed: **03/23/07 09:15**

Target Mass	Relative To Mass	Lower Limit %	Upper Limit %	Relative Abundance %	Raw Abundance	Result
51	198	30	60	42.7	351662	Pass
68	69	0	2	0.8	2775	Pass
69	198	0	100	42.2	347660	Pass
70	69	0	2	0	0	Pass
127	198	40	60	50.1	412376	Pass
197	198	0	1	0	0	Pass
198	198	100	100	100	823797	Pass
199	198	5	9	6.6	54654	Pass
275	198	10	30	27.9	230133	Pass
365	198	1	100	3.1	25637	Pass
441	443	0.01	100	60.6	72162	Pass
442	198	40	100	74.6	614293	Pass
443	442	17	23	19.4	119130	Pass

Client ID	Lab ID	Date/Time Analyzed
CCV	C4032301	03/23/07 09:51
Blank	SS031607B06	03/23/07 10:29
LCS	SS031607LCS04	03/23/07 11:05
LCSD	SS031607LCSD04	03/23/07 11:42
SED-1	0703022-01X	03/23/07 12:18
SED-2	0703022-02X	03/23/07 12:55
SED-3	0703022-03X	03/23/07 13:31

N/A - Not Applicable

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Form VI
Initial Calibration Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.** Lab Code: **MA00030**

Project: **Hamilton Sanitary Landfill** ETR: **0703022**

Case: N/A SDG: N/A

Lab ID	Date/Time Analyzed
I4031101	03/10/07 15:05
I4031102	03/10/07 15:41
I4031103	03/10/07 16:17
I4031104	03/10/07 16:53
I4031105	03/10/07 17:30
I4031106	03/10/07 18:06

Response Factors

Parameter	.5	2	5	10	15	25	Mean	% RSD
Aniline	0.54	0.60	0.69	0.69	0.68	0.70	0.65	10.5
Phenol	1.42	1.50	1.48	1.47	1.44	1.53	1.47	2.8
bis(2-Chloroethyl)ether	1.12	1.18	1.19	1.15	1.06	1.18	1.15	4.4
2-Chlorophenol	1.19	1.24	1.23	1.24	1.21	1.26	1.23	2.0
1,3-Dichlorobenzene	1.42	1.48	1.44	1.44	1.43	1.44	1.44	1.3
1,4-Dichlorobenzene	1.39	1.43	1.42	1.41	1.41	1.39	1.41	1.2
1,2-Dichlorobenzene	1.37	1.38	1.38	1.37	1.35	1.36	1.37	0.9
2-Methylphenol	1.07	1.09	1.13	1.11	1.07	1.17	1.11	3.7
bis(2-Chloroisopropyl)ether	2.23	2.25	2.17	2.08	1.93	1.89	2.09	7.3
Acetophenone	1.67	1.71	1.76	1.73	1.65	1.79	1.72	3.2
4-Methylphenol	1.10	1.18	1.23	1.23	1.21	1.32	1.21	5.9
Hexachloroethane	0.59	0.57	0.56	0.57	0.55	0.54	0.56	3.1
Nitrobenzene	0.40	0.40	0.41	0.41	0.39	0.40	0.40	1.7
Isophorone	0.61	0.63	0.67	0.69	0.66	0.66	0.66	4.5
2-Nitrophenol	0.16	0.18	0.19	0.20	0.19	0.19	0.18	7.2
2,4-Dimethylphenol	0.34	0.36	0.38	0.38	0.37	0.37	0.37	3.9
bis(2-Chloroethoxy)methane	0.42	0.42	0.43	0.43	0.41	0.42	0.42	1.8
2,4-Dichlorophenol	0.25	0.30	0.32	0.33	0.31	0.32	0.30	9.2
1,2,4-Trichlorobenzene	0.35	0.36	0.36	0.35	0.35	0.35	0.35	1.4
Naphthalene	0.95	0.97	0.98	0.99	0.96	0.98	0.97	1.4
4-Chloroaniline	0.35	0.39	0.43	0.44	0.42	0.42	0.41	8.5
Hexachlorobutadiene	0.23	0.25	0.25	0.24	0.24	0.23	0.24	3.1
2-Methylnaphthalene	0.70	0.75	0.76	0.77	0.74	0.76	0.75	3.2
2,4,6-Trichlorophenol	0.36	0.37	0.40	0.41	0.40	0.39	0.39	5.0
2,4,5-Trichlorophenol	0.41	0.44	0.48	0.48	0.47	0.49	0.46	6.8
2-Chloronaphthalene	1.18	1.23	1.26	1.25	1.24	1.27	1.24	2.6
Dimethylphthalate	1.37	1.42	1.44	1.44	1.42	1.43	1.42	2.0
Acenaphthylene	1.85	1.95	2.00	2.05	1.99	2.06	1.98	3.9
2,6-Dinitrotoluene	0.25	0.30	0.32	0.32	0.32	0.33	0.31	9.4
Acenaphthene	1.26	1.23	1.24	1.25	1.25	1.27	1.25	1.3
2,4-Dinitrophenol	0.065	0.16	0.21	0.24	0.25	0.27	0.20	38.2[a]
4-Nitrophenol	0.15	0.23	0.24	0.27	0.27	0.28	0.24	19.2[a]

N/A - Not Applicable

[a] - Value outside of QC advisory limits.

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Form VI
Initial Calibration Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.** Lab Code: **MA00030**

Project: **Hamilton Sanitary Landfill** ETR: **0703022**

Case: N/A SDG: N/A

Lab ID	Date/Time Analyzed
I4031101	03/10/07 15:05
I4031102	03/10/07 15:41
I4031103	03/10/07 16:17
I4031104	03/10/07 16:53
I4031105	03/10/07 17:30
I4031106	03/10/07 18:06

Response Factors

Parameter	.5	2	5	10	15	25	Mean	% RSD
Dibenzofuran	1.79	1.84	1.84	1.84	1.81	1.85	1.83	1.3
2,4-Dinitrotoluene	0.35	0.42	0.43	0.43	0.44	0.44	0.42	8.5
Diethylphthalate	1.49	1.52	1.50	1.52	1.51	1.53	1.51	1.1
Azobenzene	0.21	0.22	0.22	0.23	0.23	0.22	0.22	3.7
Fluorene	1.36	1.40	1.41	1.43	1.41	1.44	1.41	1.9
4-Bromophenyl-phenylether	0.25	0.26	0.27	0.28	0.27	0.27	0.27	3.1
Hexachlorobenzene	0.31	0.31	0.33	0.32	0.31	0.31	0.31	2.4
Pentachlorophenol		0.13	0.15	0.17	0.17	0.18	0.16	13.3
Phenanthrene	1.23	1.23	1.21	1.22	1.20	1.19	1.21	1.2
Anthracene	1.21	1.27	1.28	1.30	1.26	1.26	1.26	2.4
Di-n-butylphthalate	1.21	1.37	1.37	1.42	1.39	1.39	1.36	5.5
Fluoranthene	1.28	1.36	1.37	1.40	1.37	1.39	1.36	3.0
Pyrene	1.17	1.26	1.26	1.25	1.22	1.22	1.23	2.9
Butylbenzylphthalate	0.47	0.54	0.56	0.57	0.56	0.56	0.54	7.3
3,3'-Dichlorobenzidine	0.43	0.45	0.43	0.41	0.41	0.40	0.42	4.5
Benz[a]anthracene	1.14	1.21	1.22	1.25	1.25	1.24	1.22	3.3
Chrysene	1.22	1.24	1.24	1.22	1.21	1.19	1.22	1.5
bis(2-Ethylhexyl)phthalate	0.66	0.76	0.79	0.79	0.79	0.78	0.76	6.6
Di-n-octylphthalate	0.94	1.15	1.21	1.19	1.17	1.18	1.14	8.7
Benzo[b]fluoranthene	1.05	1.08	1.34	1.14	1.33	1.35	1.22	11.3
Benzo[k]fluoranthene	1.09	1.25	1.00	1.19	0.98	0.97	1.08	10.9
Benzo[a]pyrene	0.95	1.13	1.12	1.13	1.13	1.13	1.10	6.7
Indeno[1,2,3-cd]pyrene	1.12	1.30	1.38	1.38	1.37	1.35	1.32	7.6
Dibenz[a,h]anthracene	0.93	1.09	1.11	1.13	1.12	1.12	1.08	7.2
Benzo[g,h,i]perylene	1.02	1.12	1.17	1.16	1.15	1.12	1.12	4.9
2-Fluorobiphenyl	1.32	1.39	1.44	1.46	1.45	1.50	1.43	4.3
Phenol-d5	1.42	1.42	1.48	1.48	1.43	1.50	1.46	2.4
Nitrobenzene-d5	0.38	0.39	0.40	0.41	0.40	0.40	0.40	3.1
2-Fluorophenol	0.99	1.04	1.08	1.11	1.08	1.09	1.07	4.1
2,4,6-Tribromophenol	0.13	0.16	0.16	0.17	0.16	0.16	0.16	9.6
Terphenyl-d14	0.85	0.89	0.90	0.88	0.87	0.87	0.88	2.2
Average RSD								5.4

N/A - Not Applicable

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Form VII
Calibration Verification
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: MA00030
ETR: 0703022
Lab ID: C4031301

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
Aniline	0.65	0.70	7.3	30
Phenol	1.47	1.52	3.3	20
bis(2-Chloroethyl)ether	1.15	1.13	1.3	30
2-Chlorophenol	1.23	1.27	3.8	30
1,3-Dichlorobenzene	1.44	1.49	3.2	30
1,4-Dichlorobenzene	1.41	1.43	1.4	20
1,2-Dichlorobenzene	1.37	1.37	0.1	30
2-Methylphenol	1.11	1.12	0.8	30
bis(2-Chloroisopropyl)ether	2.09	2.12	1.4	30
Acetophenone	1.72	1.76	2.3	30
4-Methylphenol	1.21	1.21	0.4	30
Hexachloroethane	0.56	0.57	0.9	30
Nitrobenzene	0.40	0.40	0.1	30
Isophorone	0.66	0.69	5.3	30
2-Nitrophenol	0.18	0.19	3.9	20
2,4-Dimethylphenol	0.37	0.37	1.9	30
bis(2-Chloroethoxy)methane	0.42	0.43	1.5	30
2,4-Dichlorophenol	0.30	0.33	6.9	20
1,2,4-Trichlorobenzene	0.35	0.36	0.8	30
Naphthalene	0.97	0.98	1.0	30
4-Chloroaniline	0.41	0.44	6.5	30
Hexachlorobutadiene	0.24	0.24	0.3	20
2-Methylnaphthalene	0.75	0.76	1.4	30
2,4,6-Trichlorophenol	0.39	0.40	3.3	20
2,4,5-Trichlorophenol	0.46	0.46	0.7	30
2-Chloronaphthalene	1.24	1.26	1.5	30
Dimethylphthalate	1.42	1.44	1.0	30
Acenaphthylene	1.98	2.00	1.1	30
2,6-Dinitrotoluene	0.31	0.32	2.9	30
Acenaphthene	1.25	1.27	1.9	20
2,4-Dinitrophenol	0.20	0.23	15.3	30
4-Nitrophenol	0.24	0.22	8.1	30
Dibenzofuran	1.83	1.83	0.0	30
2,4-Dinitrotoluene	0.42	0.44	4.1	30
Diethylphthalate	1.51	1.52	0.6	30
Azobenzene	0.22	0.23	4.3	30
Fluorene	1.41	1.41	0.2	30
4-Bromophenyl-phenylether	0.27	0.27	2.8	30

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VII
Calibration Verification
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4031301**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
Hexachlorobenzene	0.31	0.32	0.5	30
Pentachlorophenol	0.16	0.17	7.7	20
Phenanthrene	1.21	1.22	0.7	30
Anthracene	1.26	1.29	2.0	30
Di-n-butylphthalate	1.36	1.43	5.4	30
Fluoranthene	1.36	1.40	3.1	30
Pyrene	1.23	1.26	2.1	30
Butylbenzylphthalate	0.54	0.57	5.7	30
3,3'-Dichlorobenzidine	0.42	0.41	2.4	30
Benz[a]anthracene	1.22	1.27	4.4	30
Chrysene	1.22	1.24	1.4	30
bis(2-Ethylhexyl)phthalate	0.76	0.79	3.3	30
Di-n-octylphthalate	1.14	1.20	4.9	20
Benzo[b]fluoranthene	1.22	1.15	5.6	30
Benzo[k]fluoranthene	1.08	1.21	11.7	30
Benzo[a]pyrene	1.10	1.13	2.9	20
Indeno[1,2,3-cd]pyrene	1.32	1.38	4.7	30
Dibenz[a,h]anthracene	1.08	1.13	4.3	30
Benzo[g,h,i]perylene	1.12	1.15	2.4	30
2-Fluorobiphenyl	1.43	1.45	1.7	30
Phenol-d5	1.46	1.53	4.9	30
Nitrobenzene-d5	0.40	0.41	2.4	30
2-Fluorophenol	1.07	1.11	4.4	30
2,4,6-Tribromophenol	0.16	0.17	5.9	30
Terphenyl-d14	0.88	0.89	1.6	30
Average % D			3.2	

N/A - Not Applicable

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Form VII
Calibration Verification
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4032301**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
Aniline	0.65	0.65	0.4	30
Phenol	1.47	1.49	0.8	20
bis(2-Chloroethyl)ether	1.15	1.31	14.2	30
2-Chlorophenol	1.23	1.28	4.1	30
1,3-Dichlorobenzene	1.44	1.46	1.6	30
1,4-Dichlorobenzene	1.41	1.43	1.7	20
1,2-Dichlorobenzene	1.37	1.39	1.6	30
2-Methylphenol	1.11	1.14	2.9	30
bis(2-Chloroisopropyl)ether	2.09	2.08	0.7	30
Acetophenone	1.72	1.79	4.1	30
4-Methylphenol	1.21	1.27	5.0	30
Hexachloroethane	0.56	0.55	2.2	30
Nitrobenzene	0.40	0.39	3.0	30
Isophorone	0.66	0.65	0.3	30
2-Nitrophenol	0.18	0.20	6.7	20
2,4-Dimethylphenol	0.37	0.32	13.5	30
bis(2-Chloroethoxy)methane	0.42	0.41	1.9	30
2,4-Dichlorophenol	0.30	0.32	4.9	20
1,2,4-Trichlorobenzene	0.35	0.36	0.4	30
Naphthalene	0.97	0.98	0.9	30
4-Chloroaniline	0.41	0.41	0.1	30
Hexachlorobutadiene	0.24	0.23	2.4	20
2-Methylnaphthalene	0.75	0.75	0.1	30
2,4,6-Trichlorophenol	0.39	0.42	8.3	20
2,4,5-Trichlorophenol	0.46	0.48	4.1	30
2-Chloronaphthalene	1.24	1.26	1.8	30
Dimethylphthalate	1.42	1.44	1.6	30
Acenaphthylene	1.98	2.00	0.9	30
2,6-Dinitrotoluene	0.31	0.33	6.5	30
Acenaphthene	1.25	1.25	0.0	20
2,4-Dinitrophenol	0.20	0.25	25.1	30
4-Nitrophenol	0.24	0.23	3.5	30
Dibenzofuran	1.83	1.86	1.5	30
2,4-Dinitrotoluene	0.42	0.45	7.1	30
Diethylphthalate	1.51	1.54	1.9	30
Azobenzene	0.22	0.23	4.8	30
Fluorene	1.41	1.46	3.4	30
4-Bromophenyl-phenylether	0.27	0.27	2.9	30

N/A - Not Applicable

03/23/07 15:43

Form VII
Calibration Verification
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4032301**

Parameter	Ave. RF	CCV RF	Percent Deviation	Deviation Limit
Hexachlorobenzene	0.31	0.31	0.8	30
Pentachlorophenol	0.16	0.17	6.8	20
Phenanthrene	1.21	1.23	1.7	30
Anthracene	1.26	1.26	0.2	30
Di-n-butylphthalate	1.36	1.42	4.5	30
Fluoranthene	1.36	1.37	0.6	30
Pyrene	1.23	1.27	3.3	30
Butylbenzylphthalate	0.54	0.53	2.3	30
3,3'-Dichlorobenzidine	0.42	0.43	0.9	30
Benz[a]anthracene	1.22	1.24	1.7	30
Chrysene	1.22	1.22	0.4	30
bis(2-Ethylhexyl)phthalate	0.76	0.76	0.2	30
Di-n-octylphthalate	1.14	1.18	3.4	20
Benzo[b]fluoranthene	1.22	1.31	7.5	30
Benzo[k]fluoranthene	1.08	1.14	5.6	30
Benzo[a]pyrene	1.10	1.14	3.6	20
Indeno[1,2,3-cd]pyrene	1.32	1.42	7.7	30
Dibenz[a,h]anthracene	1.08	1.17	7.8	30
Benzo[g,h,i]perylene	1.12	1.19	5.8	30
2-Fluorobiphenyl	1.43	1.46	2.1	30
Phenol-d5	1.46	1.51	3.4	30
Nitrobenzene-d5	0.40	0.40	0.2	30
2-Fluorophenol	1.07	1.08	1.3	30
2,4,6-Tribromophenol	0.16	0.16	5.0	30
Terphenyl-d14	0.88	0.90	3.2	30
Average % D			3.6	

N/A - Not Applicable

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Form VIII
Internal Standard Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: MA00030
ETR: 0703022
Lab ID: C4031301

		1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10	
		Area	RT	Area	RT	Area	RT
Standard:		117438	6.23	449734	7.92	267945	10.63
Upper Limit:		234876	6.73	899468	8.42	535890	11.13
Lower Limit:		58719	5.73	224867	7.42	133972	10.13
Client ID	**Lab ID**						
Blank	SS030907B03	112547	6.23	410699	7.91	242836	10.62
LCS	SS030907LCS03	107200	6.23	404382	7.91	232023	10.63
LCSD	SS030907LCSD03	108692	6.23	405005	7.92	231953	10.63
SED-1	0703022-01	101973	6.23	380570	7.91	217050	10.62
SED-2	0703022-02	113489	6.23	424915	7.91	231715	10.62
SED-3	0703022-03	108629	6.23	409931	7.91	238068	10.62

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Form VIII
Internal Standard Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4031301**

		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT	Area	RT
Standard:		442849	12.64	520800	15.92	629178	17.51
Upper Limit:		885698	13.14	1041600	16.42	1258356	18.01
Lower Limit:		221424	12.14	260400	15.42	314589	17.01
Client ID	**Lab ID**						
Blank	SS030907B03	422469	12.64	486275	15.91	566171	17.51
LCS	SS030907LCS03	413199	12.64	485934	15.92	578513	17.51
LCSD	SS030907LCSD03	409926	12.64	477945	15.92	565770	17.51
SED-1	0703022-01	397852	12.63	465933	15.91	553686	17.50
SED-2	0703022-02	421138	12.63	523340	15.91	606068	17.51
SED-3	0703022-03	417679	12.63	493439	15.91	583190	17.50

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Form VIII
Internal Standard Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4032301**

		1,4-Dichlorobenzene-d4		Naphthalene-d8		Acenaphthene-d10	
		Area	RT	Area	RT	Area	RT
Standard:		130525	6.20	509283	7.89	296613	10.61
Upper Limit:		261050	6.70	1018566	8.39	593226	11.11
Lower Limit:		65262	5.70	254642	7.39	148306	10.11
Client ID	**Lab ID**						
Blank	SS031607B06	110530	6.20	434943	7.88	253247	10.60
LCS	SS031607LCS04	116637	6.20	473376	7.89	246265	10.61
LCSD	SS031607LCSD04	119000	6.20	463804	7.89	235250	10.61
SED-1	0703022-01X	113716	6.20	433534	7.88	234240	10.60
SED-2	0703022-02X	114569	6.20	426994	7.88	227560	10.60
SED-3	0703022-03X	113757	6.20	434020	7.88	232726	10.60

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Form VIII
Internal Standard Summary
Semi-Volatile Organics by 8270

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C4032301**

		Phenanthrene-d10		Chrysene-d12		Perylene-d12	
		Area	RT	Area	RT	Area	RT
Standard:		519669	12.61	585059	15.90	673161	17.49
Upper Limit:		1039338	13.11	1170118	16.40	1346322	17.99
Lower Limit:		259834	12.11	292530	15.40	336580	16.99
Client ID	**Lab ID**						
Blank	SS031607B06	437687	12.61	494240	15.89	483947	17.48
LCS	SS031607LCS04	438378	12.61	514876	15.89	590181	17.48
LCSD	SS031607LCSD04	437433	12.61	511275	15.89	583097	17.48
SED-1	0703022-01X	439555	12.61	520627	15.89	586088	17.48
SED-2	0703022-02X	432160	12.60	517842	15.89	594286	17.48
SED-3	0703022-03X	437299	12.61	525614	15.89	590406	17.48

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.5 minutes of internal standard RT.
RT Lower Limit = -0.5 minutes of internal standard RT.

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Pesticides

Form I
Pesticides by 8081

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-1**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/15/07	74.4	5.20	1	1	JBS

Parameter	Result
2,4'-DDD	0.13 U
2,4'-DDE	0.13 U
2,4'-DDT	0.13 U
4,4'-DDD	0.13 U
4,4'-DDE	0.13 U
4,4'-DDT	0.13 U
alpha-Chlordane	0.13 U
Dieldrin	0.13 U
Endrin	0.13 U
gamma-BHC	0.13 U
gamma-Chlordane	0.13 U
Heptachlor epoxide (B)	0.13 U
Hexachlorobenzene	0.13 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	74	30-150
Decachlorobiphenyl	79	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form I
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-2**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/15/07	56.8	5.60	1	1	JBS

Parameter	Result
2,4'-DDD	0.16 U
2,4'-DDE	0.16 U
2,4'-DDT	0.16 U
4,4'-DDD	**0.25**
4,4'-DDE	**0.53**
4,4'-DDT	**0.95** P
alpha-Chlordane	0.16 U
Dieldrin	0.16 U
Endrin	0.16 U
gamma-BHC	0.16 U
gamma-Chlordane	0.16 U
Heptachlor epoxide (B)	0.16 U
Hexachlorobenzene	0.16 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	70	30-150
Decachlorobiphenyl	82	30-150

N/A - Not Applicable
P - Greater than 40% RPD between the two columns, the higher value is reported according to the method.
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/16/07 10:05

Form I
Pesticides by 8081

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-3**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/15/07	78.8	5.31	1	1	JBS

Parameter	Result
2,4'-DDD	0.12 U
2,4'-DDE	0.12 U
2,4'-DDT	0.12 U
4,4'-DDD	0.12 U
4,4'-DDE	0.12 U
4,4'-DDT	0.12 U
alpha-Chlordane	0.12 U
Dieldrin	0.12 U
Endrin	0.12 U
gamma-BHC	0.12 U
gamma-Chlordane	0.12 U
Heptachlor epoxide (B)	0.12 U
Hexachlorobenzene	0.12 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	64	30-150
Decachlorobiphenyl	72	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/16/07 10:05

Form I
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Blank**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **PS030907B02**
Associated Blank: N/A
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/09/07	03/15/07	100	5.00	1	1	JBS

Parameter	Result
2,4'-DDD	0.10 U
2,4'-DDE	0.10 U
2,4'-DDT	0.10 U
4,4'-DDD	0.10 U
4,4'-DDE	0.10 U
4,4'-DDT	0.10 U
alpha-Chlordane	0.10 U
Dieldrin	0.10 U
Endrin	0.10 U
gamma-BHC	0.10 U
gamma-Chlordane	0.10 U
Heptachlor epoxide (B)	0.10 U
Hexachlorobenzene	0.10 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	67	30-150
Decachlorobiphenyl	87	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/16/07 10:04

Form III
Spike Recovery Summary
Pesticides by 8081

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/09/07	100	JBS

Lab ID:	PS030907B02		PS030907LCS02		PS030907LCSD02				
Parameter	**Blank Conc.**		**LCS Conc.**	**LCS % Recovery**	**LCSD Conc.**	**LCSD % Recovery**	**% RPD**	**RPD Limit**	**% Recovery Limits**
4,4'-DDD	0.10	U	21	107	24	118	10	30	40-140
4,4'-DDE	0.10	U	18	88	18	92	5	30	40-140
4,4'-DDT	0.10	U	20	98	21	105	6	30	40-140
alpha-Chlordane	0.10	U	16	83	18	89	7	30	40-140
Dieldrin	0.10	U	16	80	17	86	7	30	40-140
Endrin	0.10	U	16	78	17	86	9	30	40-140
gamma-BHC	0.10	U	16	82	18	88	7	30	40-140
gamma-Chlordane	0.10	U	17	83	18	90	8	30	40-140
Heptachlor epoxide (B)	0.10	U	16	79	17	85	7	30	40-140
Hexachlorobenzene	0.10	U	13	66	14	71	6	30	40-140

Surrogate	% Recovery		Acceptance Range (%)
Tetrachloro-meta-xylene	69	66	30-150
Decachlorobiphenyl	80	87	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

03/16/07 10:06

Supporting Quality Control Results

Form II
Surrogate Recovery
Pesticides by 8081

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Case: N/A SDG: N/A

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

Client ID	Lab ID	Column 1 TMX	Column 1 Decachlorobiphenyl	Column 2 TMX	Column 2 Decachlorobiphenyl
Blank	PS030907B02	65	75	67	87
LCS	PS030907LCS02	69	75	63	80
LCSD	PS030907LCSD02	66	77	65	87
SED-1	0703022-01	74	76	67	79
SED-2	0703022-02	69	78	70	82
SED-3	0703022-03	64	72	63	69

N/A - Not Applicable

Surrogate	QC Limits
Tetrachloro-meta-xylene (TMX)	30-150
Decachlorobiphenyl	30-150

03/16/07 09:28

Form IV
Method Blank Summary
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **PS030907B02**
Date Analyzed: **03/15/07 15:31**

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

Client ID	Lab ID	Date/Time Analyzed
LCS	PS030907LCS02	03/15/07 16:12
LCSD	PS030907LCSD02	03/15/07 16:52
SED-1	0703022-01	03/15/07 18:12
SED-2	0703022-02	03/15/07 18:52
SED-3	0703022-03	03/15/07 19:32

N/A - Not Applicable

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PEM
Performance Evaluation Mixture Report
Pesticides by 8081

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **PEM3031501**

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

Parameter	Signal 1	Signal 2
4,4'-DDD	13360360	46281584
4,4'-DDE	5095584	16379309
4,4'-DDT	1836604032	5502168064
Endrin	1091588864	2906212096
Endrin aldehyde	11292966	30361946
Endrin ketone	32282204	99010976

Parameter	% Breakdown 1	% Breakdown 2
DDT	1.0	1.1
Endrin	3.8	4.3

N/A - Not Applicable

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Form VII
Calibration Verification
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3031501**

Case: N/A SDG: N/A

Column 1: RTx-5 ID: 0.25 mm

Parameter	RT	RT Window Low	RT Window High	True Value	CCV Value	% D	Deviation Limit
2,4'-DDD	18.13	18.08	18.18	50.00	50.59	1.2	15
2,4'-DDE	14.86	14.81	14.91	50.00	47.38	5.2	15
2,4'-DDT	20.86	20.81	20.91	50.00	47.95	4.1	15
4,4'-DDD	20.66	20.61	20.71	50.00	55.41	10.8	15
4,4'-DDE	17.34	17.29	17.39	50.00	49.40	1.2	15
4,4'-DDT	23.03	22.98	23.08	50.00	48.45	3.1	15
alpha-Chlordane	15.68	15.63	15.73	50.00	45.92	8.2	15
Dieldrin	17.57	17.52	17.62	50.00	46.76	6.5	15
Endrin	19.32	19.27	19.37	50.00	45.71	8.6	15
gamma-BHC	7.01	6.96	7.06	50.00	48.58	2.8	15
gamma-Chlordane	14.55	14.50	14.60	50.00	45.84	8.3	15
Heptachlor epoxide (B)	12.93	12.88	12.98	100.00	92.22	7.8	15
Hexachlorobenzene	6.43	6.38	6.48	50.00	43.61	12.8	15
Tetrachloro-meta-xylene	5.45	5.40	5.50	50.00	45.36	9.3	15
Decachlorobiphenyl	33.15	33.10	33.20	50.00	43.01	14.0	15
Average % D						6.9	

N/A - Not Applicable

03/16/07 09:28

Form VII
Calibration Verification
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3031501**

Case: N/A SDG: N/A

Column 2: CLP-II ID: 0.25 mm

Parameter	RT	RT Window Low	RT Window High	True Value	CCV Value	% D	Deviation Limit
2,4'-DDD	19.34	19.29	19.39	50.00	48.32	3.4	15
2,4'-DDE	15.15	15.10	15.20	50.00	47.19	5.6	15
2,4'-DDT	21.40	21.35	21.45	50.00	49.62	0.8	15
4,4'-DDD	21.99	21.94	22.04	50.00	54.33	8.7	15
4,4'-DDE	17.74	17.69	17.79	50.00	47.42	5.2	15
4,4'-DDT	23.78	23.73	23.83	50.00	50.26	0.5	15
alpha-Chlordane	16.00	15.95	16.05	50.00	46.02	8.0	15
Dieldrin	18.55	18.50	18.60	50.00	47.19	5.6	15
Endrin	20.71	20.66	20.76	50.00	45.44	9.1	15
gamma-BHC	7.41	7.36	7.46	50.00	47.84	4.3	15
gamma-Chlordane	14.88	14.83	14.93	50.00	46.34	7.3	15
Heptachlor epoxide (B)	13.49	13.44	13.54	50.00	45.72	8.6	15
Hexachlorobenzene	6.12	6.07	6.17	50.00	43.25	13.5	15
Tetrachloro-meta-xylene	5.13	5.08	5.18	50.00	45.67	8.7	15
Decachlorobiphenyl	32.91	32.86	32.96	50.00	44.66	10.7	15
Average % D						6.7	

N/A - Not Applicable

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VII
Calibration Verification
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3031502**

Case: N/A SDG: N/A

Column 1: RTx-5 ID: 0.25 mm

Parameter	RT	RT Window Low	RT Window High	True Value	CCV Value	% D	Deviation Limit
2,4'-DDD	18.11	18.08	18.18	50.00	50.06	0.1	15
2,4'-DDE	14.84	14.81	14.91	50.00	46.74	6.5	15
2,4'-DDT	20.84	20.81	20.91	50.00	45.62	8.8	15
4,4'-DDD	20.64	20.61	20.71	50.00	56.45	12.9	15
4,4'-DDE	17.32	17.29	17.39	50.00	48.89	2.2	15
4,4'-DDT	23.01	22.98	23.08	50.00	46.98	6.0	15
alpha-Chlordane	15.66	15.63	15.73	50.00	44.64	10.7	15
Dieldrin	17.55	17.52	17.62	50.00	45.40	9.2	15
Endrin	19.30	19.27	19.37	50.00	44.14	11.7	15
gamma-BHC	7.00	6.96	7.06	50.00	47.28	5.4	15
gamma-Chlordane	14.53	14.50	14.60	50.00	45.02	10.0	15
Heptachlor epoxide (B)	12.91	12.88	12.98	100.00	90.05	10.0	15
Hexachlorobenzene	6.42	6.38	6.48	50.00	42.35	15.3[a]	15
Tetrachloro-meta-xylene	5.44	5.40	5.50	50.00	44.07	11.9	15
Decachlorobiphenyl	33.14	33.10	33.20	50.00	43.24	13.5	15
Average % D						8.9	

N/A - Not Applicable
[a] - Value outside of QC Limits.

03/16/07 09:29

Form VII
Calibration Verification
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3031502**

Case: N/A SDG: N/A

Column 2: CLP-II ID: 0.25 mm

Parameter	RT	RT Window Low	RT Window High	True Value	CCV Value	% D	Deviation Limit
2,4'-DDD	19.33	19.29	19.39	50.00	47.48	5.0	15
2,4'-DDE	15.15	15.10	15.20	50.00	46.00	8.0	15
2,4'-DDT	21.40	21.35	21.45	50.00	48.55	2.9	15
4,4'-DDD	21.98	21.94	22.04	50.00	56.05	12.1	15
4,4'-DDE	17.74	17.69	17.79	50.00	46.64	6.7	15
4,4'-DDT	23.78	23.73	23.83	50.00	49.18	1.6	15
alpha-Chlordane	16.00	15.95	16.05	50.00	44.95	10.1	15
Dieldrin	18.56	18.50	18.60	50.00	46.28	7.4	15
Endrin	20.70	20.66	20.76	50.00	43.63	12.7	15
gamma-BHC	7.41	7.36	7.46	50.00	46.69	6.6	15
gamma-Chlordane	14.88	14.83	14.93	50.00	45.27	9.5	15
Heptachlor epoxide (B)	13.49	13.44	13.54	50.00	44.44	11.1	15
Hexachlorobenzene	6.12	6.07	6.17	50.00	41.87	16.3*	15
Tetrachloro-meta-xylene	5.14	5.08	5.18	50.00	43.98	12.0	15
Decachlorobiphenyl	32.90	32.86	32.96	50.00	43.08	13.8	15
Average % D						9.1	

N/A - Not Applicable
* - Value outside of QC Limits.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VIII
Internal Standard Summary
Pesticides by 8081

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **C3031501**

Case: N/A SDG: N/A

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

		Column 1 BZ 192		Column 2 BZ 192	
		Area	RT	Area	RT
Standard:		437296480	26.57	1412084352	26.44
Upper Limit:		874592960	26.62	2824168704	26.49
Lower Limit:		218648240	26.52	706042176	26.39
Client ID	Lab ID				
Blank	PS030907B02	411609152	26.56	1194642048	26.43
LCS	PS030907LCS02	423860064	26.56	1317162368	26.43
LCSD	PS030907LCSD02	417022144	26.56	1225350656	26.43
SED-1	0703022-01	423716608	26.55	1344534656	26.43
SED-2	0703022-02	405672064	26.55	1260098688	26.43
SED-3	0703022-03	416549408	26.56	1332108672	26.43
CCV	C3031502	445877248	26.55	1431223808	26.43

N/A - Not Applicable

Area Upper Limit = +100% of internal standard.
Area Lower Limit = -50% of internal standard.
RT = Retention Time.
RT Upper Limit = +0.05 minutes of internal standard RT.
RT Lower Limit = -0.05 minutes of internal standard RT.

03/16/07 09:31

Quantitation Report (QT Reviewed)

JBS 3/16/07

Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-01.D\ECD1A.CH Vial: 11
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-01.D\ECD2B.CH
Acq On : 3-15-07 6:12:36 PM Operator: JBS
Sample : 0703022-01 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:15 2007 Quant Results File: FPT30312.RES

Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Initial Calibration
DataAcq Meth : FPT30312.M

Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

		Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L	
		Internal Standards							
1)	I	BZ 192	26.55	26.43	423.7E6	1344.5E6	50.000m	50.000m	
		System Monitoring Compounds							
2)	S	TMX - Surrogate	5.45	5.13	629.2E6	1631.4E6	74.318m	67.124m	
		Spiked Amount 100.000 Range 30 - 100 Recovery =					74.32%	67.12%	
32)	S	DCB - Surrogate	33.15	32.90	654.2E6	1809.8E6	76.059	79.027m	
		Target Compounds							
4)	T	alpha-BHC	6.20	6.44	14878898	26780085	1.162m	0.721m	#
26)	T	endosulfan sulfa	22.87	25.61	14542218	23665536	2.007m	1.083m	#
29)	T	methoxychlor	26.27	27.55	5155602	97755123	1.640m	10.961m	#

(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
(I,C,F) I=Interference, C=Coelluting Calibration Peak, F=Fails CC Criteria.
03022-01.D FPT30312.M Fri Mar 16 08:16:17 2007

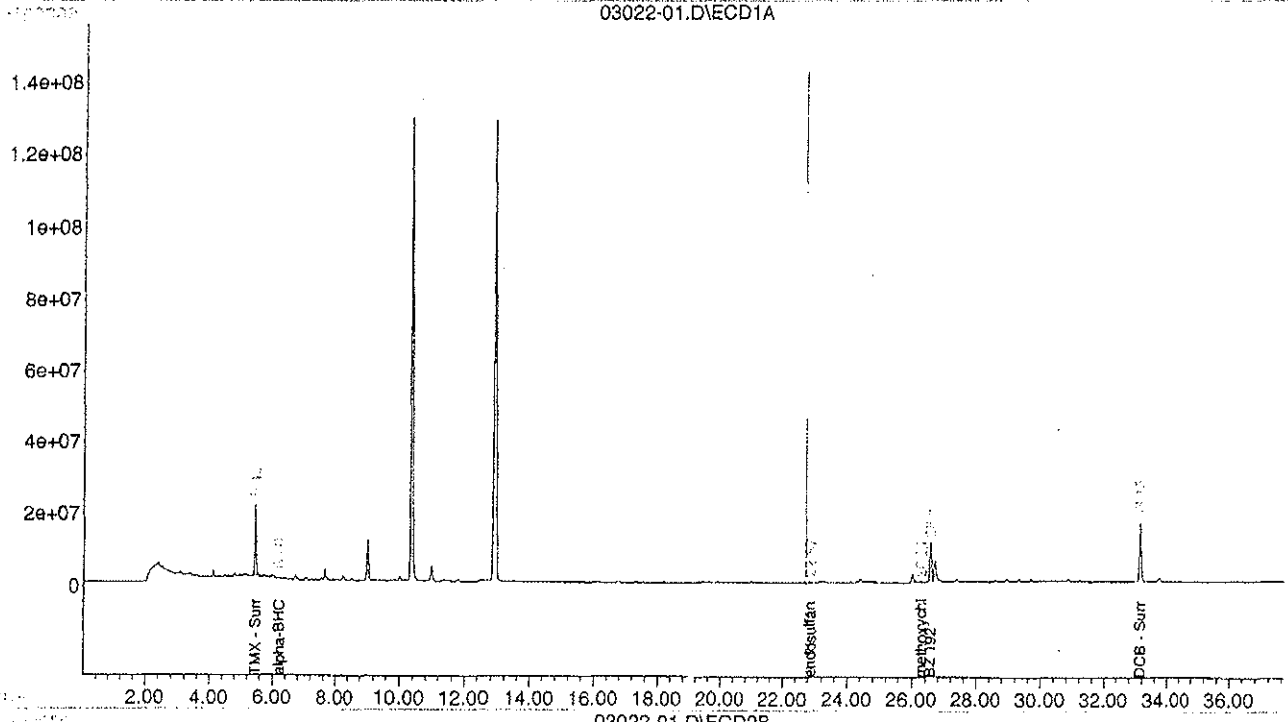
Quantitation Report

Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-01.D\ECD1A.CH Vial: 11
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-01.D\ECD2B.CH
Acq On : 3-15-07 6:12:36 PM Operator: JBS
Sample : 0703022-01 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:15 2007 Quant Results File: FPT30312.RES

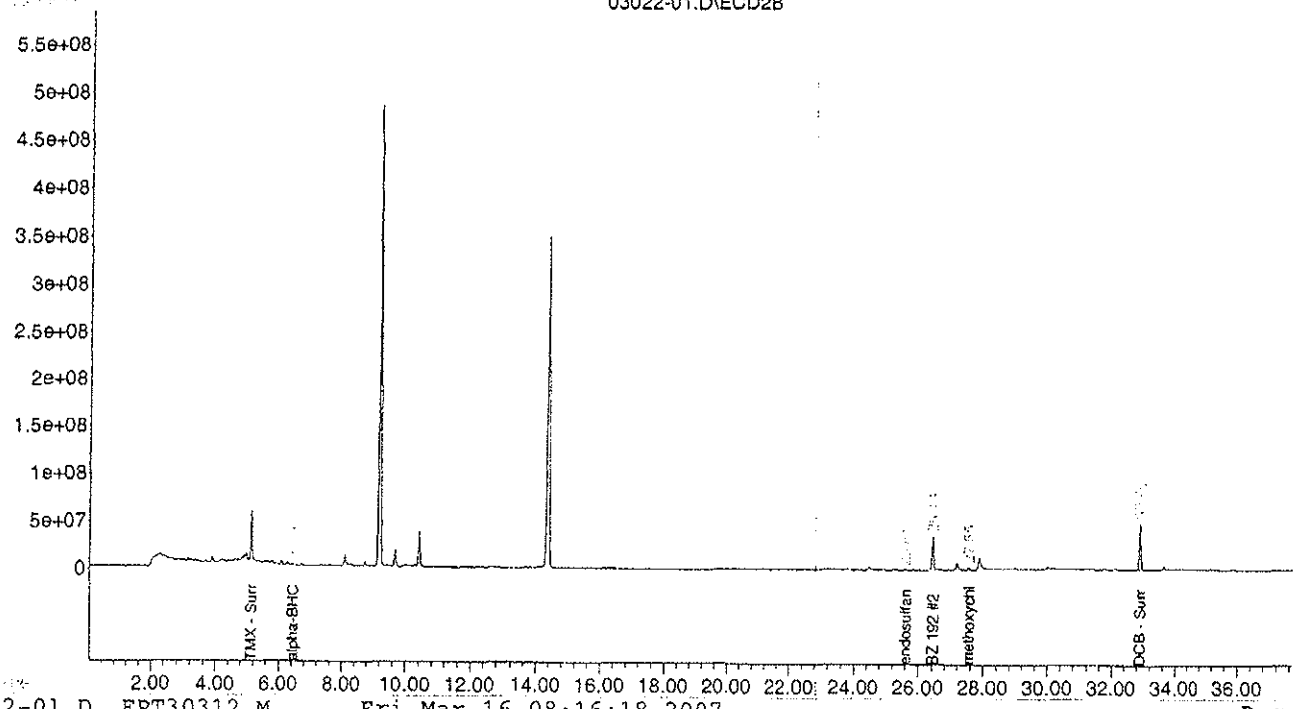
Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Multiple Level Calibration
DataAcq Meth : FPT30312.M

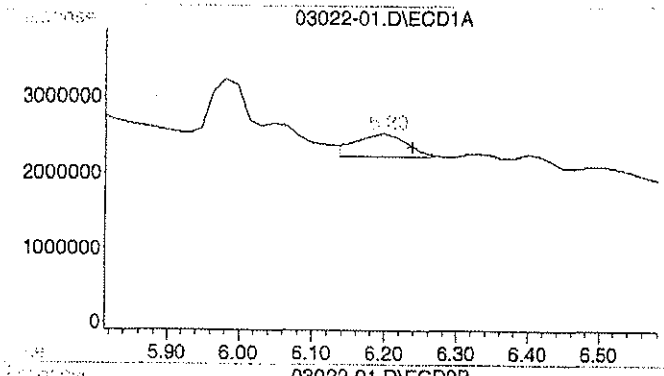
Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

03022-01.D\ECD1A



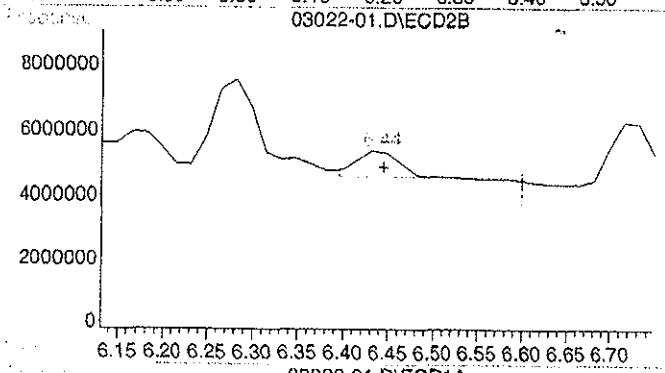
03022-01.D\ECD2B





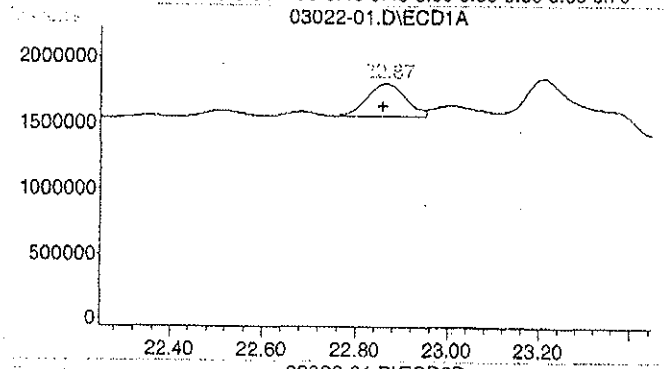
#4 alpha-BHC

R.T.: 6.197 min
Delta R.T.: -0.040 min
Response: 14878898
Conc: 1.16 ug/L m



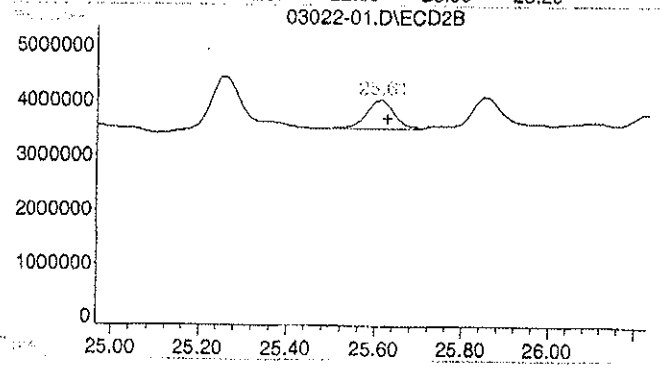
#4 alpha-BHC

R.T.: 6.436 min
Delta R.T.: -0.008 min
Response: 26780085
Conc: 0.72 ug/L m



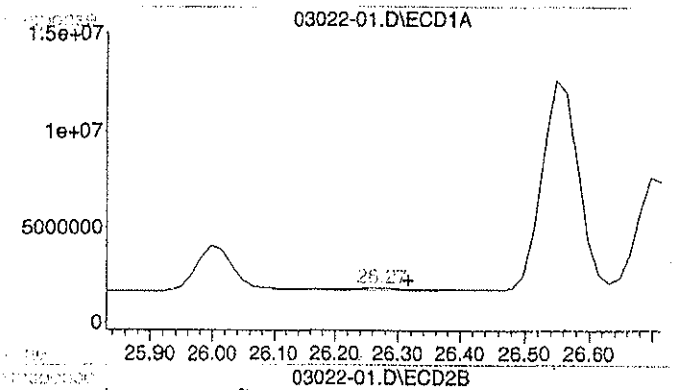
#26 endosulfan sulfate

R.T.: 22.865 min
Delta R.T.: 0.007 min
Response: 14542218
Conc: 2.01 ug/L m



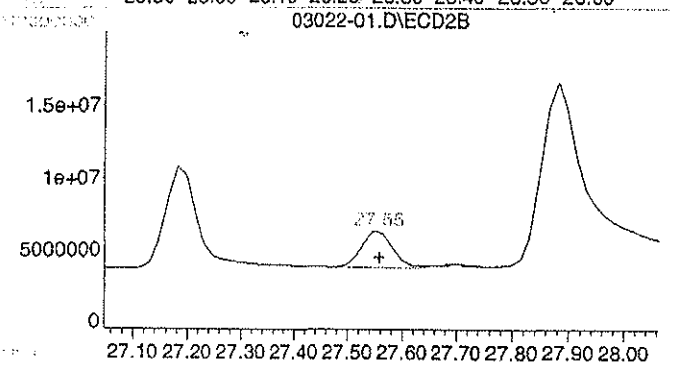
#26 endosulfan sulfate

R.T.: 25.609 min
Delta R.T.: -0.016 min
Response: 23665536
Conc: 1.08 ug/L m



#29 methoxychlor

R.T.: 26.270 min
Delta R.T.: -0.046 min
Response: 5155602
Conc: 1.64 ug/L m



#29 methoxychlor

R.T.: 27.552 min
Delta R.T.: -0.005 min
Response: 97755123
Conc: 10.96 ug/L m

Quantitation Report (QT Reviewed)

JBS 3/16/07

Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-02.D\ECD1A.CH Vial: 12
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-02.D\ECD2B.CH
Acq On : 3-15-07 6:52:47 PM Operator: JBS
Sample : 0703022-02 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:26 2007 Quant Results File: FPT30312.RES

Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Initial Calibration
DataAcq Meth : FPT30312.M

Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

		Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L	
		Internal Standards							
1)	I	BZ 192	26.55	26.43	405.7E6	1260.1E6	50.000m	50.000m	
		System Monitoring Compounds							
2)	S	TMX - Surrogate	5.44	5.13	562.5E6	1605.6E6	69.393m	70.489m	
		Spiked Amount 100.000 Range 30 - 100 Recovery =					69.39%	70.49%	
32)	S	DCB - Surrogate	33.15	32.90	644.7E6	1764.7E6	78.292m	82.220m	
		Target Compounds							
18)	T	4,4'-DDE	17.31	17.73	12604124	45825522	1.496m	1.685m	
23)	T	4,4'-DDD	20.63	21.97	4516860	13399591	0.804m	0.783m	
26)	T	endosulfan sulfa	22.88	25.60	17273841	14502648	2.490m	0.708m	#
27)	T	4,4'-DDT	23.01	23.75	5425305	60658320	0.777m(I)	3.022m	#

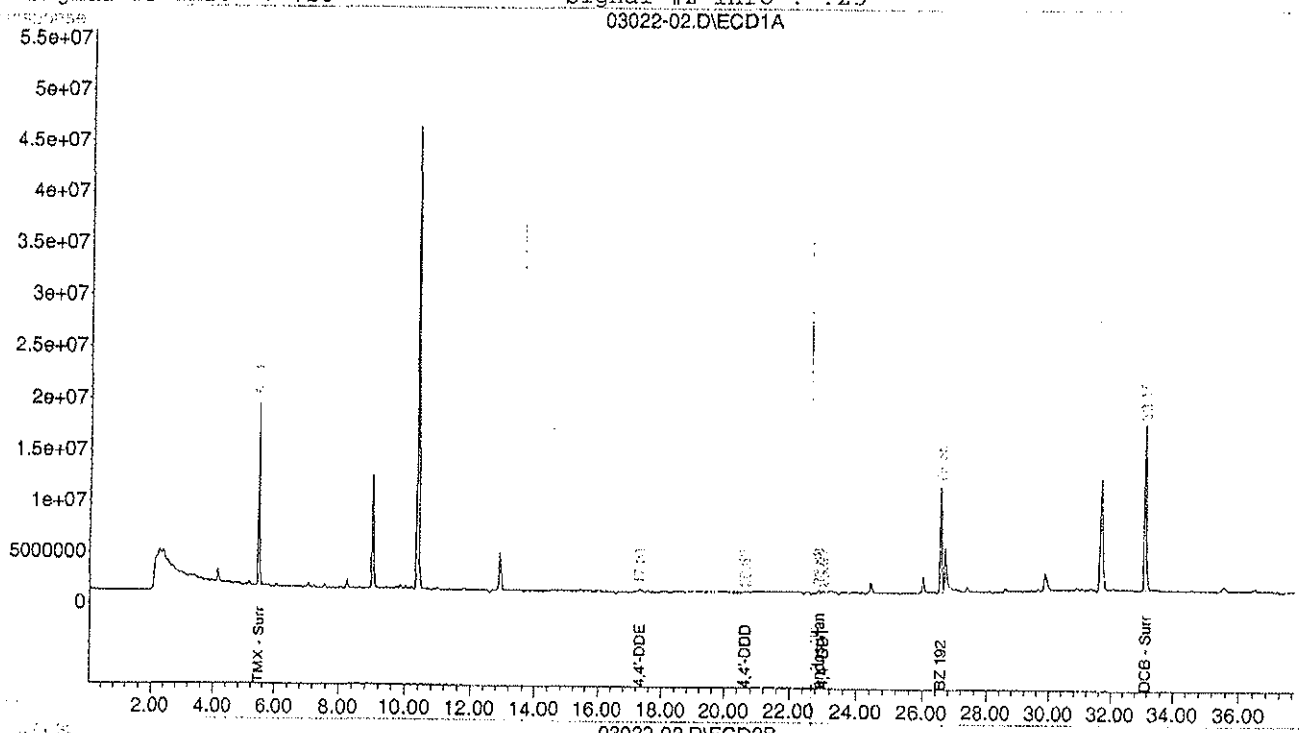
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
(I,C,F) I=Interference, C=Coelluting Calibration Peak, F=Fails CC Criteria.

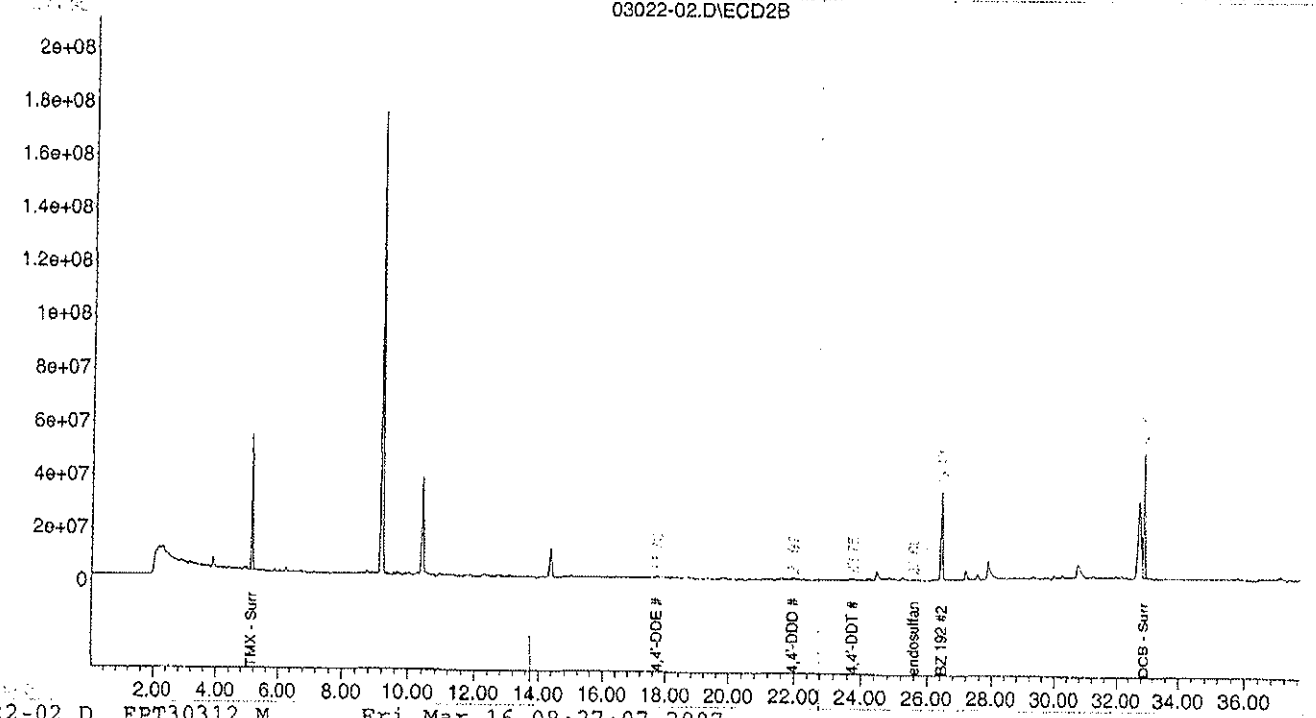
Quantitation Report

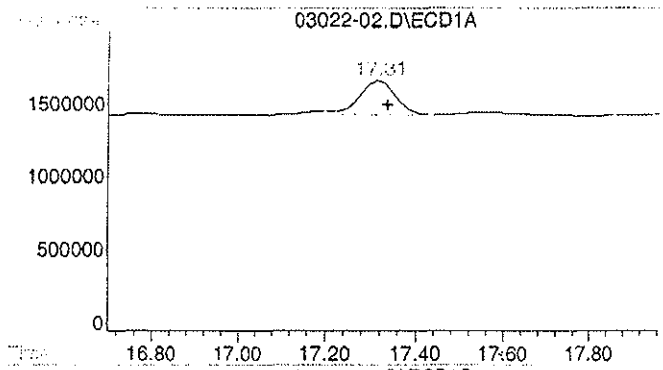
Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-02.D\ECD1A.CH Vial: 12
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-02.D\ECD2B.CH
Acq On : 3-15-07 6:52:47 PM Operator: JBS
Sample : 0703022-02 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:26 2007 Quant Results File: FPT30312.RES

Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Multiple Level Calibration
DataAcq Meth : FPT30312.M

Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

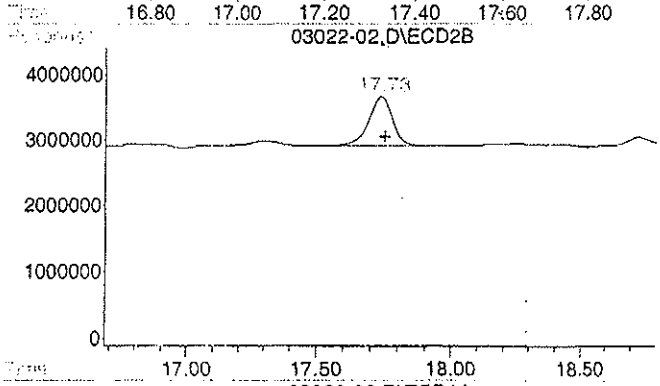






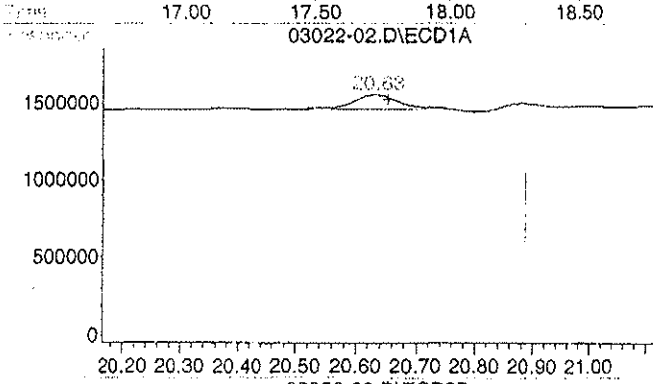
#18 4,4'-DDE

R.T.: 17.314 min
Delta R.T.: -0.021 min
Response: 12604124
Conc: 1.50 ug/L m



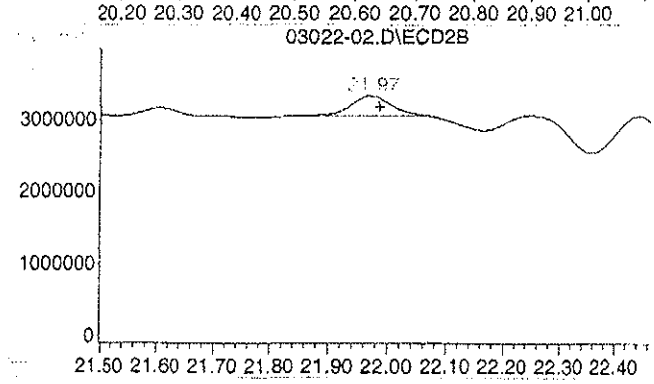
#18 4,4'-DDE

R.T.: 17.734 min
Delta R.T.: -0.015 min
Response: 45825522
Conc: 1.69 ug/L m



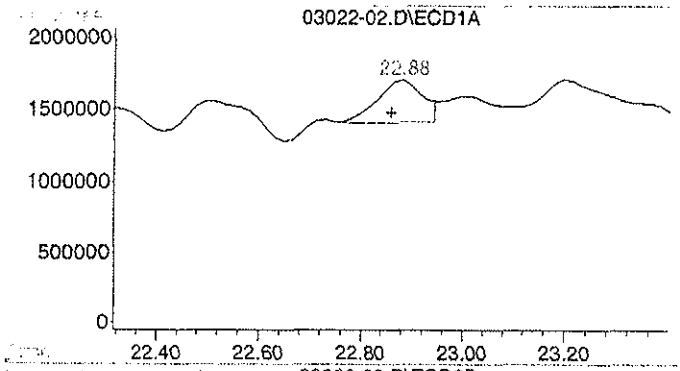
#23 4,4'-DDD

R.T.: 20.631 min
Delta R.T.: -0.022 min
Response: 4516860
Conc: 0.80 ug/L m



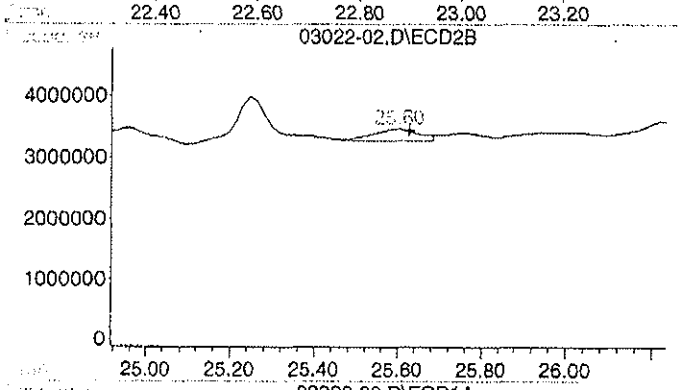
#23 4,4'-DDD

R.T.: 21.970 min
Delta R.T.: -0.015 min
Response: 13399591
Conc: 0.78 ug/L m



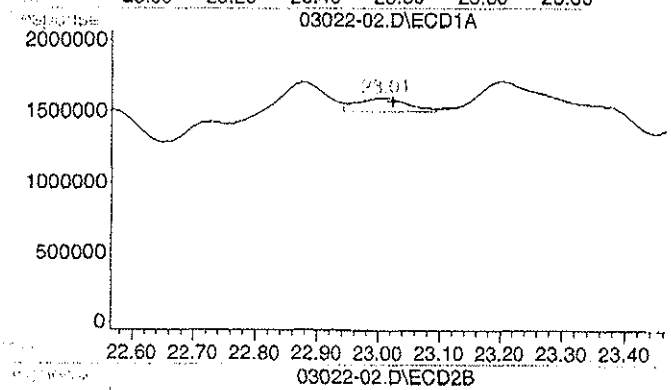
#26 endosulfan sulfate

R.T.: 22.877 min
Delta R.T.: 0.019 min
Response: 17273841
Conc: 2.49 ug/L m



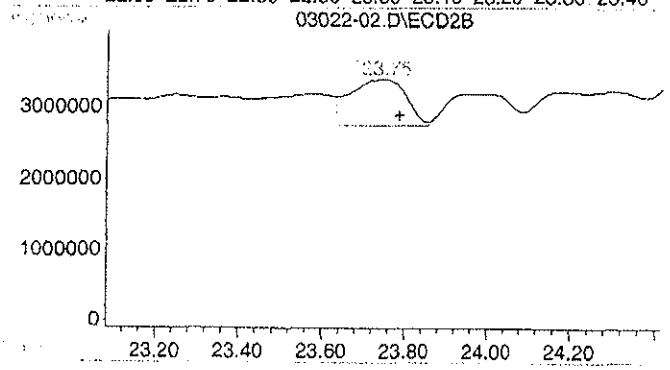
#26 endosulfan sulfate

R.T.: 25.595 min
Delta R.T.: -0.030 min
Response: 14502648
Conc: 0.71 ug/L m



#27 4,4'-DDT

R.T.: 23.006 min
Delta R.T.: -0.016 min
Response: 5425305
Conc: 0.78 ug/L m



#27 4,4'-DDT

R.T.: 23.748 min
Delta R.T.: -0.039 min
Response: 60658320
Conc: 3.02 ug/L m

Quantitation Report (QT Reviewed)

JBS 3/16/07

Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-03.D\ECD1A.CH Vial: 13
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-03.D\ECD2B.CH
Acq On : 3-15-07 7:32:56 PM Operator: JBS
Sample : 0703022-03 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:33 2007 Quant Results File: FPT30312.RES

Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Initial Calibration
DataAcq Meth : FPT30312.M

Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

	Compound	RT#1	RT#2	Resp#1	Resp#2	ug/L	ug/L	
	Internal Standards							
1) I	BZ 192	26.56	26.43	416.5E6	1332.1E6	50.000	50.000m	
	System Monitoring Compounds							
2) S	TMX - Surrogate	5.44	5.13	531.6E6	1513.2E6	63.868m	62.840m	
	Spiked Amount 100.000 Range 30 - 100 Recovery =					63.87%	62.84%	
32) S	DCB - Surrogate	33.15	32.90	611.6E6	1562.5E6	72.332m	68.861m	
	Target Compounds							
29) T	methoxychlor	26.28	27.55	3824734	96300156	1.237m	10.899m	#

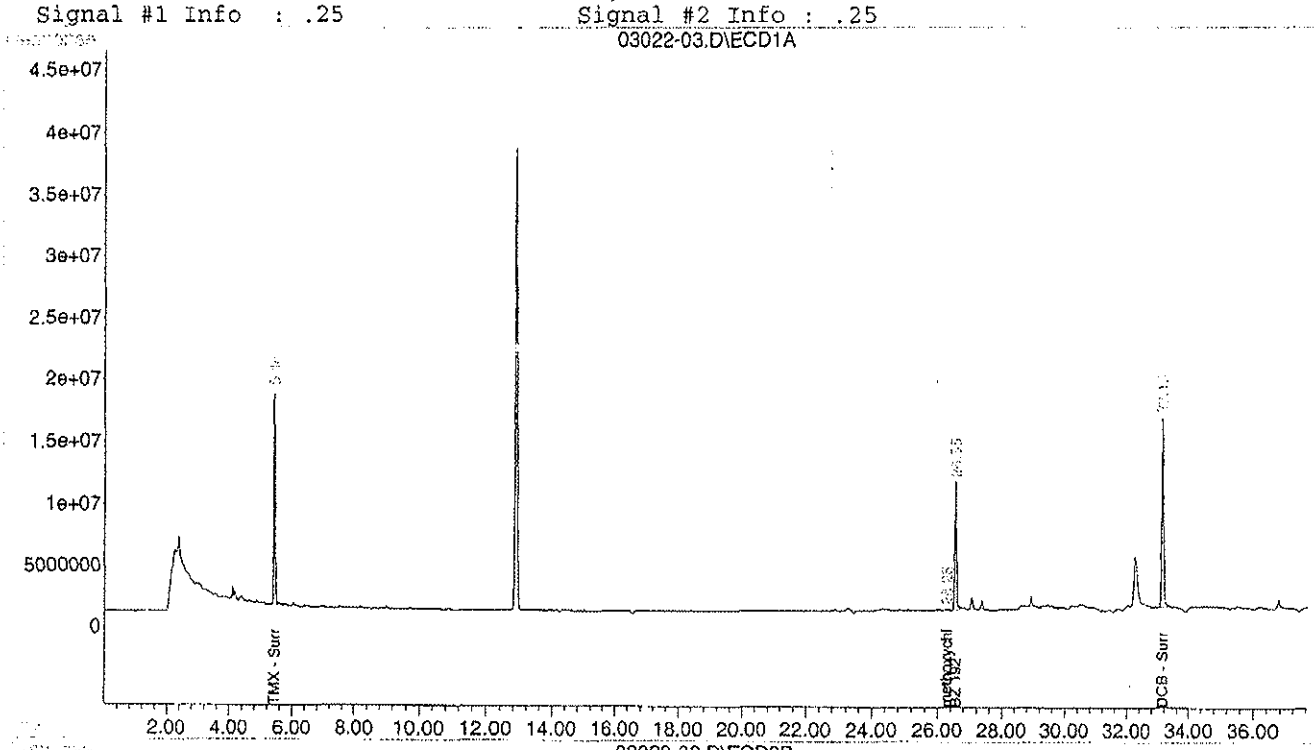
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual int.
(I,C,F) I=Interference, C=Coelluting Calibration Peak, F=Fails CC Criteria.
03022-03.D FPT30312.M Fri Mar 16 08:34:19 2007

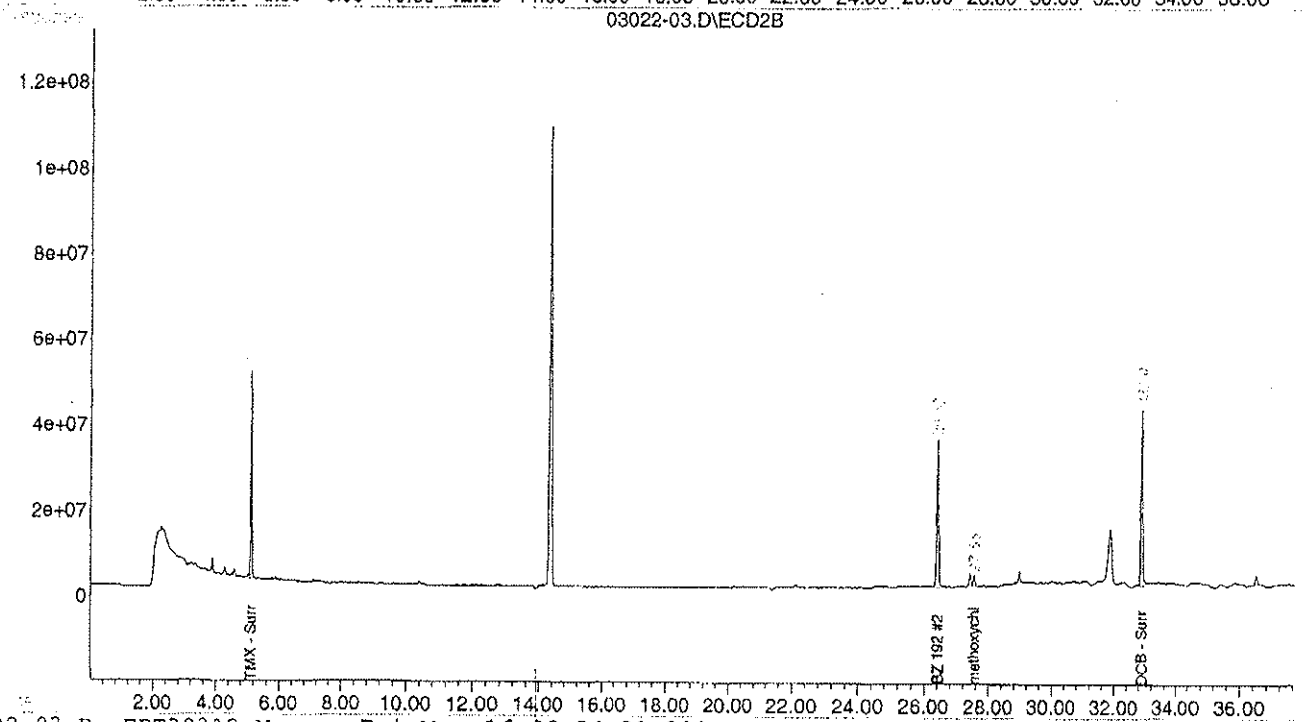
Quantitation Report

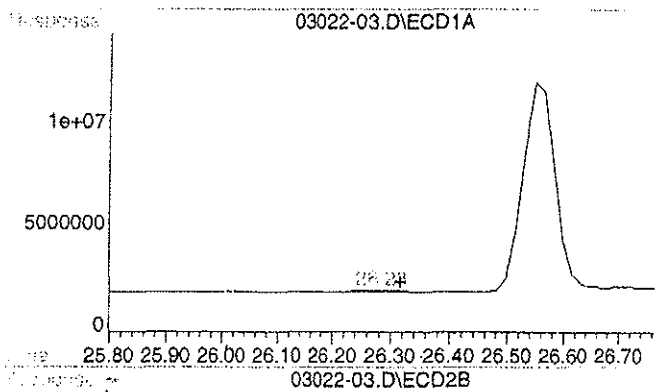
Signal #1 : D:\HPCHEM\1\DATA\MARC15\03022-03.D\ECD1A.CH Vial: 13
Signal #2 : D:\HPCHEM\1\DATA\MARC15\03022-03.D\ECD2B.CH
Acq On : 3-15-07 7:32:56 PM Operator: JBS
Sample : 0703022-03 Inst : GC 6890A
Misc : Multiplr: 1.00
IntFile Signal #1: autoint1.e IntFile Signal #2: autoint2.e
Quant Time: Mar 16 8:33 2007 Quant Results File: FPT30312.RES

Quant Method : D:\HPCHEM\1\METHODS\FPT30312.M (Chemstation Integrator)
Title :
Last Update : Wed Mar 14 11:33:02 2007
Response via : Multiple Level Calibration
DataAcq Meth : FPT30312.M

Volume Inj. : 1
Signal #1 Phase : RTX 5 Signal #2 Phase: RTX CLP II
Signal #1 Info : .25 Signal #2 Info : .25

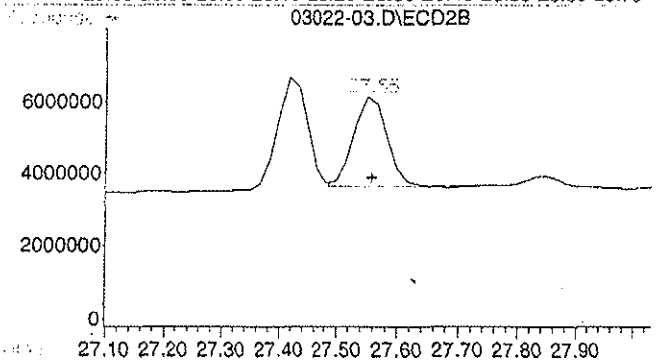






#29 methoxychlor

R.T.: 26.280 min
Delta R.T.: -0.035 min
Response: 3824734
Conc: 1.24 ug/L m



#29 methoxychlor.

R.T.: 27.553 min
Delta R.T.: -0.004 min
Response: 96300156
Conc: 10.90 ug/L m

PCB Aroclors

Form I
Polychlorinated Biphenyls by 8082

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-1**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/14/07	74.4	5.20	1	1	JBS

Parameter	Result
Aroclor 1016	5.2 U
Aroclor 1221	5.2 U
Aroclor 1232	5.2 U
Aroclor 1242	5.2 U
Aroclor 1248	5.2 U
Aroclor 1254	5.2 U
Aroclor 1260	5.2 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	69	30-150
Decachlorobiphenyl	95	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/15/07 13:04

Form I
Polychlorinated Biphenyls by 8082

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-2**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/14/07	56.8	5.60	1	1	JBS

Parameter	Result
Aroclor 1016	6.3 U
Aroclor 1221	6.3 U
Aroclor 1232	6.3 U
Aroclor 1242	6.3 U
Aroclor 1248	6.3 U
Aroclor 1254	6.3 U
Aroclor 1260	6.3 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	69	30-150
Decachlorobiphenyl	95	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/15/07 13:04

Form I
Polychlorinated Biphenyls by 8082

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **SED-3**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
03/05/07	03/06/07	03/09/07	03/14/07	78.8	5.31	1	1	JBS

Parameter	Result
Aroclor 1016	4.8 U
Aroclor 1221	4.8 U
Aroclor 1232	4.8 U
Aroclor 1242	4.8 U
Aroclor 1248	4.8 U
Aroclor 1254	4.8 U
Aroclor 1260	4.8 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	71	30-150
Decachlorobiphenyl	94	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/15/07 13:05

Form I
Polychlorinated Biphenyls by 8082

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Blank**
Case: N/A SDG: N/A
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **PS030907B02**
Associated Blank: **N/A**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Date Analyzed	Percent Solid	Sample Amount (g)	Final Volume (ml)	Dilution Factor	Analyst
N/A	N/A	03/09/07	03/14/07	100	5.00	1	1	JBS

Parameter	Result
Aroclor 1016	4.0 U
Aroclor 1221	4.0 U
Aroclor 1232	4.0 U
Aroclor 1242	4.0 U
Aroclor 1248	4.0 U
Aroclor 1254	4.0 U
Aroclor 1260	4.0 U

Surrogate	% Recovery	Acceptance Range (%)
Tetrachloro-meta-xylene	67	30-150
Decachlorobiphenyl	90	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/15/07 13:04

Form III
Spike Recovery Summary
Polychlorinated Biphenyls by 8082

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Client ID: **Laboratory Control Sample**
Case: **N/A** SDG: **N/A**
Matrix: **Sediment**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Associated Blank: **PS030907B02**
Concentration Units: **µg/Kg**

Date Collected	Date Received	Date Extracted	Percent Solid	Analyst
N/A	N/A	03/09/07	100	JBS

Lab ID:	PS030907B02	PS030907LCS01		PS030907LCSD01				
Parameter	Blank Conc.	LCS Conc.	LCS % Recovery	LCSD Conc.	LCSD % Recovery	% RPD	RPD Limit	% Recovery Limits
Aroclor 1016	4.0 U	160	80	160	82	2	30	40-140
Aroclor 1260	4.0 U	170	84	170	84	0	30	40-140

Surrogate	% Recovery		Acceptance Range (%)
Tetrachloro-meta-xylene	56	60	30-150
Decachlorobiphenyl	91	90	30-150

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded result.

03/15/07 13:07

Supporting Quality Control Results

Form II
Surrogate Recovery
Polychlorinated Biphenyls by 8082

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**

Lab Code: **MA00030**
ETR: **0703022**
Matrix: **Sediment**

Case: N/A SDG: N/A

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

		Column 1		Column 2	
Client ID	Lab ID	TMX	Decachlorobiphenyl	TMX	Decachlorobiphenyl
Blank	PS030907B02	64	83	67	90
LCS	PS030907LCS01	56	82	52	91
LCSD	PS030907LCSD01	60	82	56	90
SED-1	0703022-01	69	86	63	95
SED-2	0703022-02	63	83	69	95
SED-3	0703022-03	64	87	71	94

N/A - Not Applicable

Surrogate	QC Limits
Tetrachloro-meta-xylene (TMX)	30-150
Decachlorobiphenyl	30-150

03/15/07 13:06

Form IV
Method Blank Summary
Polychlorinated Biphenyls by 8082

ALPHA
WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **PS030907B02**
Date Analyzed: **03/14/07 08:51**

Column 1: RTx-5 ID: 0.25 mm Column 2: CLP-II ID: 0.25 mm

Client ID	Lab ID	Date/Time Analyzed
LCS	PS030907LCS01	03/14/07 09:22
LCSD	PS030907LCSD01	03/14/07 09:53
SED-1	0703022-01	03/14/07 10:25
SED-2	0703022-02	03/14/07 10:56
SED-3	0703022-03	03/14/07 11:28

N/A - Not Applicable

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51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

 0703022

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630

Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Sediment Sampling PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Type Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Total Metals (1)	VOCs (2)	ABN Extractable Compounds (3)	PCB's & Pesticides (4)	Comments:
-1	SED-1	3/5/07	1330	6	2		1					X		X	X	X	X	X	
-2	SED-2	↓	1100	6	2		1					X		X	X	X	X	X	
-3	SED-3	↓	1200	6	2		1					X		X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day RUSH
- ☐ 4 Day RUSH
- ☐ 3 Day RUSH
- ☐ 2 Day RUSH
- ☐ 1 Day RUSH

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Analytical Information

(1) Total Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na

(2) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(3) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (Including PAH's)

(4) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	3/5/07 1600	[signature]	3-5-07
Relinquished by Sampler: 2 [signature]	3/5/07 1700	Received By: 2 [signature]	3-5-07 1700
Relinquished by Sampler: 3 [signature]	Date Time:	Received By: [signature] 3/6/07 0900	Date Time:
[signature] 3/6/07 1115		[signature] 3/6/07 1115	

Bottles ☐ Preserve where applicable ☐ On Ice ☐ Temp.

Sample Receipt Checklist

Client: SEACON	Receipt Date: 3/6/07		
Project: Hamilton LF	Log-in Date:		
ETR #: 0703022	Inspection by:	Login by:	

ALL SECTIONS BELOW MUST BE COMPLETED

Were samples shipped? Yes, FedEx / UPS / Other:_____
No, WHG Courier pick-up / Hand delivered

Is bill of lading retained? Yes, Tracking #:_____
No, Unavailable / NA

Number of coolers received for this project delivery: 1

Indicate cooler temperature upon opening (if multiple coolers, record all temps):

Note: If all coolers are 2-6°C, use one checklist, if NOT, use separate checklists and note all samples received *above* 6°C.

Cooler 1:
Temperature(s) taken from: 2° IR Gun, 3° Temp. Blank, / NA

Were samples received on ice? Yes / No

Chain-of-Custody present? Yes / No
Complete? Yes / No

Custody seals present on Cooler? Yes / No
on Bottles? Yes / No
Intact? Yes / No / NA
Note: Affix custody seals to back of this page.

Were sample containers intact? Yes / No If No, list samples: →

Did VOA/VPH waters contain headspace (>5mm)? Yes / No / NA If Yes, list samples: →

Were 5035 VOA soils, or VPH soils, *covered* with MeOH? Yes / No / NA
If No, list samples: →

Was a sufficient amount of sample received for each test indicated on the COC?
Yes / No If No, list samples: →

If chemical preservation is appropriate -
Were samples field preserved? Yes / No / NA

☐ C=HCl ☐ M=MeOH ☐ S=H_2SO4
☐ H=NaOH ☐ N=HNO_3 ☐ Other:_____ ☐ U= Unknown

Preservation (pH) verified at lab for *EVERY* bottle? (Not: VOA / VPH / Sulfide)
YES: <2 or >12 (CN) or NO NA
If No, why?:

Were samples received within hold time? Yes / No If No, list samples: →

Discrepancy between samples rec'd & COC ? Yes / No If Yes, list samples: →

Was the Project Manager notified of any other problems? Yes / No / NA

Project Manager Acknowledgement: Date:

Comments / Notes

Sample storage refrigerator #: D3/VOA

Sample storage freezer #:_____

Cooler 2:_____ Cooler 3:_____

Cooler 4:_____ Cooler 5:_____

Cooler 6:_____ Cooler 7:_____

More:_____

Chemical preservation OK for ALL samples?

Yes / No / N/A

If No, list samples below:

Please use back for any additional notes!

TOTAL METALS

Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Arsenic	**0.97**		0.11	5	03/20/07	03/15/07	6020A	LMR
Barium	**8.6**		0.11	5	03/20/07	03/15/07	6020A	LMR
Cadmium	**0.12**		0.044	5	03/20/07	03/15/07	6020A	LMR
Calcium	**920**		44	5	03/20/07	03/15/07	6020A	LMR
Chromium	**13**		1.1	5	03/20/07	03/15/07	6020A	LMR
Copper	**8.8**		0.11	5	03/20/07	03/15/07	6020A	LMR
Iron	**8100**		22	5	03/20/07	03/15/07	6020A	LMR
Lead	**6.0**		0.11	5	03/20/07	03/15/07	6020A	LMR
Manganese	**130**		0.44	5	03/20/07	03/15/07	6020A	LMR
Mercury	**0.014**		0.0066	1	03/16/07	03/15/07	7471A	EYC
Selenium	0.44	U	0.44	5	03/20/07	03/15/07	6020A	LMR
Silver	0.043	U	0.043	5	03/19/07	03/15/07	6020A	LMR
Sodium	**31**		11	5	03/20/07	03/15/07	6020A	LMR
Zinc	**36**		2.2	5	03/20/07	03/15/07	6020A	LMR

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-2**
Matrix: **Sediment**
Percent Solid: **56.8**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-02**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Arsenic	**40**		0.13	5	03/20/07	03/15/07	6020A	LMR
Barium	**23**		0.13	5	03/20/07	03/15/07	6020A	LMR
Cadmium	**0.26**		0.052	5	03/20/07	03/15/07	6020A	LMR
Calcium	**1300**		52	5	03/20/07	03/15/07	6020A	LMR
Chromium	**10**		1.3	5	03/20/07	03/15/07	6020A	LMR
Copper	**10**		0.13	5	03/20/07	03/15/07	6020A	LMR
Iron	**24000**		260	50	03/20/07	03/15/07	6020A	LMR
Lead	**33**		0.13	5	03/20/07	03/15/07	6020A	LMR
Manganese	**210**		0.52	5	03/20/07	03/15/07	6020A	LMR
Mercury	**0.025**		0.0079	1	03/16/07	03/15/07	7471A	EYC
Selenium	0.52	U	0.52	5	03/20/07	03/15/07	6020A	LMR
Silver	0.052	U	0.052	5	03/19/07	03/15/07	6020A	LMR
Sodium	**88**		13	5	03/20/07	03/15/07	6020A	LMR
Zinc	**54**		2.6	5	03/20/07	03/15/07	6020A	LMR

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

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Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-3**
Matrix: **Sediment**
Percent Solid: **78.8**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-03**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Arsenic	**6.2**		0.10	5	03/20/07	03/15/07	6020A	LMR
Barium	**34**		0.10	5	03/20/07	03/15/07	6020A	LMR
Cadmium	**0.10**		0.041	5	03/20/07	03/15/07	6020A	LMR
Calcium	**1700**		41	5	03/20/07	03/15/07	6020A	LMR
Chromium	**12**		1.0	5	03/20/07	03/15/07	6020A	LMR
Copper	**16**		0.10	5	03/20/07	03/15/07	6020A	LMR
Iron	**17000**		200	50	03/20/07	03/15/07	6020A	LMR
Lead	**8.6**		0.10	5	03/20/07	03/15/07	6020A	LMR
Manganese	**310**		0.41	5	03/20/07	03/15/07	6020A	LMR
Mercury	**0.0088**		0.0056	1	03/16/07	03/15/07	7471A	EYC
Selenium	0.41	U	0.41	5	03/20/07	03/15/07	6020A	LMR
Silver	0.039	U	0.039	5	03/19/07	03/15/07	6020A	LMR
Sodium	**60**		10	5	03/20/07	03/15/07	6020A	LMR
Zinc	**54**		2.0	5	03/20/07	03/15/07	6020A	LMR

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807B02B**
Concentration Units: **mg/Kg**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Arsenic	0.12	U	0.12	5	03/20/07	03/15/07	6020A	LMR
Barium	0.12	U	0.12	5	03/20/07	03/15/07	6020A	LMR
Cadmium	0.050	U	0.050	5	03/20/07	03/15/07	6020A	LMR
Calcium	50	U	50	5	03/20/07	03/15/07	6020A	LMR
Chromium	1.2	U	1.2	5	03/20/07	03/15/07	6020A	LMR
Copper	0.12	U	0.12	5	03/20/07	03/15/07	6020A	LMR
Iron	25	U	25	5	03/20/07	03/15/07	6020A	LMR
Lead	0.12	U	0.12	5	03/20/07	03/15/07	6020A	LMR
Manganese	0.50	U	0.50	5	03/20/07	03/15/07	6020A	LMR
Selenium	0.50	U	0.50	5	03/20/07	03/15/07	6020A	LMR
Sodium	12	U	12	5	03/20/07	03/15/07	6020A	LMR
Zinc	2.5	U	2.5	5	03/20/07	03/15/07	6020A	LMR

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/20/07 13:14

Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807B01B**
Concentration Units: **mg/Kg**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Silver	0.050	U	0.050	5	03/19/07	03/15/07	6020A	LMR

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/20/07 13:17

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form I
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Blank**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807B03B**
Concentration Units: **mg/Kg**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Result	Qualifier	Reporting Limit	Dilution	Date Analyzed	Date Prepared	Analytical Method	Analyst
Mercury	0.010	U	0.010	1	03/16/07	03/15/07	7471A	EYC

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

03/20/07 13:18

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VII
Laboratory Control Sample - High
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Lab Control Sample High**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807SLH02SLH**
Concentration Units: **mg/Kg**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Conc.	% Recovery	% Recovery Limits
Arsenic	190	97	80-120
Barium	190	93	80-120
Cadmium	100	100	80-120
Calcium	1000	100	80-120
Chromium	200	101	80-120
Copper	190	93	80-120
Iron	1100	106	80-120
Lead	200	99	80-120
Manganese	200	98	80-120
Selenium	200	102	80-120
Sodium	970	97	80-120
Zinc	190	97	80-120

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VII
Laboratory Control Sample - Low
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Lab Control Sample Low**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807SLL01SLL**
Concentration Units: **mg/Kg**
Date Collected: **N/A**
Date Received: **N/A**

Parameter	Conc.	% Recovery	% Recovery Limits
Silver	1.9	95	80-120

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

03/20/07 13:17

Form VII
Laboratory Control Sample
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **Laboratory Control Sample**
Matrix: **Sediment**
Percent Solid: **100.0**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **MS030807SLC01SLC**
Concentration Units: **mg/Kg**
Date Collected: N/A
Date Received: N/A

Parameter	Conc.	% Recovery	% Recovery Limits
Mercury	0.49	99	80-120

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

03/20/07 13:18

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VA
Matrix Spike Sample Recovery
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Lab ID:	0703022-01		0703022-01		
Parameter	**Spiked Conc.**	**Sample Conc.**	**Matrix Spike Conc.**	**Matrix Spike % Recovery**	**% Recovery Limits**
Arsenic	174	0.97	170	96	75-125
Barium	174	8.6	160	86	75-125
Cadmium	87	0.12	85	98	75-125
Calcium	868	920	1500	69N	75-125
Chromium	174	13	190	99	75-125
Copper	174	8.8	160	89	75-125
Iron	868	8100	9400	150C	75-125
Lead	174	6.0	160	89	75-125
Manganese	174	130	320	107	75-125
Selenium	174	0.44 U	180	102	75-125
Sodium	868	31	740	81	75-125
Zinc	174	36	200	95	75-125

N/A - Not Applicable
C - Sample concentration is > 4 times the spike level, recovery limits do not apply.
N - Spike recovery outside control limits.
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VA
Matrix Spike Sample Recovery
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Lab ID:		0703022-01		0703022-01	
Parameter	**Spiked Conc.**	**Sample Conc.**	**Matrix Spike Conc.**	**Matrix Spike % Recovery**	**% Recovery Limits**
Silver	1.7	0.043 U	1.6	96	75-125

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VA
Matrix Spike Sample Recovery
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **See Below**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Lab ID:	0703022-01		0703022-01		
Parameter	**Spiked Conc.**	**Sample Conc.**	**Matrix Spike Conc.**	**Matrix Spike % Recovery**	**% Recovery Limits**
Mercury	0.33	0.014	0.30	87	80-120

N/A - Not Applicable

Concentrations reported as calculated values, which includes rounding for significant figures. Percent recoveries and RPD values are calculated from the unrounded results.

375 Paramount Drive, Suite 2, Raynham, Massachusetts 02767, (508) 822-9300, Fax (508) 822-3288

Form VI
Duplicates
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01D**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Parameter	Sample Result	Duplicate Result	Percent RPD	Percent Limit
Arsenic	0.97	0.85	14	20
Barium	8.6	9.0	5	20
Cadmium	0.12	0.10	15	20
Calcium	920	870	6	20
Chromium	13	13	2	20
Copper	8.8	8.3	6	20
Iron	8100	7800	5	20
Lead	6.0	5.6	9	20
Manganese	130	110	13	20
Mercury	0.014	0.0091	39§	20
Selenium	0.44 U	0.43 U	N/A	20
Silver	0.043 U	0.047	X	20
Sodium	31	26	21§	20
Zinc	36	33	10	20

N/A - Not Applicable
§ - RPD criteria not applicable to results less than 5 times the reporting limit.
U - The analyte was analyzed for but not detected at the sample specific level reported.
X - It is not possible to calculate RPD, one result is below the detection limit, the other is above reporting limit.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

03/20/07 13:09

Form VIII
ICP-AES and ICP-MS Serial Dilutions
Total Metals

ALPHA WOODS HOLE LABS

Client: **SEA Consultants, Inc.**
Project: **Hamilton Sanitary Landfill**
Case: N/A SDG: N/A
Client ID: **SED-1**
Matrix: **Sediment**
Percent Solid: **74.4**

Lab Code: **MA00030**
ETR: **0703022**
Lab ID: **0703022-01SD**
Concentration Units: **mg/Kg**
Date Collected: **03/05/07**
Date Received: **03/06/07**

Parameter	Sample Result	Duplicate Result	Percent Difference	Limit
Arsenic	0.97	0.88	10	10
Barium	8.6	8.6	0	10
Cadmium	0.12	0.22 U	X	10
Calcium	920	900	3	10
Chromium	13	12	6	10
Copper	8.8	8.6	2	10
Iron	8100	7700	5	10
Lead	6.0	5.8	4	10
Manganese	130	120	5	10
Mercury	0.014	0.033 U	X	10
Selenium	0.44 U	2.2 U	N/A	10
Silver	0.043 U	0.22 U	N/A	10
Sodium	31	55 U	X	10
Zinc	36	36	1	10

N/A - Not Applicable
U - The analyte was analyzed for but not detected at the sample specific level reported.
X - It is not possible to calculate RPD, one result is below the detection limit, the other is above reporting limit.

Concentrations reported as calculated values, which includes rounding for significant figures. RPD values are reported based on the unrounded calculated result.

03/20/07 13:09

0703022

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

Chain 2 of 2

last revised by AV 2/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Sediment Sampling PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Alex.Dubanowitz@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type: Glass	Plastic	VOA's	Preservation: HCL	NaOH	HNO3	H2So4	MEOH	Other	None	Total Metals (1)	VOCs (2)	ABN Extractable Compounds (3)	PCB's & Pesticides (4)	Comments:
-1 SED-1	3/5/07	1330	6	2		1					X		X	X	X	X	X	
-2 SED-2	↓	1100	6	2		1					X		X	X	X	X	X	
-3 SED-3	↓	1200	6	2		1					X		X	X	X	X	X	

Turnaround Information

- [ ] Std. 10 Day Turnaround
- [ ] 7 Day RUSH
- [ ] 4 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Additional Information

(1) Total Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na

(2) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(3) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (including PAH's)

(4) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler	Date Time	Received By	Date Time
1 [signature]	3/5/07 1600	1 [signature]	3-5-07 [signature]
2 [signature]	3/5/07 1700	2 [signature]	3-5-07 1700
3 [signature]		3 [signature] 3/6/07 0700	

Preserve where applicable ☐ ☐ ☐ On Ice ☐ Temp.

[signature] 3/6/07 1115 X [signature] 3/6/07 1115

Sample Receipt Checklist

Client: SEACON	Receipt Date: 3/6/07		
Project: Hamilton LF	Log-in Date:		
ETR #: 0703022	Inspection by:	Login by:	

ALL SECTIONS BELOW MUST BE COMPLETED

Comments / Notes

Were samples shipped? Yes, FedEx / UPS / Other:_____
No, WHG Courier pick-up / Hand delivered

Is bill of lading retained? Yes, Tracking #:_____
No, Unavailable / NA

Number of coolers received for this project delivery: 1

Indicate cooler temperature upon opening (if multiple coolers, record all temps):

Note: If all coolers are 2-6°C, use one checklist, if NOT, use separate checklists and note all samples received *above* 6°C.

Cooler 1:
Temperature(s) taken from: 2° IR Gun, 3° Temp. Blank, / NA

Were samples received on ice? Yes / No

Chain-of-Custody present? Yes / No
Complete? Yes / No

Custody seals present on Cooler? Yes / No
on Bottles? Yes / No
Intact? Yes / No / NA
Note: Affix custody seals to back of this page.

Were sample containers intact? Yes / No If No, list samples: →

Did VOA/VPH waters contain headspace (>5mm)? Yes / No / NA If Yes, list samples: →

Were 5035 VOA soils, or VPH soils, *covered* with MeOH? Yes / No / NA
If No, list samples: →

Was a sufficient amount of sample received for each test indicated on the COC?
Yes / No If No, list samples: →

If chemical preservation is appropriate -
Were samples field preserved? Yes / No / NA

☐ C=HCl ☐ M=MeOH ☐ S=H_2SO4
☐ H=NaOH ☐ N=HNO_3 ☐ Other:_____ ☐ U= Unknown

Preservation (pH) verified at lab for *EVERY* bottle? (Not: VOA / VPH / Sulfide)
YES: <2 or >12 (CN) or NO NA
If No, why?:

Were samples received within hold time? Yes / No If No, list samples: →

Discrepancy between samples rec'd & COC? Yes / No If Yes, list samples: →

Was the Project Manager notified of any other problems? Yes / No / NA

Project Manager Acknowledgement: Date:

Sample storage refrigerator #: D3/VOA

Sample storage freezer #:_____

Cooler 2:_____ Cooler 3:_____

Cooler 4:_____ Cooler 5:_____

Cooler 6:_____ Cooler 7:_____

More:_____

Chemical preservation OK for ALL samples?

Yes / No / N/A

If No, list samples below:

Please use back for any additional notes!

Alpha Woods Hole Labs
Raynham, Massachusetts

Certificate/Approval Program Summary

Method numbers assume the most recent EPA revisions. For a complete listing of analytes for the referenced methods please contact your Alpha Woods Hole Lab Project Manager or the Quality Assurance Manager.

Connecticut Department of Public Health Certificate/Lab ID : PH-0141 - *Wastewater* (General Chemistry: EPA 120.1, 150.1, 160.1, 160.2, 180.1, 300.0, 310.1, 335.2, 365.2; Metals: 200.8, 245.1; Organics: 608, 624, 625, ETPH) *Solid Waste/Soil* (General Chemistry: 1010, 9010/9014, 9045, 9060; Metals: 6020, 7470, 7471; Organics: 8081, 8082, 8260, 8270, ETPH).

Florida Department of Health Certificate/Lab ID : E87814 - Primary NELAP Accreditation Authority for Air & Emissions. Secondary NELAP Accreditation for Wastwater and Solid & Hazardous Waste. *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 180.1, 300.0, 335.2, 365.2, SM2320B, SM2340B, SM2540G, SM4500NH3; Metals: 245.1; Organics: 608, 624, 625). *Solid and Hazardous Waste* (General Chemistry: 9010/9014, 9045, 9050, 9056, 9065, Reactivity 7.3; Metals: 6020, 7470, 7471; Organics: 8081, 8082, 8260, 8270). *Air & Emissions* (Organics: EPA TO-15).

Louisiana Department of Environmental Quality Certificate/Lab ID : 03090 - Primary NELAP Accrediting Authority for Wastewater, Solid & Hazardous Waste. *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 180.1, 300.0, 310.1/SM2320B, 335.2, 365.2, 376.2, 9010/9014, 9056, SM2540G; Metals: 200.8, 245.1, 6020; Organics: 608, 624, 625, 8015-DRO/GRO, 8081, 8082, 8260, 8270). *Solid and Hazardous Waste* (General Chemistry: 1010, 1311, 9010/9014, 9040, 9045, 9056, 9060, Reactivity 7.3; Metals: 6020, 7196, 7470, 7471; Organics: 8015-DRO/GRO, 8081, 8082, 8260, 8270).

Maine Department of Human Services Certificate/Lab ID : MA0030 - *Wastewater* (General Chemistry: EPA 120.1/ SM2510B, 160.1/SM2540C, 160.2/SM2540D, 300.0, 310.1/SM2320B, 335.2, 365.2; Metals: EPA 245.1; Organics: 608, 624)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA030 - *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 300.0, 310.1/SM2320B, 335.2, 365.2; Metals: EPA 245.1; Organics: EPA 608, 624).

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206 - Secondary NELAP Accreditation. *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 180.1, 300.0, 310.1/SM2320B, 335.2, 365.2, 376.2, SM2540G; Metals: 200.8, 245.4; Organics: 608, 624, 625).

New Jersey Department of Environmental Protection Certificate/Lab ID : MA015 - Secondary NELAP Accreditation. *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 180.1, 300.0, 310.1/SM2320B, 335.2, 376.2, 9010/9014, 9056, SM2540G; Metals: 200.8, 245.1 6020; Organics: 608, 624, 625, 8081, 8082, 8260, 8270). *Solid & Hazardous Waste* (General Chemistry: EPA 1010, 1311, 9010/9014, 9040, 9045, 9056, 9060; Metals: 6020, 7196, 7470, 7471; Organics: 8015-DRO/GRO, 8081, 8082, 8260, 8270). *Air & Emissions* (Organics: EPA TO-15).

New York Department of Health Certificate/Lab ID : 11627 - Secondary NELAP Accreditation. *Wastewater* (General Chemistry: EPA 120.1/SM2510B, 150.1, 160.1/SM2540C, 160.2/SM2540D, 300.0, 310.1/SM2320B, 365.2, 376.2; Metals: 245.1; Organics: 608, 624, 625). *Solid and Hazardous Waste* (General Chemistry: EPA 1010, 1311; : 245.1; 6020, 7041; Organics: 8081, 8082, 8260, 8270). *Air & Emissions* (Organics: EPA TO-15).

Rhode Island Department of Health Certificate/Lab ID : LAO00289 - Chemistry: *Organic and Inorganic in Non-Poratable Water, Wastewater/Sewage and Soil* (Refer to LADEQ and MADEP certificates for method numbers.)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-02089 - Registered laboratory

U.S. Army Corps of Engineers

Department of the Navy

Round 2 – September 6, 2007

Water Quality Results

S E A

S E A CONSULTANTS INC.
Scientists/Engineers/Architects

September 6, 2007

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

Re: Comprehensive Site Assessment (CSA)
Water Quality and Sediment Monitoring Results (Round 2 of 4)
Hamilton Sanitary Landfill
S E A Ref. No. 2006054.05

Dear Mr. Carrigan:

Enclosed are the laboratory analytical results for the second round of Comprehensive Site Assessment (CSA) water quality monitoring performed at the Hamilton Sanitary Landfill. The sampling activities were performed on July 5, 2007 and were completed in accordance with S E A's May 19, 2006 CSA Scope of Work, as approved by DEP in its letter dated September 13, 2006.

The water quality monitoring network consists of eight groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4S/4D, MW-5, and MW-6S/6D). Refer to the attached Figure 1 for sampling locations. The water quality samples were collected by Environmental Sampling Technology (EST) of Needham, Massachusetts and were analyzed by Alpha Analytical Laboratories of Westborough, Massachusetts. The groundwater monitoring program for the Round 2 event is summarized on the attached Table 1. As noted on Table 1, low flow sampling procedures were followed when collecting samples from the monitoring well network.

Groundwater depth and total well depth were measured from seven of the eight wells installed in connection with the Hamilton Landfill CSA (MW-2 was dry and could not be sampled), as well as from additional wells that comprise a portion of the Town of Manchester's landfill monitoring well network. Water level measurements from the Manchester wells were included in the Round 2 monitoring event in response to the DEP's conditional approval of the Hamilton CSA Scope of Work. The DEP requested that the Manchester wells be gauged to provide additional data points for mapping groundwater contours in connection with the Hamilton CSA. A discussion of the water level measurements and specific wells gauged from the Manchester network is provided in the following summary of Round 2 CSA monitoring results.

CSA Monitoring Results

Table 2 summarizes the groundwater analytical results and compares the results to the Massachusetts drinking water standards (MMCLs and SMCLs), as well as to the Massachusetts Contingency Plan (MCP) RCGW-1 reporting thresholds provided in Section 310 CMR 40.1600 of the MCP. The results of the monitoring round are highlighted below.

Groundwater Monitoring Results (See Table 2)

- Groundwater monitoring well MW-2 was dry and therefore could not be sampled.

- Dissolved arsenic was detected at a concentration of 0.024 mg/l at MW-4D, which exceeds the Massachusetts Contingency Plan (MCP) RCGW-1 reporting threshold and the Massachusetts

DEP Maximum Contaminant Level (MMCL) of 0.01 mg/l. Dissolved arsenic was not detected at any of the other monitoring well locations.

- Dissolved iron and manganese concentrations were detected in excess of their respective Massachusetts DEP Secondary Maximum Contaminant Levels (SMCLs) of 0.3 mg/l and 0.05 mg/l at monitoring wells MW-1, MW-3, MW-4D, MW-5, MW-6S and MW-6D. SMCLs are non-enforceable standards that were developed to protect the aesthetic quality of drinking water.

- Dissolved sodium concentrations were detected in excess of the Office of Research and Standards Guidelines (ORSG) level of 20 mg/l at monitoring well MW-5. No MMCL, SMCL, or RCGW-l standards exist of dissolved sodium.

- No Volatile Organic Compounds (VOCs) were detected in excess of the Massachusetts drinking water standards or RCGW-1 reporting thresholds at the monitoring well locations.

Water Level Measurements (See Table 3)

Water level elevations were collected from seven of the eight Hamilton groundwater monitoring wells and three on-site piezometer locations. In addition, water level measurements were also collected from three shallow groundwater monitoring wells belonging to the Town of Manchester. As coordinated with DEP, Hamilton received approval from the Town of Manchester to collect water level measurements from Manchester's shallow groundwater monitoring wells located near the Manchester landfill and on the westerly side of Chebacco Road. The specific Manchester wells from which water level measurements were sought in connection with the Hamilton CSA were MW-1S, MW-2S, MW-5S, MW-6S, HWH-12, HWH-13, and HWH-14 (refer to figure 2 for well locations). Wells MW-5S, HWH-12, HWH-13, and HWH-14 could not be located during the Round 2 monitoring event, therefore, well gauging from the Manchester wells was limited to MW-1S, MW-2S, and MW-6S. To distinguish these and other Manchester wells from the Hamilton CSA well network, the Manchester wells will be labeled with a "manch" subscript (i.e. water level measurements were obtained from wells MW-$1S_{manch}$, MW-$2S_{manch}$, and MW-$6S_{manch}$). S E A will visit the site prior to the next round of CSA water quality monitoring in an effort to confirm the presence of the HWH series of wells (these wells may have been removed) and to locate well MW-$5S_{manch}$.

Water level measurements collected during the Round 2 monitoring event are summarized in Table 3. The Hamilton wells and piezometers have not yet been surveyed, therefore only water level depths, measured from top-of-casings, can be provided at this time and this information is summarized in Table 3. Prior to the completion of the CSA field investigations, the wells and piezometers will be surveyed to a common vertical datum (USGS), which will allow us to prepare groundwater contour maps that will be presented in the CSA Report.

The third round of CSA water quality monitoring is scheduled to be completed in October of 2007. The Round 3 monitoring program is summarized in Tables 4 and 5. As noted in Tables 4 and 5, surface water and sediment monitoring will be performed during the next round as coordinated with DEP following S E A's receipt of the Department's September 13, 2006 CSA Scope of Work approval letter. Consistent with the DEP-approved Scope of Work, extended parameters analysis will also be performed during Round 3 (the Round 3 monitoring locations and parameters will be identical to Round 1).

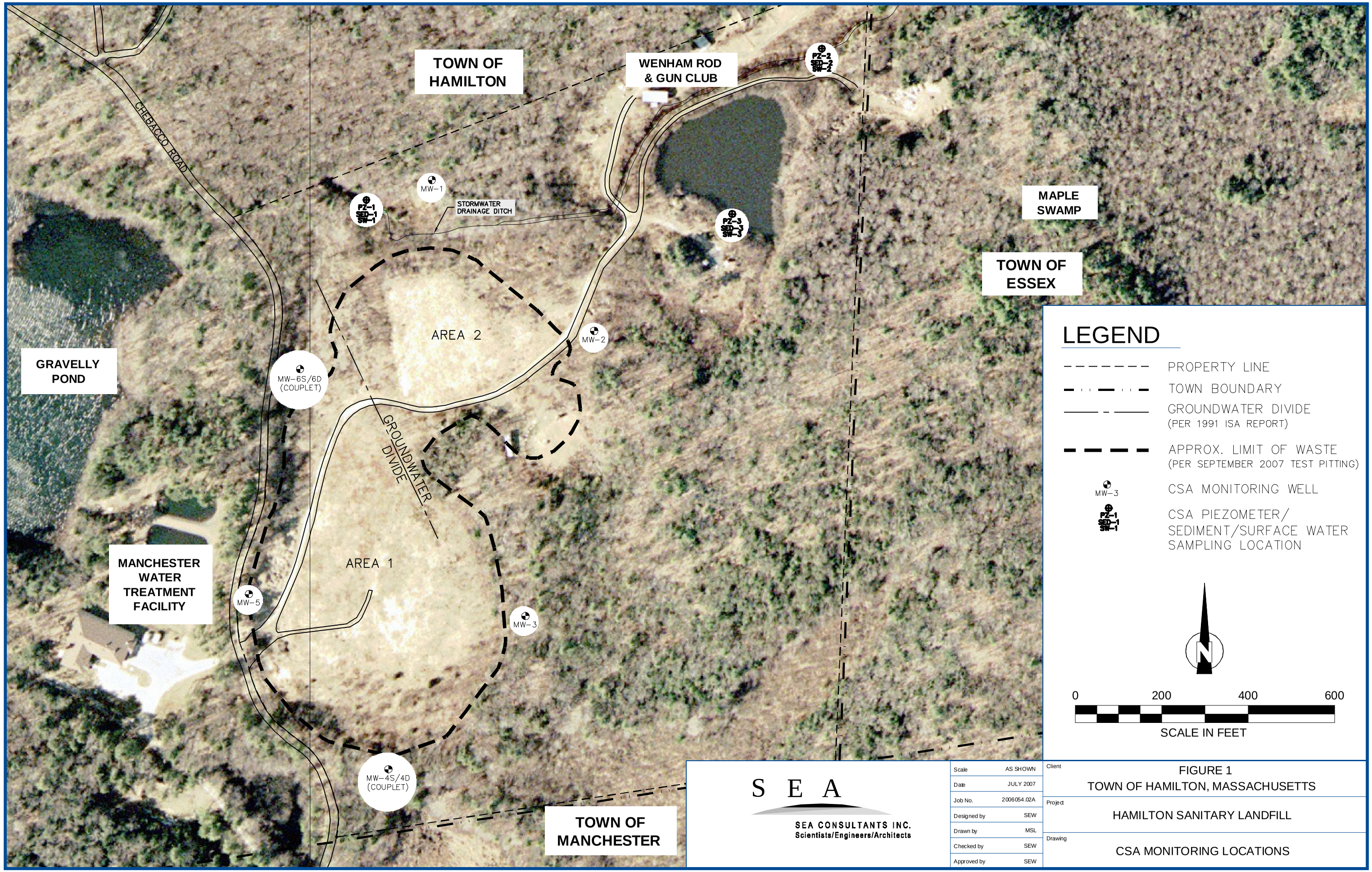
If you have any questions regarding the CSA monitoring program or enclosed monitoring results, please call me at (617) 498-4624.

Very truly yours,

S E A CONSULTANTS INC.

Stephen E. Wright, P.E.
Attachments
I:_clients\Hamilton MA\2006054.05 - CSA Monitoring\reports\Water Quality_7-07.doc

cc: Mr. Steven Kenney, Hamilton Department of Public Works
Michael Looney, S E A Consultants, Inc. (w/attachments)



SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Scale	AS SHOWN
Date	JULY 2007
Job No.	2006054.02A
Designed by	SEW
Drawn by	MSL
Checked by	SEW
Approved by	SEW

Client: FIGURE 1
TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON SANITARY LANDFILL

Drawing: CSA MONITORING LOCATIONS

FILENAME= G:_clients\Hamilton MA\2006054 - Hamilton Landfill\general\CSA-Water Quality.dwg

LEGEND

- PROPERTY LINE
- TOWN BOUNDARY
- APPROX. LIMIT OF WASTE
- MW-8 — HAMILTON LF GROUNDWATER MONITORING WELL INSTALLED 2006
- MW-5 MANCH — MANCHESTER GROUNDWATER MONITORING WELL

MANCHESTER WELLS WHERE WATER LEVELS ARE PROPOSED TO BE TAKEN FOR HAMILTON CSA

WELL ID	DATE INSTALLED	SCREEN INTERVAL (FBGS)	ELEVATION (TOP OF RISER) (FEET MSL)
MW-1S	1994	9.2-13.8	66.10
MW-2S	1994	15.2-24.8	67.15
MW-5S	1994	5.2-9.8	68.06
MW--6S	3/98	3-13*	TBC
HWH-12	1991	12-22	CNL
HWH-13	1991	15-25	CNL
HWH-14	1991	10-20	CNL

NOTES:

1. FBGS: = FEET BELOW GROUND SURFACE
2. TBC = TO BE CONFIRMED
3. CNL = COULD NOT LOCATE
4. * ASSUMES 2 FOOT RISER ABOVE GROUND SURFACE (TO BE CONFIRMED)
5. HWH MONITORING WELL CONSTRUCTION DATA PROVIDED IN DECEMBER 1991 HAMILTON ISA REPORT. ALL OTHER MANCHESTER WELL CONSTRUCTION DATA (WITH THE EXCEPTION OF MW-6S/6B) IS PROVIDED IN THE JANUARY 1996 MANCHESTER CSA REPORT.

0 300 600 900
SCALE IN FEET

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Scale	AS SHOWN
Date	JANUARY 2007
Job No.	2006054.02A
Designed by	SEW
Drawn by	MSL
Checked by	SEW
Approved by	SEW

Client: FIGURE 2
TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON LANDFILL CSA

Drawing: MANCHESTER WELL GAUGING LOCATIONS

PLOT DATE= 9/13/2007 2:06:31 PM USER=JESSICA ORMSBY FILENAME= G:_clients\Hamilton MA\2006054 - Hamilton Landfill\general\Depth to Groundwater wells.dwg

TABLE 1
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program

ROUND 2

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	**Not Applicable for Rounds 2 & 4**
		PCBs and Pesticides	**Not Applicable for Rounds 2 & 4**

NOTES:

1. Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.
2. The next (final) round of CSA surface water and sediment monitoring is scheduled to be performed during the Round 3 monitoring event.

Table 2
Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill

LOCATION	WATER QUALITY				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE	STANDARDS GUIDELINES				05-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	06-MAR-07	05-MAR-07	06-MAR-07	06-MAR-07
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0703070-01	L0703115-01	L0703115-02	L0703115-03	L0703115-04	L0703070-02	L0703115-05	L0703115-06
Alkalinity, Total				mg CaCO3/L	30		62	2.1	200	280	44	76
Solids, Total Dissolved			500	mg/l	140		91	47	250	360	240	230
Cyanide, Total	0.2	0.03		mg/l	< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Chloride			250	mg/l	19		6	6.4	20	48	32	43
Nitrogen, Nitrate	10			mg/l	< 0.1		0.17	0.1	< 0.1	1.7	0.27	< 0.1
Sulfate			250	mg/l	38		12	< 10	< 10	< 10	69	34
Chemical Oxygen Demand				mg/l	30		< 20	< 20	32	30	< 20	20
Dissolved Metals by MCP 6000/7000 series						D						
Arsenic, Dissolved	0.01	0.01		mg/l	< 0.005		< 0.005	< 0.005	0.024	< 0.005	< 0.005	< 0.005
Barium, Dissolved	2	2		mg/l	0.018		0.062	0.026	0.043	0.32	0.038	0.029
Cadmium, Dissolved	0.005	0.004		mg/l	< 0.004	R	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
Calcium, Dissolved				mg/l	6.8		15	1.2	36	73	34	25
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	12	Y	2	0.11	25	1.4	2.7	9.6
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	0.645		5.87	0.021	1.24	1.04	0.536	3.88
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	< 0.0005		< 0.007	< 0.007	< 0.007	< 0.0005	< 0.007	< 0.007
Sodium, Dissolved	20*			mg/l	14		5	4.2	19	43	15	20
Zinc, Dissolved	.	0.9	5	mg/l	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	0.116	< 0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)												
Chlorobenzene	0.1	0.1		mg/l	< 0.0005		0.0034	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Ethyl ether		1		mg/l	< 0.0025		< 0.0025	< 0.0025	0.0057	0.0044	< 0.0025	< 0.0025
Methyl tert butyl ether		0.07		mg/l	< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.0021

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 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 on Office of Research and Standards Guidelines (ORSG).

Table 3
Summary of Water Level Measurements
Hamilton Sanitary Landfill

OWNER	LOCATION	SCREEN DEPTH (Feet below ground surface)	WATER LEVELS			
			CSA ROUND 1 5-Mar-07		CSA ROUND 2 5-Jul-07	
MONITORING WELLS						
HAMILTON	MW-1	5 - 15	4.38		5.07	
	MW-2	2 - 7	8.34		DRY	
	MW-3	5 - 15	6.38		7.87	
	MW-4S	2 - 12	5.93		6.75	
	MW-4D	27 - 37	6.07		6.71	
	MW-5	7 - 17	12.16		12.88	
	MW-6S	17 - 27	19.45		21.22	
	MW-6D	39 - 44	18.83		20.02	
MANCHESTER	$MW\text{-}1S_{manch}$	9.2 - 13.8	Not Gauged		3.09	
	$MW\text{-}2S_{manch}$	15.2 - 24.8	Not Gauged		3.96	
	$MW\text{-}6S_{manch}$	3 - 13 (approx - to be confirmed)	Not Guaged		5.1	
PIEZOMETERS						
HAMILTON			WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)
	PZ-1		1.81	1.85	2.79	--
	PZ-2		2.06	2.21	2.21	2.46
	PZ-3		2.06	2.09	2.30	2.28

Notes:

1. Groundwater levels at the monitoring wells were measured from the top of PVC riser.
2. Water depths were measured from the top of the piezometer drive pipe (cap off) from both inside and outside the casing at the three piezometers locations.

ok.

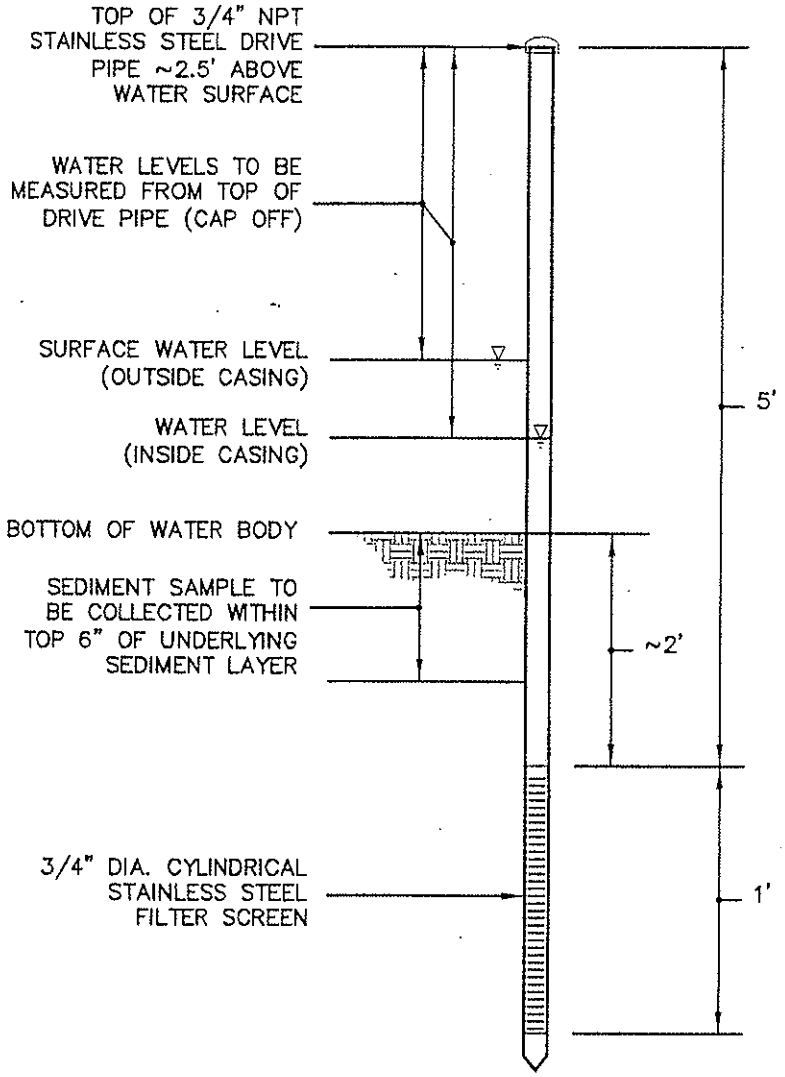
TABLE 4
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program
ROUND 3 - Scheduled for October 2007

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D SW-1, SW-2, SW-3	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080

NOTE: Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.

TABLE 5
Hamilton Sanitary Landfill
Comprehensive Site Assessment Sediment Monitoring
ROUND 3 - Scheduled for October 2007

Monitoring Points	Analytical Category		Description
SED-1, SED-2, SED-3	*Standard Parameters per 310 CMR 19.132*	Total Metals	Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080



NOTES:

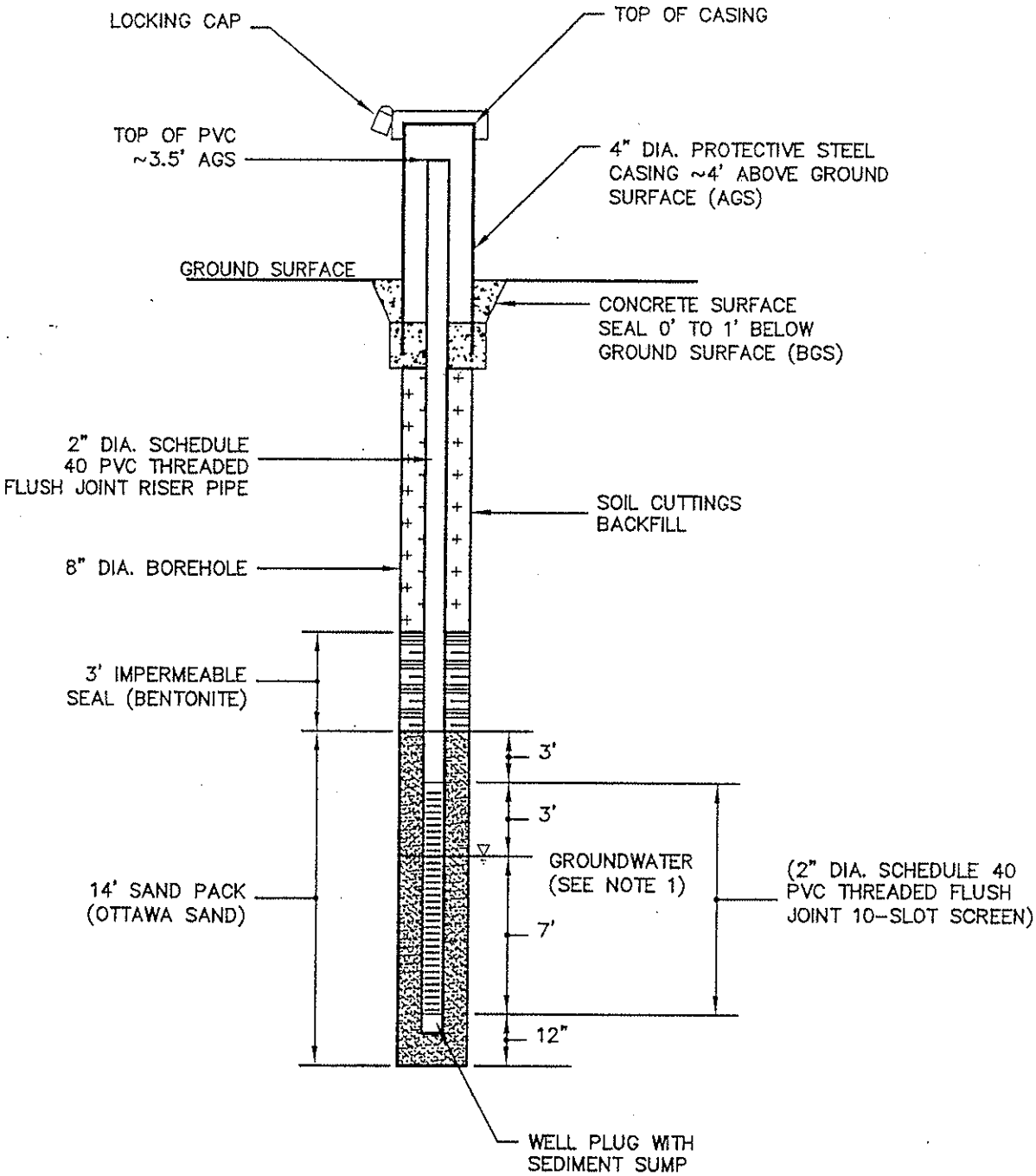
1. INSTALLED MODEL 615N STAINLESS STEEL DRIVE POINT PIEZOMETERS FROM SOLINST.
2. PIEZOMETERS WERE INSTALLED WITH DIRECT PUSH TECHNOLOGY USING A MANUAL SLIDE HAMMER.
3. PIEZOMETERS WERE INSTALLED FOR HYDRAULIC HEAD MEASUREMENTS.

PIEZOMETER DETAIL (PZ-1, 2 & 3)

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A Consultants Inc.
Scientists/Engineers/Architects
CAMBRIDGE, MASSACHUSETTS CONCORD, NEW HAMPSHIRE
ROCKY HILL, CONNECTICUT AUGUSTA, MAINE
STONEHAM, MASSACHUSETTS

G:_CLIENTS\HAMILTON MA\2006054--HAMILTON LANDFILL\CIVIL\PIEZOMETER.DWG



NOTES:

1. SHALLOW MONITORING WELLS TO BE SCREENED ACROSS THE WATER TABLE AS SHOWN.
2. CONTRACTOR TO PROVIDE BORING LOGS AND MONITORING WELL CONSTRUCTION LOGS UPON COMPLETION OF WELL INSTALLATION.
3. ENGINEER TO BE PRESENT DURING WELL INSTALLATION.

TYPICAL GROUNDWATER MONITORING WELL DETAIL

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A Consultants Inc.
Scientists/Engineers/Architects
CAMBRIDGE, MASSACHUSETTS CONCORD, NEW HAMPSHIRE
ROCKY HILL, CONNECTICUT AUGUSTA, MAINE
STONEHAM, MASSACHUSETTS

G:_CLIENTS\HAMILTON MA\2008054-HAMILTON LANDFILL\CIVIL\MONITORING WELL.DWG

EST environmental & industrial

51 Fremont Street, Needham, MA 02494
Tel: (781) 455-0003
Fax: (781) 455-8336
www.estassociates.com

LOW FLOW GROUNDWATER MONITORING REPORT

Client: SEA Consultants
485 Massachusetts Ave
Cambridge, MA 02139
Attention: Mr. Alex Dubanowitz
Report Date: July 18, 2007

Site Location: Hamilton Sanitary Landfill
Sample Date: July 5, 2007
Weather Conditions: Cloudy, +/- 70°F
Field Technician(s): Adam Wallenstein, Ryan Decker

Location ID	SWL (feet)	pH (S.U.)	Cond (mS/cm)	Temp (°C)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-1	5.07	5.48	0.132	9.71	0.76	0.00	24.7
MW-2	--	--	--	--	--	--	--
MW-3	7.87	5.71	0.174	10.49	0.73	4.60	183.0
MW-4S	6.75	4.93	0.053	9.94	1.09	5.10	179.0
MW-4D	6.71	5.68	0.342	10.51	1.13	24.0	22.1
MW-5	12.88	5.36	0.532	12.98	1.28	0.00	104.7
MW-6S	21.22	5.38	0.293	9.85	1.02	10.0	55.9
MW-6D	20.02	6.23	0.352	10.19	1.32	4.97	37.0

Location ID	Total Depth (feet)	SWL (feet)
Manchester-6S	14.64	5.10
Manchester-6D	79.98	5.47
Manchester-2S	27.51	3.96
Manchester-1S	16.30	3.09

Location ID	Depth Inside Casing (feet)	Depth Outside Casing (feet)
PZ-1	2.79	--
PZ-2	2.21	2.46
PZ-3	2.30	2.28

Note(s):

- Appropriately preserved samples delivered to Alpha Analytical, Westborough, MA with the associated Chain of Custody documentation.
- Static Water Levels were measured from top of PVC Riser unless indicated otherwise.
- Measurements listed above indicate final stabilized field analytical results.
- Samples collected for dissolved metals analysis were field filtered to 0.45 micron.
- MA-2 was dry - no samples/measurments collected.

Reviewed By: BR 7-23-07

EST environmental & industrial

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

Chain 1 of 1

ALPHA Job # 10709578

last revised by AV 7/07

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

lient	SEA Consultants, Inc.
ddress	485 Massachusetts Avenue Cambridge, MA 02139
ontact	Alex Dubanowitz
hone #	617-497-7800 Fax: 617-498-4630
roject Name	Hamilton Sanitary Landfill
ddress	Hamilton, MA
ontact	Alex Dubanowitz Phone: 617-498-4638
.ocation ID #	Fax:
escription	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Stephen.Wright@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type Glass	Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2So4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	Total Cyanide	Comments
MW-1	7/5	1220	2		5	2	X	X	X	X			X	X	X	X	X	EST to complete Temp, pH
~~MW-2~~			~~2~~		~~5~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	Spec. Cond. & DO in field
MW-3		1350	2		5	2	X	X	X	X			X	X	X	X	X	
MW-4S		1050	2		5	2	X	X	X	X			X	X	X	X	X	
MW-4D		1115	2		5	2	X	X	X	X			X	X	X	X	X	
MW-5		1345	2		5	2	X	X	X	X			X	X	X	X	X	
MW-6S		0910	2		5	2	X	X	X	X			X	X	X	X	X	
MW-6D	✓	0955	2		5	2	X	X	X	X			X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	7/5 1500	1 Dan Bailey	7-5-07 1535
2 Dan Bailey	7.5.07	2 [signature]	7/5 17:30
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

ALPHA
WOODS HOLE LABS

ANALYTICAL REPORT

Lab Number:	L0709578
Client:	SEA Consultants 485 Massachusetts Avenue Cambridge, MA 02139
ATTN:	Alex Dubanowitz
Project Name:	HAMILTON SANITARY LANDFILL
Project Number:	Not Specified
Report Date:	07/12/07

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (200305), NJ (MA935), RI (LAO00065), ME (2006012), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Sample Location
L0709578-01	MW-1	HAMILTON, MA
L0709578-02	MW-3	HAMILTON, MA
L0709578-03	MW-4S	HAMILTON, MA
L0709578-04	MW-4D	HAMILTON, MA
L0709578-05	MW-5	HAMILTON, MA
L0709578-06	MW-6S	HAMILTON, MA
L0709578-07	MW-6D	HAMILTON, MA

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	N/A

A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	YES
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Case Narrative

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

Sample Receipt

The samples were Field Filtered for Dissolved Metals only.

Metals

In reference to question F:

At the client's request, all submitted samples were not analyzed for the full MCP list of compounds specified for the Method.

Non-MCP Related Narratives

Sulfate

L0709578-01 and -06 have elevated detection limits due to the dilutions required by the elevated concentrations of sulfate in the samples.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kris L. Westerman

Title: Technical Director/Representative

Date: 07/12/07

ORGANICS

VOLATILES

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-01	Date Collected:	07/05/07 12:20
Client ID:	MW-1	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/10/07 21:37		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578

Project Number: Not Specified **Report Date:** 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-01 Date Collected: 07/05/07 12:20

Client ID: MW-1 Date Received: 07/05/07

Sample Location: HAMILTON, MA Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-01	Date Collected:	07/05/07 12:20
Client ID:	MW-1	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	106		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-02	Date Collected:	07/05/07 13:50
Client ID:	MW-3	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/10/07 22:16		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	3.4		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578

Project Number: Not Specified **Report Date:** 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-02 Date Collected: 07/05/07 13:50

Client ID: MW-3 Date Received: 07/05/07

Sample Location: HAMILTON, MA Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578

Project Number: Not Specified **Report Date:** 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-02 Date Collected: 07/05/07 13:50

Client ID: MW-3 Date Received: 07/05/07

Sample Location: HAMILTON, MA Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	110		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-03	Date Collected:	07/05/07 10:30
Client ID:	MW-4S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/10/07 22:55		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-03
Client ID: MW-4S
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 10:30
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-03	Date Collected:	07/05/07 10:30
Client ID:	MW-4S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	122		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-04	Date Collected:	07/05/07 11:15
Client ID:	MW-4D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/10/07 23:34		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-04
Client ID: MW-4D
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 11:15
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	5.7		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-04
Client ID: MW-4D
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 11:15
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	112		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-05	Date Collected:	07/05/07 13:45
Client ID:	MW-5	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/11/07 00:13		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-05
Client ID: MW-5
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 13:45
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	4.4		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-05
Client ID: MW-5
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 13:45
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	115		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-06	Date Collected:	07/05/07 09:10
Client ID:	MW-6S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/11/07 00:53		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-06
Client ID: MW-6S
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 09:10
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-06
Client ID: MW-6S
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 09:10
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	120		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-07	Date Collected:	07/05/07 08:55
Client ID:	MW-6D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	07/11/07 01:32		
Analyst:	BT		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-07
Client ID: MW-6D
Sample Location: HAMILTON, MA

Date Collected: 07/05/07 08:55
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	2.1		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-07	Date Collected:	07/05/07 08:55
Client ID:	MW-6D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	112		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 07/10/07 16:59
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-07 Batch: WG286636-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 07/10/07 16:59
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MOP 8260B for sample(s): 01-07 Batch: WG286636-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 07/10/07 16:59
Analyst: BT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-07 Batch: WG286636-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	110		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG286636-1 WG286636-2					
Methylene chloride	88	86	70-130	2	25
1,1-Dichloroethane	100	100	70-130	0	25
Chloroform	107	106	70-130	1	25
Carbon tetrachloride	111	115	70-130	4	25
1,2-Dichloropropane	97	96	70-130	1	25
Dibromochloromethane	102	108	70-130	6	25
1,1,2-Trichloroethane	94	98	70-130	4	25
Tetrachloroethene	104	100	70-130	4	25
Chlorobenzene	97	99	70-130	2	25
Trichlorofluoromethane	112	106	70-130	6	25
1,2-Dichloroethane	111	113	70-130	2	25
1,1,1-Trichloroethane	117	113	70-130	3	25
Bromodichloromethane	109	110	70-130	1	25
trans-1,3-Dichloropropene	98	100	70-130	2	25
cis-1,3-Dichloropropene	105	104	70-130	1	25
1,1-Dichloropropene	106	103	70-130	3	25
Bromoform	113	114	70-130	3	50
1,1,2,2-Tetrachloroethane	92	98	70-130	6	25
Benzene	100	98	70-130	2	25
Toluene	95	94	70-130	1	25
Ethylbenzene	99	97	70-130	2	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG286636-1 WG286636-2					
Chloromethane	104	93	70-130	11	50
Bromomethane	92	86	70-130	7	50
Vinyl chloride	95	88	70-130	8	25
Chloroethane	108	107	70-130	1	25
1,1-Dichloroethene	100	97	70-130	3	25
trans-1,2-Dichloroethene	100	102	70-130	2	25
Trichloroethene	104	104	70-130	0	25
1,2-Dichlorobenzene	97	101	70-130	4	25
1,3-Dichlorobenzene	101	104	70-130	3	25
1,4-Dichlorobenzene	97	99	70-130	2	25
Methyl tert butyl ether	104	105	70-130	1	25
p/m-Xylene	104	104	70-130	0	25
o-Xylene	108	108	70-130	0	25
cis-1,2-Dichloroethene	101	101	70-130	0	25
Dibromomethane	103	104	70-130	1	25
1,2,3-Trichloropropane	99	108	70-130	9	25
Styrene	109	107	70-130	2	25
Dichlorodifluoromethane	110	105	70-130	5	50
Acetone	94	93	70-130	1	50
Carbon disulfide	95	92	70-130	3	25
2-Butanone	87	84	70-130	4	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG286636-1 WG286636-2					
4-Methyl-2-pentanone	111	113	70-130	2	50
2-Hexanone	85	90	70-130	6	50
Bromochloromethane	108	103	70-130	5	25
Tetrahydrofuran	114	93	70-130	20	25
2,2-Dichloropropane	113	114	70-130	1	50
1,2-Dibromoethane	99	103	70-130	4	25
1,3-Dichloropropane	94	98	70-130	4	25
1,1,1,2-Tetrachloroethane	104	105	70-130	1	25
Bromobenzene	97	98	70-130	1	25
n-Butylbenzene	92	93	70-130	1	25
sec-Butylbenzene	98	95	70-130	3	25
tert-Butylbenzene	98	99	70-130	1	25
o-Chlorotoluene	94	96	70-130	2	25
p-Chlorotoluene	95	97	70-130	2	25
1,2-Dibromo-3-chloropropane	115	126	70-130	9	50
Hexachlorobutadiene	101	94	70-130	7	25
Isopropylbenzene	107	107	70-130	0	25
p-Isopropyltoluene	102	104	70-130	2	25
Naphthalene	89	93	70-130	4	25
n-Propylbenzene	93	94	70-130	1	25
1,2,3-Trichlorobenzene	103	104	70-130	1	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG286636-1 WG286636-2					
1,2,4-Trichlorobenzene	95	96	70-130	1	25
1,3,5-Trimethylbenzene	95	97	70-130	2	25
1,2,4-Trimethylbenzene	95	98	70-130	3	25
Ethyl ether	102	101	70-130	1	25
Isopropyl Ether	96	96	70-130	0	25
Ethyl-Tert-Butyl-Ether	101	99	70-130	2	25
Tertiary-Amyl Methyl Ether	100	104	70-130	4	25
1,4-Dioxane	110	105	70-130	5	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		110		70-130
Toluene-d8	95		95		70-130
4-Bromofluorobenzene	91		93		70-130
Dibromofluoromethane	126		110		70-130

METALS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-01	Date Collected:	07/05/07 12:20
Client ID:	MW-1	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.018		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Calcium, Dissolved	6.8		mg/l	0.10	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Iron, Dissolved	12		mg/l	0.05	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Manganese, Dissolved	0.645		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 11:55	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Sodium, Dissolved	14		mg/l	2.0	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 17:23	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-02	Date Collected:	07/05/07 13:50
Client ID:	MW-3	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.062		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Calcium, Dissolved	15		mg/l	0.10	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Iron, Dissolved	2.0		mg/l	0.05	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Manganese, Dissolved	5.87		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 11:57	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Sodium, Dissolved	5.0		mg/l	2.0	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 17:27	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-03	Date Collected:	07/05/07 10:30
Client ID:	MW-4S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.026		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Calcium, Dissolved	1.2		mg/l	0.10	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Iron, Dissolved	0.11		mg/l	0.05	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Manganese, Dissolved	0.021		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 11:59	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Sodium, Dissolved	4.2		mg/l	2.0	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 17:31	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-04	Date Collected:	07/05/07 11:15
Client ID:	MW-4D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	0.024		mg/l	0.005	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.043		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Calcium, Dissolved	36		mg/l	0.10	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Iron, Dissolved	25		mg/l	0.05	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Manganese, Dissolved	1.24		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 12:01	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Sodium, Dissolved	19		mg/l	2.0	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 17:35	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-05	Date Collected:	07/05/07 13:45
Client ID:	MW-5	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 Series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.320		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Calcium, Dissolved	73		mg/l	0.10	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Iron, Dissolved	1.4		mg/l	0.05	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Manganese, Dissolved	1.04		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 12:02	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Sodium, Dissolved	43		mg/l	2.0	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 18:01	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-06	Date Collected:	07/05/07 09:10
Client ID:	MW-6S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.038		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Calcium, Dissolved	34		mg/l	0.10	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Iron, Dissolved	2.7		mg/l	0.05	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Manganese, Dissolved	0.536		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 12:04	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Sodium, Dissolved	15		mg/l	2.0	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI
Zinc, Dissolved	0.116		mg/l	0.050	1	07/06/07 16:00	07/10/07 18:04	EPA 3005A	60,6010B	AI

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-07	Date Collected:	07/05/07 08:55
Client ID:	MW-6D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Barium, Dissolved	0.029		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Calcium, Dissolved	25		mg/l	0.10	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Iron, Dissolved	9.6		mg/l	0.05	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Manganese, Dissolved	3.88		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 12:10	EPA 7470A	64,7470A	DM
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Sodium, Dissolved	20		mg/l	2.0	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 18:08	EPA 3005A	60,6010B	AI

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578

Project Number: Not Specified **Report Date:** 07/12/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-07 Batch: WG286237-1									
Arsenic, Dissolved	ND		mg/l	0.005	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Barium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Cadmium, Dissolved	ND		mg/l	0.004	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Calcium, Dissolved	ND		mg/l	0.10	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Chromium, Dissolved	ND		mg/l	0.01	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Copper, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Iron, Dissolved	ND		mg/l	0.05	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Lead, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Manganese, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Selenium, Dissolved	ND		mg/l	0.010	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Silver, Dissolved	ND		mg/l	0.007	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Sodium, Dissolved	ND		mg/l	2.0	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI
Zinc, Dissolved	ND		mg/l	0.050	1	07/06/07 16:00	07/10/07 17:01	60,6010B	AI

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-07 Batch: WG286258-1									
Mercury, Dissolved	ND		mg/l	0.0002	1	07/06/07 18:30	07/09/07 11:50	64,7470A	DM

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series. Associated sample(s): 01-07 Batch: WG286237-2 WG286237-3					
Arsenic, Dissolved	109	108	80-120	1	20
Barium, Dissolved	99	97	80-120	2	20
Cadmium, Dissolved	109	107	80-120	2	20
Calcium, Dissolved	94	92	80-120	2	20
Chromium, Dissolved	100	100	80-120	0	20
Copper, Dissolved	95	94	80-120	1	20
Iron, Dissolved	99	96	80-120	3	20
Lead, Dissolved	104	103	80-120	1	20
Manganese, Dissolved	97	96	80-120	1	20
Selenium, Dissolved	113	115	80-120	2	20
Silver, Dissolved	104	101	80-120	3	20
Sodium, Dissolved	100	100	80-120	0	20
Zinc, Dissolved	99	98	80-120	1	20
Dissolved Metals by MCP 6000/7000 series. Associated sample(s): 01-07 Batch: WG286258-2 WG286258-3					
Mercury, Dissolved	107	106	80-120	2	20

INORGANICS
&
MISCELLANEOUS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-01
Client ID: MW-1
Sample Location: HAMILTON, MA
Matrix: Water

Date Collected: 07/05/07 12:20
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:19	64,9014	DD
General Chemistry									
Alkalinity, Total	30		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	140		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	19		mg/l	1.0	1	-	07/09/07 17:01	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	07/06/07 20:41	30,4500NO3-F	DD
Sulfate	38		mg/l	20	2	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	30		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-02
Client ID: MW-3
Sample Location: HAMILTON, MA
Matrix: Water

Date Collected: 07/05/07 13:50
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:59	64,9014	DD
General Chemistry									
Alkalinity, Total	62		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	91		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	6.0		mg/l	1.0	1	-	07/09/07 17:02	1,9251	DD
Nitrogen, Nitrate	0.17		mg/l	0.10	1	-	07/06/07 20:41	30,4500NO3-F	DD
Sulfate	12		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-03	Date Collected:	07/05/07 10:30
Client ID:	MW-4S	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:20	64,9014	DD
General Chemistry									
Alkalinity, Total	2.1		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	47		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	6.4		mg/l	1.0	1	-	07/09/07 17:02	1,9251	DD
Nitrogen, Nitrate	0.10		mg/l	0.10	1	-	07/06/07 20:45	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-04
Client ID: MW-4D
Sample Location: HAMILTON, MA
Matrix: Water

Date Collected: 07/05/07 11:15
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:21	64,9014	DD
General Chemistry									
Alkalinity, Total	200		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	250		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	20		mg/l	1.0	1	-	07/09/07 17:03	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	07/06/07 20:46	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	32		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-05	Date Collected:	07/05/07 13:45
Client ID:	MW-5	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:22	64,9014	DD
General Chemistry									
Alkalinity, Total	280		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	360		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	48		mg/l	1.0	1	-	07/09/07 17:03	1,9251	DD
Nitrogen, Nitrate	1.7		mg/l	0.10	1	-	07/06/07 20:46	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	30		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

SAMPLE RESULTS

Lab ID: L0709578-06
Client ID: MW-6S
Sample Location: HAMILTON, MA
Matrix: Water

Date Collected: 07/05/07 09:10
Date Received: 07/05/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:23	64,9014	DD
General Chemistry									
Alkalinity, Total	44		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	240		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	32		mg/l	1.0	1	-	07/09/07 17:04	1,9251	DD
Nitrogen, Nitrate	0.27		mg/l	0.10	1	-	07/06/07 20:48	30,4500NO3-F	DD
Sulfate	69		mg/l	25	2.5	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0709578
Project Number:	Not Specified	**Report Date:**	07/12/07

SAMPLE RESULTS

Lab ID:	L0709578-07	Date Collected:	07/05/07 08:55
Client ID:	MW-6D	Date Received:	07/05/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:23	64,9014	DD
General Chemistry									
Alkalinity, Total	76		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
Solids, Total Dissolved	230		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW
Chloride	43		mg/l	1.0	1	-	07/09/07 17:05	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	07/06/07 20:48	30,4500NO3-F	DD
Sulfate	34		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Chemical Oxygen Demand	20		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578

Project Number: Not Specified **Report Date:** 07/12/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry, for sample(s): 01-07 Batch: WG286186-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	07/06/07 11:00	30,2320B	SD
General Chemistry, for sample(s): 01-07 Batch: WG286199-1									
Sulfate	ND		mg/l	10	1	07/06/07 15:00	07/06/07 15:00	1,9038	ST
Total Cyanide by MCP 9014, for sample(s): 01-07 Batch: WG286220-3									
Cyanide, Total	ND		mg/l	0.005	1	07/06/07 16:00	07/06/07 20:11	64,9014	DD
General Chemistry, for sample(s): 01-07 Batch: WG286231-2									
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	07/06/07 20:31	30,4500NO3-F	DD
General Chemistry, for sample(s): 01-07 Batch: WG286376-2									
Chloride	ND		mg/l	1.0	1	-	07/09/07 16:55	1,9251	DD
General Chemistry, for sample(s): 01-07 Batch: WG286463-1									
Chemical Oxygen Demand	ND		mg/l	20	1	-	07/11/07 07:50	30,5220D	DW
General Chemistry, for sample(s): 01-07 Batch: WG286465-1									
Solids, Total Dissolved	ND		mg/l	10	1	-	07/10/07 10:50	30,2540C	DW

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-07 Batch: WG286186-2					
Alkalinity, Total	104	-	80-115	-	
Associated sample(s): 01-07 Batch: WG286199-2					
Sulfate	90	-	84-108	-	
Total Cyanide by MCP 9014 Associated sample(s): 01-07 Batch: WG286220-1 WG286220-2					
Cyanide, Total	100	107	80-120	7	20
Associated sample(s): 01-07 Batch: WG286231-1					
Nitrogen, Nitrate	98	-	88-105	-	
Associated sample(s): 01-07 Batch: WG286376-1					
Chloride	97	-	84-110	-	
Associated sample(s): 01-07 Batch: WG286463-2					
Chemical Oxygen Demand	102	-	93-106	-	
Associated sample(s): 01-07 Batch: WG286465-2					
Solids, Total Dissolved	88	-	72-121	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-07 QC Batch ID: WG286186-3 QC Sample: L0709540-01 Client ID: MS Sample									
Alkalinity, Total	69	100	170	99	-	-	86-116	-	4
Associated sample(s): 01-07 QC Batch ID: WG286199-3 QC Sample: L0709547-08 Client ID: MS Sample									
Sulfate	14	20	35	105	-	-	55-147	-	14
Associated sample(s): 01-07 QC Batch ID: WG286231-3 QC Sample: L0709578-03 Client ID: MW-4S									
Nitrogen, Nitrate	0.10	4	4.2	105	-	-	83-120	-	6
Associated sample(s): 01-07 QC Batch ID: WG286376-3 QC Sample: L0709551-02 Client ID: MS Sample									
Chloride	31	20	51	100	-	-	58-140	-	7
Associated sample(s): 01-07 QC Batch ID: WG286463-3 QC Sample: L0709257-04 Client ID: MS Sample									
Chemical Oxygen Demand	ND	238	260	108	-	-	84-120	-	12

Lab Duplicate Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Associated sample(s): 01-07 QC Batch ID: WG286186-4 QC Sample: L0709540-01 Client ID: DUP Sample					
Alkalinity, Total	69	70	mg CaCO3/L	1	4
Associated sample(s): 01-07 QC Batch ID: WG286199-4 QC Sample: L0709547-06 Client ID: DUP Sample					
Sulfate	31	30	mg/l	3	14
Associated sample(s): 01-07 QC Batch ID: WG286231-4 QC Sample: L0709578-05 Client ID: MW-5					
Nitrogen, Nitrate	1.7	1.7	mg/l	0	6
Associated sample(s): 01-07 QC Batch ID: WG286376-4 QC Sample: L0709578-05 Client ID: MW-5					
Chloride	48	48	mg/l	0	7
Associated sample(s): 01-07 QC Batch ID: WG286463-4 QC Sample: L0709257-04 Client ID: DUP Sample					
Chemical Oxygen Demand	ND	23	mg/l	NC	12
Associated sample(s): 01-07 QC Batch ID: WG286465-3 QC Sample: L0708221-05 Client ID: DUP Sample					
Solids, Total Dissolved	287	294	mg/l	2	11

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0709578-01A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-01B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-01C	Plastic 500ml HNO3 preserved	A	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-01D	Plastic 250ml NaOH preserved	A	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-01E	Plastic 500ml unpreserved	A	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-01F	Plastic 250ml H2SO4 preserved	A	<2	2C	Y	Absent	COD-5220
L0709578-01N	Plastic 500ml unpreserved	A	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-02A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-02B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-02C	Plastic 500ml HNO3 preserved	A	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-02D	Plastic 250ml NaOH preserved	A	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-02E	Plastic 500ml unpreserved	A	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-02F	Plastic 250ml H2SO4 preserved	A	<2	2C	Y	Absent	COD-5220
L0709578-02N	Plastic 500ml unpreserved	A	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-03A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-03B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-03C	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-03D	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0709578-03E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-03F	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0709578-03N	Plastic 500ml unpreserved	B	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-04A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-04C	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-04D	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-04E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-04F	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0709578-04N	Plastic 500ml unpreserved	B	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-05A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-05B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-05C	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-05D	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-05E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-05F	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0709578-05N	Plastic 500ml unpreserved	B	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-06A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-06B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-06C	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-06D	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-06E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-06F	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0709578-06N	Plastic 500ml unpreserved	B	7	2C	Y	Absent	SO4-9038,TDS-2540
L0709578-07A	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04
L0709578-07B	Vial HCl preserved	B	N/A	2C	Y	Absent	MCP-8260-04

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0709578-07C	Plastic 500ml HNO3 preserved	B	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0709578-07D	Plastic 250ml NaOH preserved	B	>12	2C	Y	Absent	MCP-TCN9014-04
L0709578-07E	Plastic 500ml unpreserved	B	7	2C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500
L0709578-07F	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0709578-07N	Plastic 500ml unpreserved	B	7	2C	Y	Absent	SO4-9038,TDS-2540

Container Comments

L0709578-01A	Temp Probe
L0709578-01B	Temp Probe
L0709578-01C	Temp Probe
L0709578-01D	Temp Probe
L0709578-01E	Temp Probe
L0709578-01F	Temp Probe
L0709578-01N	Temp Probe
L0709578-02A	Temp Probe
L0709578-02B	Temp Probe
L0709578-02C	Temp Probe
L0709578-02D	Temp Probe
L0709578-02E	Temp Probe
L0709578-02F	Temp Probe
L0709578-02N	Temp Probe
L0709578-03A	Temp Probe
L0709578-03B	Temp Probe
L0709578-03C	Temp Probe
L0709578-03D	Temp Probe
L0709578-03E	Temp Probe
L0709578-03F	Temp Probe
L0709578-03N	Temp Probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0709578
Report Date: 07/12/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0709578-04A	Temp Probe
L0709578-04C	Temp Probe
L0709578-04D	Temp Probe
L0709578-04E	Temp Probe
L0709578-04F	Temp Probe
L0709578-04N	Temp Probe
L0709578-05A	Temp Probe
L0709578-05B	Temp Probe
L0709578-05C	Temp Probe
L0709578-05D	Temp Probe
L0709578-05E	Temp Probe
L0709578-05F	Temp Probe
L0709578-05N	Temp Probe
L0709578-06A	Temp Probe
L0709578-06B	Temp Probe
L0709578-06C	Temp Probe
L0709578-06D	Temp Probe
L0709578-06E	Temp Probe
L0709578-06F	Temp Probe
L0709578-06N	Temp Probe
L0709578-07A	Temp Probe
L0709578-07B	Temp Probe
L0709578-07C	Temp Probe
L0709578-07D	Temp Probe
L0709578-07E	Temp Probe
L0709578-07F	Temp Probe
L0709578-07N	Temp Probe

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0709578
Project Number: Not Specified **Report Date:** 07/12/07

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.
LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD - Matrix Spike Sample Duplicate: Refer to MS.
NA - Not Applicable.
NI - Not Ignitable.
NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND - Not detected at the reported detection limit for the sample.
RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

The following data qualifiers have been identified for use under the CT DEP Reasonable Confidence Protocols.

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

J - Estimated value. The analyte was tentatively identified; the quantitation is an estimation. (Tentatively identified compounds only.)

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

60 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Woods Hole Labs performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Woods Hole Labs be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

ALPHA Job # L0709528

Last revised by AV 7/07

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	485 Massachusetts Avenue Cambridge, MA 02139
Contact	Alex Dubanowitz
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Alex Dubanowitz Phone: 617-498-4638
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Stephen.Wright@seacon.com

Billing Reference: 7800-Q#-xx

Q#4971218-06

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Plastic	VOA's	HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	Total Cyanide	Comments
MW-1	7/5	1220	2		5	2	X	X	X	X			X	X	X	X	X	EST to complete Temp, pH
~~MW-2~~			~~2~~		~~5~~	~~2~~	~~X~~	~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	Spec. Cond. & DO in field
MW-3		1350	2		5	2	X	X	X	X			X	X	X	X	X	
MW-4S		1050	2		5	2	X	X	X	X			X	X	X	X	X	
MW-4D		1115	2		5	2	X	X	X	X			X	X	X	X	X	
MW-5		1345	2		5	2	X	X	X	X			X	X	X	X	X	
MW-6S		0910	2		5	2	X	X	X	X			X	X	X	X	X	
MW-6D	✓	1100	2		5	2	X	X	X	X			X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day RUSH
- ☐ 4 Day RUSH
- ☐ 3 Day RUSH
- ☐ 2 Day RUSH
- ☐ 1 Day RUSH

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen) sulfate, COD

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	7/5 1500	1 Don Bauer	7.5.07 1535
2 Don Bauer	7.5.07	2 [signature]	7/5 17:30
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

Round 3 – December 10, 2007

Water Quality and Sediment Results

December 10, 2007

S E A

S E A CONSULTANTS INC.
Scientists/Engineers/Architects

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

Re: Comprehensive Site Assessment (CSA)
Water Quality and Sediment Monitoring Results (Round 3 of 4)
Hamilton Sanitary Landfill
S E A Ref. No. 2006054.05

Dear Mr. Carrigan:

Enclosed are the laboratory analytical results for the third round of Comprehensive Site Assessment (CSA) water quality and sediment monitoring performed at the Hamilton Sanitary Landfill. The sampling activities were performed on October 25, 2007 and were completed in accordance with S E A's May 19, 2006 CSA Scope of Work, as approved by DEP in its letter dated September 13, 2006.

The water quality monitoring network consists of eight groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4S/4D, MW-5, and MW-6S/6D), and three surface water sampling locations (SW-1, SW-2, and SW-3). The surface water samples are collected adjacent to the three piezometers installed at the site. In accordance with the DEP's CSA Scope of Work approval, three sediment samples (SED-1, SED-2, and SED-3) were collected from locations adjacent to the three piezometers. The sampling locations are shown on the attached Figure 1

The water quality and sediment samples were collected by Environmental Sampling Technology (EST) of Needham, Massachusetts and were analyzed by Alpha Analytical Laboratories of Westborough, Massachusetts. The eight wells installed in connection with the Hamilton Landfill CSA were gauged for water level depth prior to sampling. During this round, as was the case during the Round 2 monitoring event, monitoring well MW-2 was dry and could not be sampled. Surface water sampling location SW-1 was also dry and could not be sampled. Temperature, pH, specific conductivity and dissolved oxygen were measured in-situ at the groundwater and surface water sampling locations and groundwater samples were collected using the EPA's low flow protocols. The sediment samples were collected from the top 6-inches of sediment underlying the water bodies (stream and pond). The groundwater, surface water and sediment analytical parameters are summarized on the attached Tables 1 and 2.

Groundwater depth and total well depth were measured from additional wells that comprise a portion of the Town of Manchester's landfill monitoring well network. Water level measurements from the Manchester wells were included in the Round 3 monitoring event in response to the DEP's conditional approval of the Hamilton CSA Scope of Work. The DEP requested that the Manchester wells be gauged to provide additional data points for mapping groundwater contours in connection with the Hamilton CSA. A discussion of the water level measurements and specific wells gauged from the Manchester network is provided in the following summary of Round 3 CSA monitoring results.

CSA Monitoring Results

Table 3 summarizes the groundwater analytical results and compares the results to the Massachusetts drinking water standards (MMCLs and SMCLs), as well as to the Massachusetts Contingency Plan (MCP) RCGW-1 reporting thresholds provided in Section 310 CMR 40.1600 of the MCP. Table 4 summarizes the surface water analytical results and compares the results to both the Environmental Toxicity Values provided in 310 CMR 40.1516 of the MCP and the EPA National Recommended Water

Quality Criteria. Table 5 summarizes the sediment analytical results and compares the results to consensus-based threshold effects concentrations (TECs) and probable effect concentrations (PECs) provided in DEP's January 2006 Technical Update entitled "Revised Sediment Screening Values". The complete laboratory analytical reports and sampling records are attached for reference. The results of the monitoring round are highlighted below.

Groundwater Monitoring Results (See Table 3)

- Groundwater monitoring well MW-2 was dry and therefore could not be sampled.
- Dissolved iron and manganese concentrations were detected in excess of their respective Massachusetts DEP Secondary Maximum Contaminant Level (SMCL) of 0.3 mg/l and 0.05 mg/l at all sampled monitoring wells. SMCLs are non-enforceable standards that were developed to protect the aesthetic quality of drinking water.
- Dissolved sodium concentrations were detected in excess of the Office of Research and Standards Guidelines (ORSG) level of 20 mg/l at monitoring wells MW-4S and MW-5. No MMCL, SMCL, or RCGW-l standards exist of dissolved sodium.
- No Volatile Organic Compounds (VOCs) were detected in excess of the Massachusetts drinking water standards or RCGW-1 reporting thresholds at the monitoring well locations.
- No Semi-Volatile Organic Compounds (SVOCs) were detected in excess of the laboratory detection limits, which were all below the Massachusetts drinking water standards or RCGW-1 reporting thresholds.
- No Polychlorinated Biphenyls (PCBs) or organochlorine pesticides were detected in excess of the laboratory detection limits.

Surface Water Monitoring Results (See Table 4)

- Surface water sampling location SW-1 was dry and therefore could not be sampled.
- Total alkalinity was detected at 62 mg/l at SW-2 and at 75 mg/l at SW-3; these concentrations are above the EPA national recommended water quality criteria standard of 20 mg/l.
- Dissolved cyanide was detected at SW-2 at a concentration of 0.006 mg/l, which exceeds the MCP environmental toxicity values of 0.001 mg/l and the EPA recommended water quality criteria (both acute and chronic standards). Dissolved cyanide was not detected at any other surface water monitoring location.
- No VOC or SVOC concentrations were detected in excess of the laboratory detection limits, which were all below the EPA water quality criteria and the MCP environmental toxicity values at the surface water locations.
- No PCB or pesticide concentrations were detected in excess of the EPA national recommended water quality criteria of 0.000014 mg/l.

Sediment Monitoring Results (See Table 5)

As shown in Table 5, both TECs and PECs are provided as standards against which the sediment analytical results have been compared. As defined in the DEP guidance documents, TECs are concentrations below which harmful effects to sediment dwelling organisms are considered unlikely, whereas PECs are concentrations that, if exceeded, are expected to produce adverse effects more often than not. Since the PECs reflect the upper boundary of potential risk to sediment dwelling organisms, these are the standards of greatest interest when evaluating the sediment analytical data.

- No metals were detected above Freshwater Sediment Screening TECs or PECs at the sediment sampling locations.
- No pesticides were detected above Freshwater Sediment Screening TECs or PECs at the sediment sampling locations.
- No PCB or SVOC concentrations were detected in excess of the laboratory detection limits, which were all below the Freshwater Sediment Screening TECs and PECs.
- No VOC concentrations were detected in excess of the Freshwater Sediment Screening TECs or PECs.

Water Level Measurements (See Table 6)

Water level elevations were collected from seven of the eight Hamilton groundwater monitoring wells and two of the three on-site piezometer locations (PZ-1 was dry and could not be measured). In addition, water level measurements were also collected from four shallow groundwater monitoring wells belonging to the Town of Manchester. As coordinated with DEP, Hamilton received approval from the Town of Manchester to collect water level measurements from Manchester's shallow groundwater monitoring wells located near the northern portion of the Manchester landfill. The specific Manchester wells from which water level measurements were sought in connection with the Hamilton CSA were MW-1S, MW-2S, MW-5S, MW-6S, HWH-12, HWH-13, and HWH-14 (refer to figure 2 for well locations). However, wells HWH-12, HWH-13, and HWH-14 have since been removed and could not be measured. To distinguish these and other Manchester wells from the Hamilton CSA well network, the Manchester wells will be labeled with a "manch" subscript (i.e. water level measurements were obtained from wells $MW\text{-}1S_{manch}$, $MW\text{-}2S_{manch}$, and $MW\text{-}6S_{manch}$).

Water level measurements collected during the Round 3 monitoring event are summarized in Table 6. The Hamilton wells and piezometers have not yet been surveyed, therefore only water level depths, measured from top-of-casings, can be provided at this time and this information is summarized in Table 6. Prior to the completion of the CSA field investigations, the wells and piezometers will be surveyed to a common vertical datum (USGS), which will allow us to prepare groundwater contour maps that will be presented in the CSA Report.

The fourth round of CSA water quality monitoring is scheduled to be completed in January 2008. The Round 4 monitoring program is summarized in Table 7. As noted in Table 7, surface water and sediment monitoring will not be performed during the next round, nor will extended parameters analyses be performed during Round 4. Round 4 represents the final CSA water quality monitoring round.

S E A

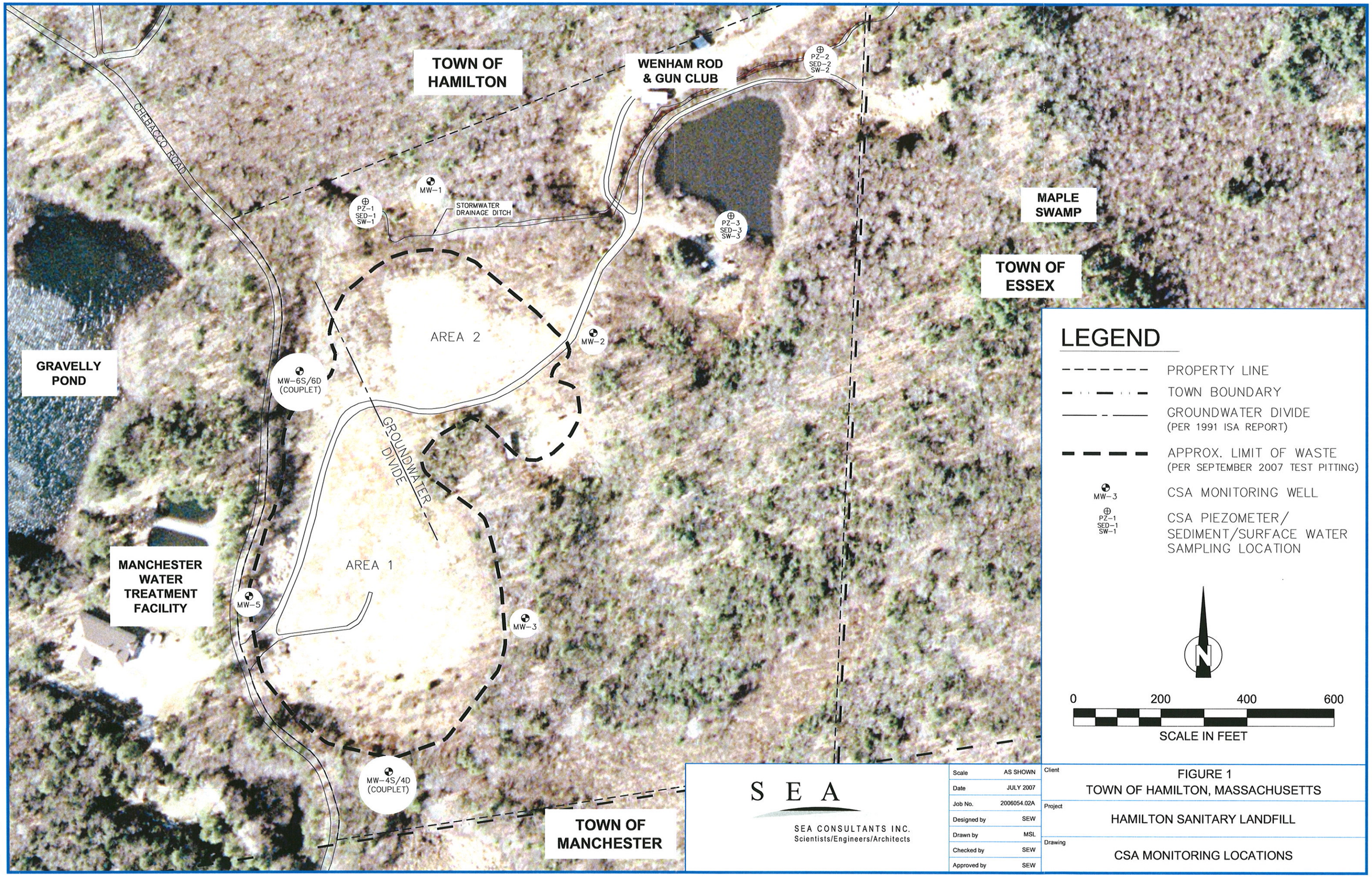
If you have any questions regarding the CSA monitoring program or enclosed monitoring results, please call me at (617) 498-4624.

Very truly yours,

S E A CONSULTANTS INC.

Stephen E. Wright, P.E.
Attachments
I:_clients\Hamilton MA\2006054.05 - CSA Monitoring\reports\S E A\CSA (Water, Sediment)\Water Quality_10-07.doc

cc: Hamilton Department of Public Works
Michael Looney, S E A Consultants, Inc. (w/attachments)



SEA

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Scale	AS SHOWN
Date	JULY 2007
Job No.	2006054.02A
Designed by	SEW
Drawn by	MSL
Checked by	SEW
Approved by	SEW

Client: FIGURE 1
TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON SANITARY LANDFILL

Drawing: CSA MONITORING LOCATIONS

FILENAME=G:_clients\Hamilton MA\2006054 - Hamilton Landfill\general\CSA-Water Quality.dwg

LEGEND

- PROPERTY LINE
- TOWN BOUNDARY
- APPROX. LIMIT OF WASTE (PER SEPTEMBER 2007 TEST PITTING)
- MW-6 — HAMILTON LF GROUNDWATER MONITORING WELL
- MW-6 MANCH — MANCHESTER GROUNDWATER MONITORING WELL
- HWH-13 (REMOVED) — REMOVED MANCHESTER GROUNDWATER MONITORING WELL

MANCHESTER WELLS WHERE WATER LEVELS ARE TAKEN FOR HAMILTION CSA

WELL ID	DATE INSTALLED	SCREEN INTERVAL (FBGS)	ELEVATION (TOP OF RISER) (FEET MSL)
MW-1S	1994	9.2-13.8	66.10
MW-2S	1994	15.2-24.8	67.15
MW-5S	1994	5.2-9.8	68.06
MW-6S	3/98	1.4-11.4	TBC

NOTES:

1. FBGS = FEET BELOW GROUND SURFACE
2. TBC = TO BE CONFIRMED
3. MANCHESTER WELL CONSTRUCTION DATA (WITH THE EXCEPTION OF MW-6S/6B) IS PROVIDED IN THE JANUARY 1996 MANCHESTER CSA REPORT.

0 300 600 900
SCALE IN FEET

SEA
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

Scale	AS SHOWN
Date	JANUARY 2007
Job No.	2006054.02A
Designed by	SEW
Drawn by	MSL
Checked by	SEW
Approved by	SEW

Client: FIGURE 2
TOWN OF HAMILTON, MASSACHUSETTS

Project: HAMILTON LANDFILL CSA

Drawing: MANCHESTER WELL GAUGING LOCATIONS

FILENAME= G:_clients\Hamilton MA\2006054 - Hamilton Landfill\general\Depth to Groundwater wells.dwg

TABLE 1
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program
ROUND 3

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D SW-1, SW-2, SW-3	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080

NOTE: Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.

TABLE 2
Hamilton Sanitary Landfill
Comprehensive Site Assessment Sediment Monitoring
ROUND 3

Monitoring Points	Analytical Category		Description
SED-1, SED-2, SED-3	*Standard Parameters per 310 CMR 19.132*	Total Metals	Arsenic, Barium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	EPA Method 8270
		PCBs and Pesticides	EPA Method 8080

Table 3
Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill

LOCATION	WATER QUALITY STANDARDS GUIDELINES				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE					25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0716044-01	NA	L0716044-02	L0716044-03	L0716044-04	L0716044-05	L0716044-06	L0716044-07
Alkalinity, Total				mg CaCO3/L	26		82	220	70	240	43	66
Solids, Total Dissolved			500	mg/l	82		120	310	94	340	210	210
Cyanide, Total	0.2	0.03		mg/l	<0.005		0.007	0.009	0.006	0.015	0.007	0.007
Chloride			250	mg/l	12		6.3	42	16	55	33	46
Nitrogen, Nitrate	10			mg/l	<0.1		0.1	<0.1	<0.1	1.3	<0.1	<0.1
Sulfate			250	mg/l	18		16	13	<10	12	84	35
Chemical Oxygen Demand				mg/l	<20		41	34	<20	20	<20	<20
Dissolved Metals by MCP 6000/7000 series												
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	0.014	D	0.069	0.051	0.043	0.447	0.034	0.032
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	6.3		19	42	20	63	32	26
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		0.024	<0.01	<0.01	<0.01	<0.01	<0.01
Iron, Dissolved			0.3	mg/l	11		1.6	4.5	0.53	3.8	3.4	11
Lead, Dissolved	0.015	0.02		mg/l	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Manganese, Dissolved			0.05	mg/l	0.676		7.33	8.3	0.446	4.77	0.769	3.36
Mercury, Dissolved	0.002	0.002		mg/l	<0.0002	R	<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	11		6.6	41	14	42	16	20
Zinc, Dissolved		0.9	5	mg/l	<0.05		<0.05	<0.05	<0.05	<0.05	0.068	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)												
Benzene	0.005	0.005		mg/l	<0.0005		<0.0005	<0.0005	0.00056	<0.0005	<0.0005	<0.0005
Chlorobenzene	0.1	0.1		mg/l	<0.0005	Y	0.0029	0.00055	0.0029	<0.0005	<0.0005	<0.0005
cis-1,2-Dichloroethene	0.07	0.07		mg/l	<0.0005		<0.0005	<0.0005	0.00063	<0.0005	<0.0005	<0.0005
Ethyl ether		1		mg/l	<0.0025		<0.0025	0.0055	0.026	<0.0025	<0.0025	<0.0025
Methyl tert butyl ether		0.07	X 20	mg/l	<0.001		<0.001	<0.0001	<0.0001	<0.001	<0.0001	0.0023
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)												
TOTAL SVOCs				mg/l	ND		ND	ND	ND	ND	ND	ND
Semivolatile Organics by MCP 8270C-SIM (Results Above Detection Limits Only)												
TOTAL SVOCs				mg/l	ND		ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls by MCP 8082												

→ 0.02

Table 3
Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill

LOCATION	WATER QUALITY STANDARDS GUIDELINES				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE					25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07	25-OCT-07
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0716044-01	NA	L0716044-02	L0716044-03	L0716044-04	L0716044-05	L0716044-06	L0716044-07
TOTAL PCBs				mg/l	ND	D R Y	ND	ND	ND	ND	ND	ND
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)												
TOTAL Pesticides				mg/l	ND		ND	ND	ND	ND	ND	ND

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).

ND - no analyte detected above detection limit.

Bolded and shaded values indicate analytical results which 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 on Office of Research and Standards Guidelines (ORSG).

Table 4
Summary of Surface Water Analytical Results
Hamilton Sanitary Landfill

LOCATION	TOXICITY VALUES (AMBIENT WATER QUALITY CRITERIA) FRESH WATER (1)		EPA WATER QUALITY CRITERIA (2)			SW-1	SW-2	SW-3
SAMPLING DATE							25-OCT-07	25-OCT-07
LAB SAMPLE ID		TYPE	ACUTE (CMC)*	CHRONIC (CCC)**			L0716044-08	L0716044-09
					Units			
Alkalinity, Total				20	mg CaCO3/L		62	75
Solids, Total Dissolved					mg/l		130	120
Total Cyanide by MCP 9014								
Cyanide, Total	0.001	CCC(SW)	0.022	0.0052	mg/l		0.006	*<0.005*
Chloride			860	230	mg/l		15	10
Nitrogen, Nitrate					mg/l		0.1	<0.1
Sulfate					mg/l		21	30
Chemical Oxygen Demand					mg/l		23	<20
Dissolved Metals by MCP 6000/7000 series								
Arsenic, Dissolved	0.036	CCC(SW)	0.34	0.15	mg/l		< 0.005	< 0.005
Barium, Dissolved	41	A-LC50/10			mg/l	D	0.019	0.017
Cadmium, Dissolved	0.000091	CCC(FW)	0.002	0.00025	mg/l		*< 0.0002*	*< 0.0002*
Calcium, Dissolved					mg/l		22	26
Chromium, Dissolved	0.011	CCC(FW)	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		0.28	0.16
Lead, Dissolved	0.0005	CCC(FW)	0.065	0.0025	mg/l		< 0.0005	< 0.0005
Manganese, Dissolved					mg/l	R	0.366	0.293
Mercury, Dissolved	0.00077	CCC(FW)	0.0014	0.00077	mg/l		< 0.0002	< 0.0002
Selenium, Dissolved	0.005	CCC		0.005	mg/l		*< 0.01*	*< 0.01*
Silver, Dissolved	0.00003	CMC(FW)/10	0.0032		mg/l		*< 0.0005*	*< 0.0005*
Sodium, Dissolved					mg/l		10	7.6
Zinc, Dissolved	0.036	CCC(FW)	0.12	0.12	mg/l		0.0076	< 0.005
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)						Y		
TOTAL VOCs					mg/l		ND	ND
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)								
TOTAL SVOCs					mg/l		ND	ND
Semivolatile Organics by MCP 8270C-SIM								
TOTAL SVOCs					mg/l		ND	ND
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)								
TOTAL PCBs					mg/l		ND	ND
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)								
TOTAL Pesticides					mg/l		ND	ND

Notes:

1. In accordance with DEP requirements, surface water quality analytical results are to be compared to environmental toxicity values provided in section 40.1516 of the Massachusetts Contingency Plan.
2. 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 indefinetly 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 detection limit.

Bolded and shaded values indicate analytical results which exceed the Environmental Toxicity Values or 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
SAMPLING DATE	SEDIMENT SCREENING VALUES*			25-OCT-07	25-OCT-07	25-OCT-07
LAB SAMPLE ID	TEC	PEC		L0716044-10	L0716044-11	L0716044-12
			Units			
Total Metals by MCP 6000/7000 series						
Arsenic, Total		33	mg/kg	1.6	22	3.7
Barium, Total			mg/kg	7.3	33	28
Cadmium, Total		5	mg/kg	<0.46	<0.76	<0.53
Calcium, Total			mg/kg	600	2100	1600
Chromium, Total		110	mg/kg	9.1	11	15
Copper, Total		150	mg/kg	11	14	7.1
Iron, Total			mg/kg	6900	26000	10000
Lead, Total		130	mg/kg	6.1	43	18
Manganese, Total			mg/kg	120	310	400
Mercury, Total	0.18		mg/kg	<0.085	<0.16	<0.11
Selenium, Total			mg/kg	<2.3	<3.8	<2.6
Silver, Total			mg/kg	<0.46	<0.76	<0.53
Sodium, Total			mg/kg	450	820	560
Zinc, Total		460	mg/kg	41	100	40
Volatile Organics by MCP 8260B/5035-High (Results Above Detection Limits Only)						
VOCs, Total			mg/kg	ND	ND	ND
Semivolatile Organics by MCP 8270C (Results Above Detection Limits Only)						
SVOCs, Total			mg/kg	ND	ND	ND
Polychlorinated Biphenyls by MCP 8082 (Results Above Detection Limits Only)						
PCBs, Total			mg/kg	ND	ND	ND
Organochlorine Pesticides by MCP 8081A (Results Above Detection Limits Only)						
Pesticides, Total			mg/kg	ND	ND	ND

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 6
Summary of Water Level Measurements
Hamilton Sanitary Landfill

OWNER	LOCATION	SCREEN DEPTH (Feet below ground surface)*	WATER LEVELS					
			CSA ROUND 1 5-Mar-07		CSA ROUND 2 5-Jul-07		CSA ROUND 3 25-Oct-07	
MONITORING WELLS								
HAMILTON	MW-1	5 - 15	4.38		5.07		7.43	
	MW-2	2 - 7	8.34		DRY		DRY	
	MW-3	5 - 15	6.38		7.87		9.55	
	MW-4S	2 - 12	5.93		6.75		8.52	
	MW-4D	27 - 37	6.07		6.71		8.46	
	MW-5	7 - 17	12.16		12.88		15.79	
	MW-6S	17 - 27	19.45		21.22		24.58	
	MW-6D	39 - 44	18.83		20.02		23.44	
MANCHESTER	$MW\text{-}1S_{manch}$	9.17 - 13.83	Not Gauged		3.09		4.79	
	$MW\text{-}2S_{manch}$	15.17 - 24.67	Not Gauged		3.96		5.62	
	$MW\text{-}5S_{manch}$	5.17 - 9.67	Not Guaged		NA		6.97	
	$MW\text{-}6S_{manch}$	1.40-11.40	Not Guaged		5.1		5.12	
PIEZOMETERS								
HAMILTON			WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)
	PZ-1		1.81	1.85	2.79	DRY	DRY	DRY
	PZ-2		2.06	2.21	2.21	2.46	2.61	2.66
	PZ-3		2.06	2.09	2.30	2.28	2.45	2.45

Notes:

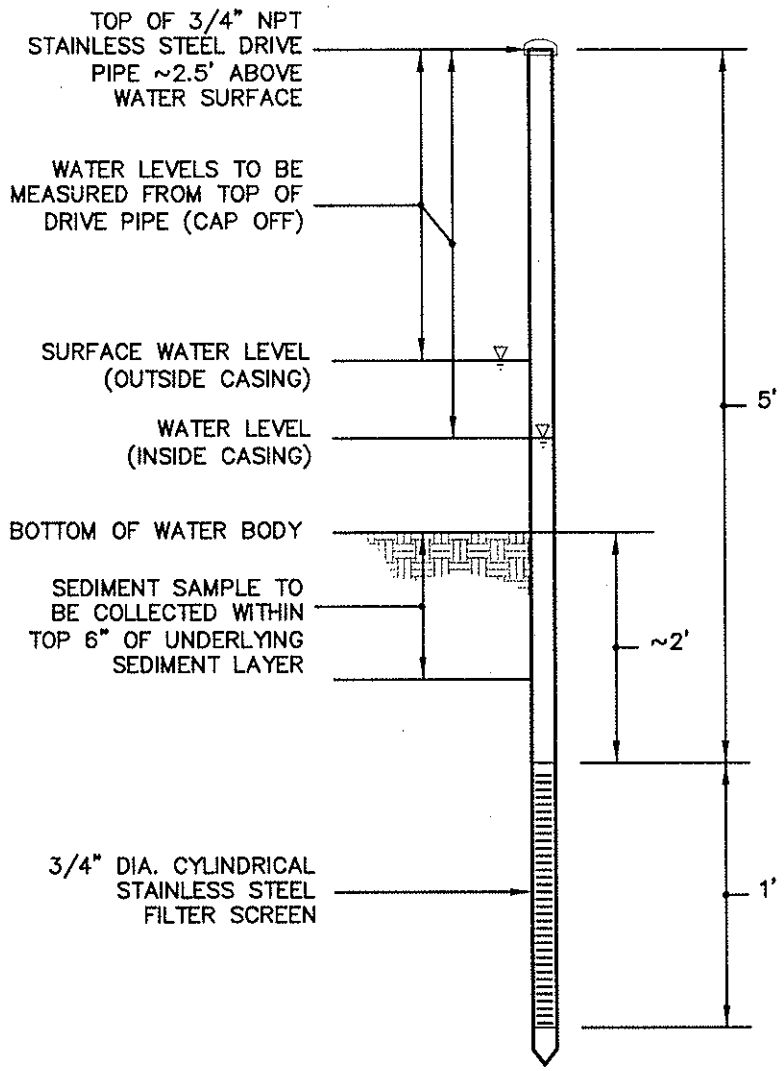
1. Groundwater levels at the monitoring wells were measured from the top of PVC riser.
2. Water depths were measured from the top of the piezometer drive pipe (cap off) from both inside and outside the casing at the three piezometers locations.
3. * Manchester well screen depths provided in Appendix B of July 1996 Manchester CSA Report, prepared by CDM.

TABLE 7
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program

ROUND 4 - Scheduled for December of 2007

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	**Not Applicable for Round 4**
		PCBs and Pesticides	**Not Applicable for Round 4**

NOTES:
1. Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.



NOTES:

1. INSTALLED MODEL 615N STAINLESS STEEL DRIVE POINT PIEZOMETERS FROM SOLINST.
2. PIEZOMETERS WERE INSTALLED WITH DIRECT PUSH TECHNOLOGY USING A MANUAL SLIDE HAMMER.
3. PIEZOMETERS WERE INSTALLED FOR HYDRAULIC HEAD MEASUREMENTS.

PIEZOMETER DETAIL (PZ-1, 2 & 3)

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A

SEA CONSULTANTS INC.
Scientists/Engineers/Architects

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LOW FLOW GROUNDWATER MONITORING REPORT

Client: SEA Consultants
215 First Street, Suite 320
Cambridge, MA 02142

Attention: Mr. Michael Looney
Report Date: November 5, 2007

Site Location:	Hamilton Sanitary Landfill
Sample Date:	October 25, 2007
Weather Conditions:	Sunny, +/- 60°F
Field Technician(s):	Adam Wallenstein, Ryan Decker, Jesse Munoz

Location ID	SWL (feet)	pH (S.U.)	Cond (mS/cm)	Temp (°C)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-1	7.43	6.38	0.144	9.63	0.24	9.2	-67
MW-2 DRY	--	--	--	--	--	--	--
MW-3	9.55	5.62	0.219	10.36	0.20	0.78	-7
MW-4S	8.52	6.29	0.209	10.89	1.29	4.75	-15
MW-4D	8.46	5.81	0.571	9.62	0.27	9.2	-36
MW-5	15.79	6.60	0.654	12.48	0.25	1.02	1
MW-6S	24.58	5.61	0.353	9.78	0.48	4.31	-14
MW-6D	23.44	6.51	0.347	10.09	0.45	0.00	-21
SW-1	--	--	--	--	--	--	--
SW-2	--	6.04	0.290	13.81	5.24	--	104
SW-3	--	6.73	0.219	15.32	5.73	--	74

Location ID	Total Depth (feet)	SWL (feet)
Manchester-1S	16.30	4.79
Manchester-2S	27.45	5.62
Manchester-6S	~~35.40~~	5.12
Manchester-5S	14.94	6.97

14.42 - CONFIRMED BY SEA 12/5/07

Location ID	Depth Inside Casing (feet)	Depth Outside Casing (feet)
PZ-1 DRY	--	--
PZ-2	2.61	2.66
PZ-3	2.45	2.45

Note(s):

- Appropriately preserved samples delivered to Alpha Analytical, Westborough, MA with the associated Chain of Custody documentation.
- Static Water Levels were measured from top of PVC Riser unless indicated otherwise.
- Measurements listed above indicate final stabilized field analytical results.
- Samples collected for dissolved metals analysis were field filtered to 0.45 micron.
- * MS-2, SW-1 and PZ-1 were dry - no samples/measurments collected.

Reviewed By: JEL

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-1

LOCATION: Hamilton LF / [illegible]

SAMPLING CREW: AW RD JM | DATE: 10/25 | SAMPLE TIME: 1425

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geopump

DEPTH TO WATER: 7.43 (FT) | WELL DEPTH: 17.20 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1400	17.45	200	1	10.79	0.158	7.07	-92	5.09	82.1	
1405	17.45	200	2	11.06	0.145	6.46	-67	0.79	74.5	
1410	17.45	200	3	10.17	0.145	6.45	-66	0.51	40.4	
1415	17.45	200	4	9.60	0.144	6.41	-67	0.28	22.9	
1420	17.45	200	5	9.63	0.144	6.40	-67	0.25	15.8	
1425	17.45	200	6	9.63	0.144	6.38	-67	0.24	9.2	

FINAL FIELD DATA

pH: (S.U.) | DO: (mg/L) | COMMENTS: DTW

SPECIFIC CONDUCTANCE: (mS/cm) | TURBIDITY: (NTU)

TEMPERATURE: (°C) | ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear no odor.

WEATHER CONDITIONS: Sunny 60°

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-3

LOCATION: Hamilton LF / Manchester

SAMPLING CREW: RD/AW/JM | DATE: 10/25/07 | SAMPLE TIME: 1440

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geotech

DEPTH TO WATER: 9.55' (FT) | WELL DEPTH: 17.32' (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1410	9.59	200 ml/min	1	11.10	0.228	6.38	1	1.30	4.58	
1415	9.59	"	2	10.61	0.222	5.75	-15	0.34	4.96	
1420	9.59	"	3	10.48	0.223	5.67	-18	0.27	4.42	
1425	9.59	"	4	10.43	0.223	5.65	-17	0.24	4.44	
1430	9.59	"	5	10.37	0.219	5.61	-8	0.21	2.91	
1435	9.59	"	6	10.35	0.219	5.61	-7	0.20	1.02	
1440	9.59	"	7	10.36	0.219	5.62	-7	0.20	0.78	

FINAL FIELD DATA

pH: 5.62 (S.U.) | DO: 0.20 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.219 (mS/cm) | TURBIDITY: 0.78 (NTU)

TEMPERATURE: 10.36 (°C) | ORP: -7 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: cloudy / ~62°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: MW-45

LOCATION: Hamilton LF / Manchester LF

SAMPLING CREW: AW, JM, RD DATE: 10/25/02 SAMPLE TIME: 11:50

PURGING DATA

REFERENCE POINT: PVC Steel Casing PURGING DEVICE: Geo-Pump

DEPTH TO WATER: 8.58 ~~9.52~~ ~~[illegible]~~ (FT) WELL DEPTH: ~~[illegible]~~ 14.94 (FT) Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
11:30	8.58	200	1	10.80	0.234	6.41	-14	0.79	7.13	
11:35	8.58	200	2	10.85	0.226	6.35	-14	0.98	5.78	
11:40	8.58	200	3	10.87	0.219	6.33	-14	1.11	5.60	
11:45	8.58	200	4	10.90	0.211	6.30	-15	1.19	7.10	
11:50	8.58	200	5	10.89	0.209	6.29	-15	1.29	4.75	

FINAL FIELD DATA

pH: (S.U.) DO: (mg/L) COMMENTS:

SPECIFIC CONDUCTANCE: (mS/cm) TURBIDITY: (NTU)

TEMPERATURE: (°C) ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS: Overcast

WELL CONDITION DATA

Protective Casing Present: Y N Concrete pad present: Y N Cap on riser: Y N

Protective Casing Locked: Y N Standing Water: Y N Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE: [illegible]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: MW-4B

LOCATION: Hamilton LF / Manchester

SAMPLING CREW: RD/JM/AW DATE: 10/25/07 SAMPLE TIME: 1145

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing PURGING DEVICE: Geotech

DEPTH TO WATER: (ICM) ~~37.52~~ 8.46 (FT) WELL DEPTH: (ICM) ~~8.46~~ 37.52 (FT) Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1125	8.53	300 ml/min	1	9.83	0.567	6.07	-21	0.75	13.2	
1130	8.54	"	2	9.68	0.570	5.85	-28	0.34	18.9	
1135	8.54	"	3	9.65	0.570	5.83	-31	0.30	14.1	
1140	8.54	"	4	9.60	0.572	5.80	-35	0.27	11.7	
1145	8.54	"	5	9.62	0.571	5.81	-36	0.27	9.2	

FINAL FIELD DATA

pH: 5.81 (S.U.) DO: 0.27 (mg/L) COMMENTS:

SPECIFIC CONDUCTANCE: 0.571 (mS/cm) TURBIDITY: 9.2 (NTU)

TEMPERATURE: 9.62 (°C) ORP: -36 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/ no odor

WEATHER CONDITIONS: cloudy/ ~60°

WELL CONDITION DATA

Protective Casing Present: (Y) N Concrete pad present: Y (N) Cap on riser: (Y) N

Protective Casing Locked: (Y) N Standing Water: Y (N) Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: MW-5

LOCATION: Hamilton LF / Manchester LF

SAMPLING CREW: RD/AW/JM DATE: 10/25/07 SAMPLE TIME: 1545

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing PURGING DEVICE: Geotech

DEPTH TO WATER: 15.79 (FT) WELL DEPTH: 20.17 (FT) Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1525	15.89	200 ml/min	1	12.52	0.658	6.62	27	0.84	2.21	
1530	15.89	"	2	12.49	0.654	6.58	18	0.33	1.14	
1535	15.89	"	3	12.49	0.652	6.59	4	0.26	1.33	
1540	15.89	"	4	12.48	0.653	6.61	2	0.24	1.08	
1545	15.89	"	5	12.48	0.654	6.60	1	0.25	1.02	

FINAL FIELD DATA

pH: 6.60 (S.U.) DO: 0.25 (mg/L) COMMENTS:

SPECIFIC CONDUCTANCE: 0.654 (mS/cm) TURBIDITY: 1.02 (NTU)

TEMPERATURE: 12.48 (°C) ORP: 1 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: cloudy / ~65°

WELL CONDITION DATA

Protective Casing Present: (Y) N Concrete pad present: Y (N) Cap on riser: (Y) N

Protective Casing Locked: (Y) N Standing Water: Y (N) Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [illegible]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-6S

LOCATION: Hamilton LF/Manchester LF

SAMPLING CREW: RO/JM/AW | DATE: 10/25/07 | SAMPLE TIME: 1010

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geotech

DEPTH TO WATER: 24.58 (FT) | WELL DEPTH: 30.05 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
0940	24.62	200ml/min	1	10.13	0.357	5.17	38	5.15	23.5	
0945	24.64	"	2	9.86	0.348	5.65	18	1.77	81.0	
0950	24.64	"	3	9.82	0.350	5.68	7	1.01	54.8	
0955	24.64	"	4	9.78	0.351	5.68	-6	0.74	35.7	
1000	24.64	"	5	9.79	0.353	5.67	-9	0.58	20.2	
1005	24.64	"	6	9.77	0.353	5.62	-13	0.48	6.42	
1010	24.64	"	7	9.78	0.353	5.61	-14	0.48	4.31	

FINAL FIELD DATA

pH: 5.61 (S.U.) | DO: 0.48 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.353 (mS/cm) | TURBIDITY: 4.31 (NTU)

TEMPERATURE: 9.78 (°C) | ORP: -14 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/no odor

WEATHER CONDITIONS: lt. rain/ ~60°F

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: 6D

LOCATION: Hamilton LF/Manchester LF

SAMPLING CREW: RD, JM, AW | DATE: 10/25 | SAMPLE TIME: 10:00

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: GSO-pump

DEPTH TO WATER: 23.44 (FT) | WELL DEPTH: 47.72 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
9:40	23.43	200	1	10.52	0.371	6.35	4	1.60	3.48	
9:45	23.43	200	2	10:12	0.348	6.44	-4	0.43	1.16	
9:50	23.43	200	3	10:10	0.346	6.46	-15	0.41	0.17	
9:55	23.43	200	4	10:08	0.346	6.48	-18	0.60	1.20	
10:00	23.43	200	5	10:09	0.347	6.51	-21	0.45	0.0	

FINAL FIELD DATA

pH: 6.51 (S.U.) | DO: 0.45 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.347 (mS/cm) | TURBIDITY: 0.0 (NTU)

TEMPERATURE: 10.09 (°C) | ORP: -21 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: lt. rain / ~60°

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: SW-1 PZ-1 Sed-1

LOCATION: Hamilton LF/Manchester LF

SAMPLING CREW: AU RD JM DATE: 10/25/07 SAMPLE TIME: 1315

PURGING DATA

REFERENCE POINT: PVC Steel Casing PURGING DEVICE:

DEPTH TO WATER (FT) WELL DEPTH (FT) Well Diameter

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS

FINAL FIELD DATA

pH: (S.U.) DO: (mg/L) COMMENTS: SW-1 is dry, PZ-1 is dry, collected Sed-1

SPECIFIC CONDUCTANCE: (mS/cm) TURBIDITY: (NTU)

TEMPERATURE: (°C) ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: Y N Concrete pad present: Y N Cap on riser: Y N

Protective Casing Locked: Y N Standing Water: Y N Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: _____ WELL ID: SW-2, sed-2, PZ-2

LOCATION: Hamilton LF/Manchester LF

SAMPLING CREW: AW RD JM DATE: 10/25/07 SAMPLE TIME: 1130

PURGING DATA

REFERENCE POINT: PVC Steel Casing PURGING DEVICE: _____

DEPTH TO WATER _____ (FT) WELL DEPTH _____ (FT) Well Diameter _____

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS

FINAL FIELD DATA

pH: 6.04 (S.U.) DO: 5.24 (mg/L) COMMENTS: PZ-2 DTW_D 2.61

SPECIFIC CONDUCTANCE: 0.290 (mS/cm) TURBIDITY: – (NTU)

TEMPERATURE: 13.81 (°C) ORP: 104 (MV) DTW_out 2.66

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear no odor

WEATHER CONDITIONS: _____

WELL CONDITION DATA

Protective Casing Present: Y N Concrete pad present: Y N Cap on riser: Y N

Protective Casing Locked: Y N Standing Water: Y N Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe: _____

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: Sw.3, Sed.3 Pz.3

LOCATION: Hamilton LF/Manchester LF

SAMPLING CREW: AU RD JM | DATE: 10/25/02 | SAMPLE TIME: 1215

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE:

DEPTH TO WATER (FT) | WELL DEPTH (FT) | Well Diameter

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS

FINAL FIELD DATA

pH: 6.73 (S.U.) | DO: 5.73 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.219 (mS/cm) | TURBIDITY: - (NTU) | Pz.1 OTV_{in} - 2.45 OTV_{out} 2.45

TEMPERATURE: 15.32 (°C) | ORP: 74 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear no odor.

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: Y N | Concrete pad present: Y N | Cap on riser: Y N

Protective Casing Locked: Y N | Standing Water: Y N | Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

MPLE SIGN RE:

ALPHA
WOODS HOLE LABS

ANALYTICAL REPORT

Lab Number:	L0716044
Client:	SEA Consultants 215 First Street Suite 320 Cambridge, MA 02142
ATTN:	Michael Looney
Project Name:	HAMILTON SANITARY LANDFILL
Project Number:	Not Specified
Report Date:	11/05/07

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (200305), NJ (MA935), RI (LAO00065), ME (2006012), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Sample Location
L0716044-01	MW-1	HAMILTON, MA
L0716044-02	MW-3	HAMILTON, MA
L0716044-03	MW-4S	HAMILTON, MA
L0716044-04	MW-4D	HAMILTON, MA
L0716044-05	MW-5	HAMILTON, MA
L0716044-06	MW-6S	HAMILTON, MA
L0716044-07	MW-6D	HAMILTON, MA
L0716044-08	SW-2	HAMILTON, MA
L0716044-09	SW-3	HAMILTON, MA
L0716044-10	SED-1	HAMILTON, MA
L0716044-11	SED-2	HAMILTON, MA
L0716044-12	SED-3	HAMILTON, MA

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	N/A

A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Case Narrative

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

Sample Receipt

The samples were Field Filtered for Dissolved Metals only.

Volatile Organics

In reference to question E:

The WG300538-1/2 LCSD % recovery for Carbon tetrachloride is above, and the LCSD % recovery for 1,4-Dioxane, a difficult analyte, is below, the individual acceptance criteria for the compounds, but within the overall method allowances.

The WG300557-1/2 LCS/LCSD % recoveries for Dichlorodifluoromethane and Acetone, as well as the LCSD % recoveries for 2-Butanone and 1,4-Dioxane, all difficult analytes, are above the individual acceptance criteria for the compounds, but within the overall method allowances.

Semivolatile Organics

In reference to question E:

The WG299982-2/3 LCS/LCSD % recoveries for Aniline, Phenol, and 4-Chloroaniline, as well as the LCS % recovery for 4-Nitrophenol, are below the individual acceptance criteria for the compounds, but within the overall method allowances. The LCS/LCSD RPD for 2,4-Dichlorophenol is above method acceptance criteria.

The WG300136-2/3 LCS/LCSD % recoveries for 4-Chloroaniline are below the individual acceptance criteria for the compound, but within the overall method allowances.

PCB

L0716044-08 has elevated detection limits due to the limited sample volume available for analysis.

In reference to question E:

The WG300104-2/3 LCS/LCSD RPD for Aroclor 1016 is above method acceptance criteria.

Pesticides

L0716044-10 and -11 have elevated detection limits due to the dilutions required by the matrix of the samples.

Metals

Case Narrative (continued)

L0716044-08 and -09 could not achieve the MCP Toxicity-required detection limits.

In reference to question E:

Calcium is present in the WG300667-1 method blank, however, all associated sample results are greater than 10x the amount detected in the blank.

In reference to question F:

At the client's request, all submitted samples were not analyzed for the full MCP list of compounds specified for the Method.

Non-MCP Related Narratives

Sulfate

L0716044-06 and -07 have elevated detection limits due to the dilutions required by the elevated concentrations of sulfate in the samples.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kevin L. Westover

Title: Technical Director/Representative Date: 11/05/07

ALPHA

ORGANICS

VOLATILES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 15:40		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	113		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 16:19		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	2.9		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0716044-02
Client ID: MW-3
Sample Location: HAMILTON, MA

Date Collected: 10/25/07 14:40
Date Received: 10/26/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	112		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 16:58		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	0.55		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	5.5		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	116		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 17:37		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	2.9		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	0.56		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	0.63		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	26		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	119		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 18:15		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	114		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 18:54		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0716044-06
Client ID: MW-6S
Sample Location: HAMILTON, MA

Date Collected: 10/25/07 10:10
Date Received: 10/26/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	110		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 19:33		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	2.3		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	119		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B.		
Analytical Date:	11/01/07 20:12		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0716044-08
Client ID: SW-2
Sample Location: HAMILTON, MA

Date Collected: 10/25/07 11:30
Date Received: 10/26/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	117		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	11/01/07 20:51		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50,	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	117		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Anaytical Method:	60,8260B		
Analytical Date:	10/31/07 18:09		
Analyst:	BS		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Methylene chloride	ND		ug/kg	1200	1
1,1-Dichloroethane	ND		ug/kg	190	1
Chloroform	ND		ug/kg	190	1
Carbon tetrachloride	ND		ug/kg	120	1
1,2-Dichloropropane	ND		ug/kg	440	1
Dibromochloromethane	ND		ug/kg	120	1
1,1,2-Trichloroethane	ND		ug/kg	190	1
Tetrachloroethene	ND		ug/kg	120	1
Chlorobenzene	ND		ug/kg	120	1
Trichlorofluoromethane	ND		ug/kg	630	1
1,2-Dichloroethane	ND		ug/kg	120	1
1,1,1-Trichloroethane	ND		ug/kg	120	1
Bromodichloromethane	ND		ug/kg	120	1
trans-1,3-Dichloropropene	ND		ug/kg	120	1
cis-1,3-Dichloropropene	ND		ug/kg	120	1
1,1-Dichloropropene	ND		ug/kg	630	1
Bromoform	ND		ug/kg	500	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	120	1
Benzene	ND		ug/kg	120	1
Toluene	ND		ug/kg	190	1
Ethylbenzene	ND		ug/kg	120	1
Chloromethane	ND		ug/kg	630	1
Bromomethane	ND		ug/kg	250	1
Vinyl chloride	ND		ug/kg	250	1
Chloroethane	ND		ug/kg	250	1
1,1-Dichloroethene	ND		ug/kg	120	1
trans-1,2-Dichloroethene	ND		ug/kg	190	1
Trichloroethene	ND		ug/kg	120	1
1,2-Dichlorobenzene	ND		ug/kg	630	1
1,3-Dichlorobenzene	ND		ug/kg	630	1

SAMPLE RESULTS

Lab ID: L0716044-10
Client ID: SED-1
Sample Location: HAMILTON, MA

Date Collected: 10/25/07 13:15
Date Received: 10/26/07
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
1,4-Dichlorobenzene	ND		ug/kg	630	1
Methyl tert butyl ether	ND		ug/kg	250	1
p/m-Xylene	ND		ug/kg	250	1
o-Xylene	ND		ug/kg	250	1
cis-1,2-Dichloroethene	ND		ug/kg	120	1
Dibromomethane	ND		ug/kg	1200	1
1,2,3-Trichloropropane	ND		ug/kg	1200	1
Styrene	ND		ug/kg	250	1
Dichlorodifluoromethane	ND		ug/kg	1200	1
Acetone	ND		ug/kg	1200	1
Carbon disulfide	ND		ug/kg	6300	1
2-Butanone	ND		ug/kg	1200	1
4-Methyl-2-pentanone	ND		ug/kg	1200	1
2-Hexanone	ND		ug/kg	1200	1
Bromochloromethane	ND		ug/kg	630	1
Tetrahydrofuran	ND		ug/kg	2500	1
2,2-Dichloropropane	ND		ug/kg	630	1
1,2-Dibromoethane	ND		ug/kg	500	1
1,3-Dichloropropane	ND		ug/kg	630	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	120	1
Bromobenzene	ND		ug/kg	630	1
n-Butylbenzene	ND		ug/kg	120	1
sec-Butylbenzene	ND		ug/kg	120	1
tert-Butylbenzene	ND		ug/kg	630	1
o-Chlorotoluene	ND		ug/kg	630	1
p-Chlorotoluene	ND		ug/kg	630	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	630	1
Hexachlorobutadiene	ND		ug/kg	630	1
Isopropylbenzene	ND		ug/kg	120	1
p-Isopropyltoluene	ND		ug/kg	120	1
Naphthalene	ND		ug/kg	630	1
n-Propylbenzene	ND		ug/kg	120	1
1,2,3-Trichlorobenzene	ND		ug/kg	630	1
1,2,4-Trichlorobenzene	ND		ug/kg	630	1
1,3,5-Trimethylbenzene	ND		ug/kg	630	1
1,2,4-Trimethylbenzene	ND		ug/kg	630	1
Ethyl ether	ND		ug/kg	630	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Isopropyl Ether	ND		ug/kg	500	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	500	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	500	1
1,4-Dioxane	ND		ug/kg	63000	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	102		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Anaytical Method:	60,8260B		
Analytical Date:	10/31/07 18:48		
Analyst:	BS		
Percent Solids:	52%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Methylene chloride	ND		ug/kg	2800	1
1,1-Dichloroethane	ND		ug/kg	410	1
Chloroform	ND		ug/kg	410	1
Carbon tetrachloride	ND		ug/kg	280	1
1,2-Dichloropropane	ND		ug/kg	960	1
Dibromochloromethane	ND		ug/kg	280	1
1,1,2-Trichloroethane	ND		ug/kg	410	1
Tetrachloroethene	ND		ug/kg	280	1
Chlorobenzene	ND		ug/kg	280	1
Trichlorofluoromethane	ND		ug/kg	1400	1
1,2-Dichloroethane	ND		ug/kg	280	1
1,1,1-Trichloroethane	ND		ug/kg	280	1
Bromodichloromethane	ND		ug/kg	280	1
trans-1,3-Dichloropropene	ND		ug/kg	280	1
cis-1,3-Dichloropropene	ND		ug/kg	280	1
1,1-Dichloropropene	ND		ug/kg	1400	1
Bromoform	ND		ug/kg	1100	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	280	1
Benzene	ND		ug/kg	280	1
Toluene	ND		ug/kg	410	1
Ethylbenzene	ND		ug/kg	280	1
Chloromethane	ND		ug/kg	1400	1
Bromomethane	ND		ug/kg	550	1
Vinyl chloride	ND		ug/kg	550	1
Chloroethane	ND		ug/kg	550	1
1,1-Dichloroethene	ND		ug/kg	280	1
trans-1,2-Dichloroethene	ND		ug/kg	410	1
Trichloroethene	ND		ug/kg	280	1
1,2-Dichlorobenzene	ND		ug/kg	1400	1
1,3-Dichlorobenzene	ND		ug/kg	1400	1

SAMPLE RESULTS

Lab ID: L0716044-11 Date Collected: 10/25/07 11:30
Client ID: SED-2 Date Received: 10/26/07
Sample Location: HAMILTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
1,4-Dichlorobenzene	ND		ug/kg	1400	1
Methyl tert butyl ether	ND		ug/kg	550	1
p/m-Xylene	ND		ug/kg	550	1
o-Xylene	ND		ug/kg	550	1
cis-1,2-Dichloroethene	ND		ug/kg	280	1
Dibromomethane	ND		ug/kg	2800	1
1,2,3-Trichloropropane	ND		ug/kg	2800	1
Styrene	ND		ug/kg	550	1
Dichlorodifluoromethane	ND		ug/kg	2800	1
Acetone	ND		ug/kg	2800	1
Carbon disulfide	ND		ug/kg	14000	1
2-Butanone	ND		ug/kg	2800	1
4-Methyl-2-pentanone	ND		ug/kg	2800	1
2-Hexanone	ND		ug/kg	2800	1
Bromochloromethane	ND		ug/kg	1400	1
Tetrahydrofuran	ND		ug/kg	5500	1
2,2-Dichloropropane	ND		ug/kg	1400	1
1,2-Dibromoethane	ND		ug/kg	1100	1
1,3-Dichloropropane	ND		ug/kg	1400	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	280	1
Bromobenzene	ND		ug/kg	1400	1
n-Butylbenzene	ND		ug/kg	280	1
sec-Butylbenzene	ND		ug/kg	280	1
tert-Butylbenzene	ND		ug/kg	1400	1
o-Chlorotoluene	ND		ug/kg	1400	1
p-Chlorotoluene	ND		ug/kg	1400	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	1400	1
Hexachlorobutadiene	ND		ug/kg	1400	1
Isopropylbenzene	ND		ug/kg	280	1
p-Isopropyltoluene	ND		ug/kg	280	1
Naphthalene	ND		ug/kg	1400	1
n-Propylbenzene	ND		ug/kg	280	1
1,2,3-Trichlorobenzene	ND		ug/kg	1400	1
1,2,4-Trichlorobenzene	ND		ug/kg	1400	1
1,3,5-Trimethylbenzene	ND		ug/kg	1400	1
1,2,4-Trimethylbenzene	ND		ug/kg	1400	1
Ethyl ether	ND		ug/kg	1400	1

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Isopropyl Ether	ND		ug/kg	1100	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	1100	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	1100	1
1,4-Dioxane	ND		ug/kg	140000	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Anaytical Method:	60,8260B		
Analytical Date:	10/31/07 19:27		
Analyst:	BS		
Percent Solids:	75%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Methylene chloride	ND		ug/kg	1300	1
1,1-Dichloroethane	ND		ug/kg	200	1
Chloroform	ND		ug/kg	200	1
Carbon tetrachloride	ND		ug/kg	130	1
1,2-Dichloropropane	ND		ug/kg	470	1
Dibromochloromethane	ND		ug/kg	130	1
1,1,2-Trichloroethane	ND		ug/kg	200	1
Tetrachloroethene	ND		ug/kg	130	1
Chlorobenzene	ND		ug/kg	130	1
Trichlorofluoromethane	ND		ug/kg	670	1
1,2-Dichloroethane	ND		ug/kg	130	1
1,1,1-Trichloroethane	ND		ug/kg	130	1
Bromodichloromethane	ND		ug/kg	130	1
trans-1,3-Dichloropropene	ND		ug/kg	130	1
cis-1,3-Dichloropropene	ND		ug/kg	130	1
1,1-Dichloropropene	ND		ug/kg	670	1
Bromoform	ND		ug/kg	540	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	130	1
Benzene	ND		ug/kg	130	1
Toluene	ND		ug/kg	200	1
Ethylbenzene	ND		ug/kg	130	1
Chloromethane	ND		ug/kg	670	1
Bromomethane	ND		ug/kg	270	1
Vinyl chloride	ND		ug/kg	270	1
Chloroethane	ND		ug/kg	270	1
1,1-Dichloroethene	ND		ug/kg	130	1
trans-1,2-Dichloroethene	ND		ug/kg	200	1
Trichloroethene	ND		ug/kg	130	1
1,2-Dichlorobenzene	ND		ug/kg	670	1
1,3-Dichlorobenzene	ND		ug/kg	670	1

SAMPLE RESULTS

Lab ID: L0716044-12
Client ID: SED-3
Sample Location: HAMILTON, MA

Date Collected: 10/25/07 12:15
Date Received: 10/26/07
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
1,4-Dichlorobenzene	ND		ug/kg	670	1
Methyl tert butyl ether	ND		ug/kg	270	1
p/m-Xylene	ND		ug/kg	270	1
o-Xylene	ND		ug/kg	270	1
cis-1,2-Dichloroethene	ND		ug/kg	130	1
Dibromomethane	ND		ug/kg	1300	1
1,2,3-Trichloropropane	ND		ug/kg	1300	1
Styrene	ND		ug/kg	270	1
Dichlorodifluoromethane	ND		ug/kg	1300	1
Acetone	ND		ug/kg	1300	1
Carbon disulfide	ND		ug/kg	6700	1
2-Butanone	ND		ug/kg	1300	1
4-Methyl-2-pentanone	ND		ug/kg	1300	1
2-Hexanone	ND		ug/kg	1300	1
Bromochloromethane	ND		ug/kg	670	1
Tetrahydrofuran	ND		ug/kg	2700	1
2,2-Dichloropropane	ND		ug/kg	670	1
1,2-Dibromoethane	ND		ug/kg	540	1
1,3-Dichloropropane	ND		ug/kg	670	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	130	1
Bromobenzene	ND		ug/kg	670	1
n-Butylbenzene	ND		ug/kg	130	1
sec-Butylbenzene	ND		ug/kg	130	1
tert-Butylbenzene	ND		ug/kg	670	1
o-Chlorotoluene	ND		ug/kg	670	1
p-Chlorotoluene	ND		ug/kg	670	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	670	1
Hexachlorobutadiene	ND		ug/kg	670	1
Isopropylbenzene	ND		ug/kg	130	1
p-Isopropyltoluene	ND		ug/kg	130	1
Naphthalene	ND		ug/kg	670	1
n-Propylbenzene	ND		ug/kg	130	1
1,2,3-Trichlorobenzene	ND		ug/kg	670	1
1,2,4-Trichlorobenzene	ND		ug/kg	670	1
1,3,5-Trimethylbenzene	ND		ug/kg	670	1
1,2,4-Trimethylbenzene	ND		ug/kg	670	1
Ethyl ether	ND		ug/kg	670	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B/5035-High					
Isopropyl Ether	ND		ug/kg	540	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	540	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	540	1
1,4-Dioxane	ND		ug/kg	67000	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	104		70-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 10/31/07 10:25
Analyst: BS

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B/5035-High for sample(s): 10-12 Batch: WG300538-3				
Methylene chloride	ND		ug/kg	5.0
1,1-Dichloroethane	ND		ug/kg	0.75
Chloroform	ND		ug/kg	0.75
Carbon tetrachloride	ND		ug/kg	0.50
1,2-Dichloropropane	ND		ug/kg	1.8
Dibromochloromethane	ND		ug/kg	0.50
1,1,2-Trichloroethane	ND		ug/kg	0.75
Tetrachloroethene	ND		ug/kg	0.50
Chlorobenzene	ND		ug/kg	0.50
Trichlorofluoromethane	ND		ug/kg	2.5
1,2-Dichloroethane	ND		ug/kg	0.50
1,1,1-Trichloroethane	ND		ug/kg	0.50
Bromodichloromethane	ND		ug/kg	0.50
trans-1,3-Dichloropropene	ND		ug/kg	0.50
cis-1,3-Dichloropropene	ND		ug/kg	0.50
1,1-Dichloropropene	ND		ug/kg	2.5
Bromoform	ND		ug/kg	2.0
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50
Benzene	ND		ug/kg	0.50
Toluene	ND		ug/kg	0.75
Ethylbenzene	ND		ug/kg	0.50
Chloromethane	ND		ug/kg	2.5
Bromomethane	ND		ug/kg	1.0
Vinyl chloride	ND		ug/kg	1.0
Chloroethane	ND		ug/kg	1.0
1,1-Dichloroethene	ND		ug/kg	0.50
trans-1,2-Dichloroethene	ND		ug/kg	0.75
Trichloroethene	ND		ug/kg	0.50
1,2-Dichlorobenzene	ND		ug/kg	2.5
1,3-Dichlorobenzene	ND		ug/kg	2.5
1,4-Dichlorobenzene	ND		ug/kg	2.5

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 10/31/07 10:25
Analyst: BS

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B/5035-High for sample(s): 10-12 Batch: WG300538-3				
Methyl tert butyl ether	ND		ug/kg	1.0
p/m-Xylene	ND		ug/kg	1.0
o-Xylene	ND		ug/kg	1.0
cis-1,2-Dichloroethene	ND		ug/kg	0.50
Dibromomethane	ND		ug/kg	5.0
1,2,3-Trichloropropane	ND		ug/kg	5.0
Styrene	ND		ug/kg	1.0
Dichlorodifluoromethane	ND		ug/kg	5.0
Acetone	ND		ug/kg	5.0
Carbon disulfide	ND		ug/kg	25
2-Butanone	ND		ug/kg	5.0
4-Methyl-2-pentanone	ND		ug/kg	5.0
2-Hexanone	ND		ug/kg	5.0
Bromochloromethane	ND		ug/kg	2.5
Tetrahydrofuran	ND		ug/kg	10
2,2-Dichloropropane	ND		ug/kg	2.5
1,2-Dibromoethane	ND		ug/kg	2.0
1,3-Dichloropropane	ND		ug/kg	2.5
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50
Bromobenzene	ND		ug/kg	2.5
n-Butylbenzene	ND		ug/kg	0.50
sec-Butylbenzene	ND		ug/kg	0.50
tert-Butylbenzene	ND		ug/kg	2.5
o-Chlorotoluene	ND		ug/kg	2.5
p-Chlorotoluene	ND		ug/kg	2.5
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.5
Hexachlorobutadiene	ND		ug/kg	2.5
Isopropylbenzene	ND		ug/kg	0.50
p-Isopropyltoluene	ND		ug/kg	0.50
Naphthalene	ND		ug/kg	2.5
n-Propylbenzene	ND		ug/kg	0.50

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 10/31/07 10:25
Analyst: BS

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B/5035-High for sample(s): 10-12 Batch: WG300538-3				
1,2,3-Trichlorobenzene	ND		ug/kg	2.5
1,2,4-Trichlorobenzene	ND		ug/kg	2.5
1,3,5-Trimethylbenzene	ND		ug/kg	2.5
1,2,4-Trimethylbenzene	ND		ug/kg	2.5
Ethyl ether	ND		ug/kg	2.5
Isopropyl Ether	ND		ug/kg	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.0
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.0
1,4-Dioxane	ND		ug/kg	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	112		70-130

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 11/01/07 12:28
Analyst: RY

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-09 Batch: WG300557-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 11/01/07 12:28
Analyst: RY

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-09 Batch: WG300557-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 11/01/07 12:28
Analyst: RY

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-09 Batch: WG300557-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	116		70-130
Dibromofluoromethane	113		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B/5035-High Associated sample(s): 10-12 Batch: WG300538-1 WG300538-2					
Methylene chloride	100	98	70-130	2	25
1,1-Dichloroethane	97	99	70-130	2	25
Chloroform	103	105	70-130	2	25
Carbon tetrachloride	128	132	70-130	3	25
1,2-Dichloropropane	94	92	70-130	2	25
Dibromochloromethane	109	110	70-130	1	25
1,1,2-Trichloroethane	95	95	70-130	0	25
Tetrachloroethene	102	110	70-130	8	25
Chlorobenzene	95	96	70-130	1	25
Trichlorofluoromethane	117	122	70-130	4	25
1,2-Dichloroethane	104	104	70-130	0	25
1,1,1-Trichloroethane	113	114	70-130	1	25
Bromodichloromethane	108	105	70-130	3	25
trans-1,3-Dichloropropene	111	108	70-130	3	25
cis-1,3-Dichloropropene	103	100	70-130	3	25
1,1-Dichloropropene	99	102	70-130	3	25
Bromoform	112	108	70-130	4	50
1,1,2,2-Tetrachloroethane	111	102	70-130	8	25
Benzene	91	95	70-130	4	25
Toluene	94	100	70-130	6	25
Ethylbenzene	97	103	70-130	6	25

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B/5035-High Associated sample(s): 10-12 Batch: WG300538-1 WG300538-2					
Chloromethane	85	85	70-130	0	50
Bromomethane	81	78	70-130	4	50
Vinyl chloride	83	87	70-130	5	25
Chloroethane	95	98	70-130	3	25
1,1-Dichloroethene	101	102	70-130	1	25
trans-1,2-Dichloroethene	95	95	70-130	0	25
Trichloroethene	93	100	70-130	7	25
1,2-Dichlorobenzene	97	96	70-130	1	25
1,3-Dichlorobenzene	98	100	70-130	2	25
1,4-Dichlorobenzene	100	98	70-130	2	25
Methyl tert butyl ether	98	92	70-130	6	25
p/m-Xylene	100	106	70-130	6	25
o-Xylene	98	103	70-130	5	25
cis-1,2-Dichloroethene	95	94	70-130	1	25
Dibromomethane	102	100	70-130	2	25
1,2,3-Trichloropropane	108	108	70-130	0	25
Styrene	96	101	70-130	5	25
Dichlorodifluoromethane	79	78	70-130	1	50
Acetone	115	106	70-130	8	50
Carbon disulfide	84	87	70-130	4	25
2-Butanone	107	102	70-130	5	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B/5035-High Associated sample(s): 10-12 Batch: WG300538-1 WG300538-2					
4-Methyl-2-pentanone	92	86	70-130	7	50
2-Hexanone	102	94	70-130	8	50
Bromochloromethane	99	104	70-130	5	25
Tetrahydrofuran	96	96	70-130	0	25
2,2-Dichloropropane	125	130	70-130	4	50
1,2-Dibromoethane	98	100	70-130	2	25
1,3-Dichloropropane	97	96	70-130	1	25
1,1,1,2-Tetrachloroethane	110	110	70-130	0	25
Bromobenzene	96	96	70-130	0	25
n-Butylbenzene	99	108	70-130	9	25
sec-Butylbenzene	103	112	70-130	8	25
tert-Butylbenzene	100	107	70-130	7	25
o-Chlorotoluene	96	100	70-130	4	25
p-Chlorotoluene	96	101	70-130	5	25
1,2-Dibromo-3-chloropropane	114	114	70-130	0	50
Hexachlorobutadiene	96	105	70-130	9	25
Isopropylbenzene	107	117	70-130	9	25
p-Isopropyltoluene	104	111	70-130	7	25
Naphthalene	93	88	70-130	6	25
n-Propylbenzene	99	105	70-130	6	25
1,2,3-Trichlorobenzene	99	94	70-130	5	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B/5035-High Associated sample(s): 10-12 Batch: WG300538-1 WG300538-2					
1,2,4-Trichlorobenzene	99	96	70-130	3	25
1,3,5-Trimethylbenzene	98	104	70-130	6	25
1,2,4-Trimethylbenzene	98	101	70-130	3	25
Ethyl ether	92	90	70-130	2	25
Isopropyl Ether	90	89	70-130	1	25
Ethyl-Tert-Butyl-Ether	100	98	70-130	2	25
Tertiary-Amyl Methyl Ether	98	94	70-130	4	25
1,4-Dioxane	84	54	70-130	43	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		112		70-130
Toluene-d8	99		102		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	103		105		70-130

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-09 Batch: WG300557-1 WG300557-2					
Methylene chloride	110	116	70-130	5	25
1,1-Dichloroethane	100	102	70-130	2	25
Chloroform	104	108	70-130	4	25
Carbon tetrachloride	124	125	70-130	1	25
1,2-Dichloropropane	92	94	70-130	2	25
Dibromochloromethane	105	109	70-130	4	25
1,1,2-Trichloroethane	89	95	70-130	7	25
Tetrachloroethene	103	103	70-130	0	25
Chlorobenzene	92	93	70-130	1	25
Trichlorofluoromethane	127	126	70-130	1	25
1,2-Dichloroethane	115	121	70-130	5	25
1,1,1-Trichloroethane	116	118	70-130	2	25
Bromodichloromethane	106	112	70-130	6	25
trans-1,3-Dichloropropene	90	95	70-130	5	25
cis-1,3-Dichloropropene	95	100	70-130	5	25
1,1-Dichloropropene	100	100	70-130	0	25
Bromoform	102	110	70-130	8	50
1,1,2,2-Tetrachloroethane	73	78	70-130	7	25
Benzene	93	94	70-130	1	25
Toluene	89	90	70-130	1	25
Ethylbenzene	91	94	70-130	3	25

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-09 Batch: WG300557-1 WG300557-2					
Chloromethane	108	107	70-130	1	50
Bromomethane	92	97	70-130	5	50
Vinyl chloride	92	91	70-130	1	25
Chloroethane	83	84	70-130	1	25
1,1-Dichloroethene	94	96	70-130	2	25
trans-1,2-Dichloroethene	101	103	70-130	2	25
Trichloroethene	96	98	70-130	2	25
1,2-Dichlorobenzene	88	93	70-130	6	25
1,3-Dichlorobenzene	94	96	70-130	2	25
1,4-Dichlorobenzene	90	94	70-130	4	25
Methyl tert butyl ether	101	106	70-130	5	25
p/m-Xylene	94	95	70-130	1	25
o-Xylene	96	98	70-130	2	25
cis-1,2-Dichloroethene	97	104	70-130	7	25
Dibromomethane	108	114	70-130	5	25
1,2,3-Trichloropropane	74	76	70-130	3	25
Styrene	96	99	70-130	3	25
Dichlorodifluoromethane	**139**	**138**	70-130	1	50
Acetone	**188**	**176**	70-130	7	50
Carbon disulfide	86	89	70-130	3	25
2-Butanone	129	**141**	70-130	9	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-09 Batch: WG300557-1 WG300557-2					
4-Methyl-2-pentanone	110	125	70-130	13	50
2-Hexanone	108	122	70-130	12	50
Bromochloromethane	100	106	70-130	6	25
Tetrahydrofuran	96	112	70-130	15	25
2,2-Dichloropropane	89	106	70-130	17	50
1,2-Dibromoethane	98	105	70-130	7	25
1,3-Dichloropropane	87	95	70-130	9	25
1,1,1,2-Tetrachloroethane	104	107	70-130	3	25
Bromobenzene	94	93	70-130	1	25
n-Butylbenzene	90	90	70-130	0	25
sec-Butylbenzene	88	87	70-130	1	25
tert-Butylbenzene	91	91	70-130	0	25
o-Chlorotoluene	86	83	70-130	4	25
p-Chlorotoluene	86	87	70-130	1	25
1,2-Dibromo-3-chloropropane	94	98	70-130	4	50
Hexachlorobutadiene	111	114	70-130	3	25
Isopropylbenzene	103	103	70-130	0	25
p-Isopropyltoluene	97	96	70-130	1	25
Naphthalene	85	90	70-130	6	25
n-Propylbenzene	85	84	70-130	1	25
1,2,3-Trichlorobenzene	117	122	70-130	4	25

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-09 Batch: WG300557-1 WG300557-2					
1,2,4-Trichlorobenzene	116	119	70-130	3	25
1,3,5-Trimethylbenzene	88	87	70-130	1	25
1,2,4-Trimethylbenzene	88	91	70-130	3	25
Ethyl ether	78	84	70-130	7	25
Isopropyl Ether	94	98	70-130	4	25
Ethyl-Tert-Butyl-Ether	100	104	70-130	4	25
Tertiary-Amyl Methyl Ether	93	99	70-130	6	25
1,4-Dioxane	121	131	70-130	8	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		115		70-130
Toluene-d8	94		94		70-130
4-Bromofluorobenzene	88		90		70-130
Dibromofluoromethane	114		114		70-130

ALPHA

SEMIVOLATILES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 18:56		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.9	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.9	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.9	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.9	1
2,4-Dinitrophenol	ND		ug/l	30	1
Pentachlorophenol	ND		ug/l	9.9	1
Phenol	ND		ug/l	6.9	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		15-110
Phenol-d6	22		15-110
Nitrobenzene-d5	46		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	72		15-110
4-Terphenyl-d14	78		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/01/07 15:04		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.79	1
Hexachlorobenzene	ND		ug/l	0.79	1
Hexachloroethane	ND		ug/l	0.79	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	27		15-110
Phenol-d6	21		15-110
Nitrobenzene-d5	39		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	64		15-110
4-Terphenyl-d14	97		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 19:26		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.8	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		15-110
Phenol-d6	32		15-110
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	72		30-130
2,4,6-Tribromophenol	91		15-110
4-Terphenyl-d14	81		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/01/07 15:45		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		15-110
Phenol-d6	32		15-110
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	84		30-130
2,4,6-Tribromophenol	88		15-110
4-Terphenyl-d14	106		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 19:56		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.8	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		15-110
Phenol-d6	29		15-110
Nitrobenzene-d5	56		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	97		15-110
4-Terphenyl-d14	89		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 02:14		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	35		15-110
Phenol-d6	27		15-110
Nitrobenzene-d5	47		30-130
2-Fluorobiphenyl	62		30-130
2,4,6-Tribromophenol	90		15-110
4-Terphenyl-d14	102		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 20:26		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.6	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.6	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.8	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	19	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.7	1
2,4-Dichlorophenol	ND		ug/l	9.6	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.6	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.6	1
Phenol	ND		ug/l	6.7	1
2-Methylphenol	ND		ug/l	5.7	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.7	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		15-110
Phenol-d6	22		15-110
Nitrobenzene-d5	50		30-130
2-Fluorobiphenyl	48		30-130
2,4,6-Tribromophenol	79		15-110
4-Terphenyl-d14	82		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 03:00		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.19	1
2-Chloronaphthalene	ND		ug/l	0.19	1
Fluoranthene	ND		ug/l	0.19	1
Hexachlorobutadiene	ND		ug/l	0.48	1
Naphthalene	ND		ug/l	0.19	1
Benzo(a)anthracene	ND		ug/l	0.19	1
Benzo(a)pyrene	ND		ug/l	0.19	1
Benzo(b)fluoranthene	ND		ug/l	0.19	1
Benzo(k)fluoranthene	ND		ug/l	0.19	1
Chrysene	ND		ug/l	0.19	1
Acenaphthylene	ND		ug/l	0.19	1
Anthracene	ND		ug/l	0.19	1
Benzo(ghi)perylene	ND		ug/l	0.19	1
Fluorene	ND		ug/l	0.19	1
Phenanthrene	ND		ug/l	0.19	1
Dibenzo(a,h)anthracene	ND		ug/l	0.19	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.19	1
Pyrene	ND		ug/l	0.19	1
2-Methylnaphthalene	ND		ug/l	0.19	1
Pentachlorophenol	ND		ug/l	0.76	1
Hexachlorobenzene	ND		ug/l	0.76	1
Hexachloroethane	ND		ug/l	0.76	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		15-110
Phenol-d6	21		15-110
Nitrobenzene-d5	45		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	72		15-110
4-Terphenyl-d14	97		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 20:56		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.8	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	32		15-110
Phenol-d6	25		15-110
Nitrobenzene-d5	51		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	88		15-110
4-Terphenyl-d14	81		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 03:46		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		15-110
Phenol-d6	24		15-110
Nitrobenzene-d5	47		30-130
2-Fluorobiphenyl	59		30-130
2,4,6-Tribromophenol	82		15-110
4-Terphenyl-d14	102		30-130

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 21:26		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	5.0	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1
Hexachlorobenzene	ND		ug/l	5.0	1
Bis(2-chloroethyl)ether	ND		ug/l	5.0	1
2-Chloronaphthalene	ND		ug/l	5.0	1
1,2-Dichlorobenzene	ND		ug/l	5.0	1
1,3-Dichlorobenzene	ND		ug/l	5.0	1
1,4-Dichlorobenzene	ND		ug/l	5.0	1
3,3'-Dichlorobenzidine	ND		ug/l	10	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1
Azobenzene	ND		ug/l	5.0	1
Fluoranthene	ND		ug/l	5.0	1
4-Bromophenyl phenyl ether	ND		ug/l	5.0	1
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1
Hexachlorobutadiene	ND		ug/l	10	1
Hexachloroethane	ND		ug/l	5.0	1
Isophorone	ND		ug/l	5.0	1
Naphthalene	ND		ug/l	5.0	1
Nitrobenzene	ND		ug/l	5.0	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0	1
Butyl benzyl phthalate	ND		ug/l	5.0	1
Di-n-butylphthalate	ND		ug/l	5.0	1
Di-n-octylphthalate	ND		ug/l	5.0	1
Diethyl phthalate	ND		ug/l	5.0	1
Dimethyl phthalate	ND		ug/l	5.0	1
Benzo(a)anthracene	ND		ug/l	5.0	1
Benzo(a)pyrene	ND		ug/l	5.0	1
Benzo(b)fluoranthene	ND		ug/l	5.0	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	5.0	1
Chrysene	ND		ug/l	5.0	1
Acenaphthylene	ND		ug/l	5.0	1
Anthracene	ND		ug/l	5.0	1
Benzo(ghi)perylene	ND		ug/l	5.0	1
Fluorene	ND		ug/l	5.0	1
Phenanthrene	ND		ug/l	5.0	1
Dibenzo(a,h)anthracene	ND		ug/l	5.0	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0	1
Pyrene	ND		ug/l	5.0	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	5.0	1
Dibenzofuran	ND		ug/l	5.0	1
2-Methylnaphthalene	ND		ug/l	5.0	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	1
2-Chlorophenol	ND		ug/l	6.0	1
2,4-Dichlorophenol	ND		ug/l	10	1
2,4-Dimethylphenol	ND		ug/l	5.0	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	10	1
2,4-Dinitrophenol	ND		ug/l	30	1
Pentachlorophenol	ND		ug/l	10	1
Phenol	ND		ug/l	7.0	1
2-Methylphenol	ND		ug/l	6.0	1
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		15-110
Phenol-d6	27		15-110
Nitrobenzene-d5	53		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	87		15-110
4-Terphenyl-d14	83		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 04:32		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.80	1
Hexachlorobenzene	ND		ug/l	0.80	1
Hexachloroethane	ND		ug/l	0.80	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	34		15-110
Phenol-d6	26		15-110
Nitrobenzene-d5	47		30-130
2-Fluorobiphenyl	62		30-130
2,4,6-Tribromophenol	84		15-110
4-Terphenyl-d14	107		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 21:56		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	5.0	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	1
Hexachlorobenzene	ND		ug/l	5.0	1
Bis(2-chloroethyl)ether	ND		ug/l	5.0	1
2-Chloronaphthalene	ND		ug/l	5.0	1
1,2-Dichlorobenzene	ND		ug/l	5.0	1
1,3-Dichlorobenzene	ND		ug/l	5.0	1
1,4-Dichlorobenzene	ND		ug/l	5.0	1
3,3'-Dichlorobenzidine	ND		ug/l	10	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1
2,6-Dinitrotoluene	ND		ug/l	5.0	1
Azobenzene	ND		ug/l	5.0	1
Fluoranthene	ND		ug/l	5.0	1
4-Bromophenyl phenyl ether	ND		ug/l	5.0	1
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1
Hexachlorobutadiene	ND		ug/l	10	1
Hexachloroethane	ND		ug/l	5.0	1
Isophorone	ND		ug/l	5.0	1
Naphthalene	ND		ug/l	5.0	1
Nitrobenzene	ND		ug/l	5.0	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0	1
Butyl benzyl phthalate	ND		ug/l	5.0	1
Di-n-butylphthalate	ND		ug/l	5.0	1
Di-n-octylphthalate	ND		ug/l	5.0	1
Diethyl phthalate	ND		ug/l	5.0	1
Dimethyl phthalate	ND		ug/l	5.0	1
Benzo(a)anthracene	ND		ug/l	5.0	1
Benzo(a)pyrene	ND		ug/l	5.0	1
Benzo(b)fluoranthene	ND		ug/l	5.0	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	5.0	1
Chrysene	ND		ug/l	5.0	1
Acenaphthylene	ND		ug/l	5.0	1
Anthracene	ND		ug/l	5.0	1
Benzo(ghi)perylene	ND		ug/l	5.0	1
Fluorene	ND		ug/l	5.0	1
Phenanthrene	ND		ug/l	5.0	1
Dibenzo(a,h)anthracene	ND		ug/l	5.0	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0	1
Pyrene	ND		ug/l	5.0	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	5.0	1
Dibenzofuran	ND		ug/l	5.0	1
2-Methylnaphthalene	ND		ug/l	5.0	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	1
2-Chlorophenol	ND		ug/l	6.0	1
2,4-Dichlorophenol	ND		ug/l	10	1
2,4-Dimethylphenol	ND		ug/l	5.0	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	10	1
2,4-Dinitrophenol	ND		ug/l	30	1
Pentachlorophenol	ND		ug/l	10	1
Phenol	ND		ug/l	7.0	1
2-Methylphenol	ND		ug/l	6.0	1
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		15-110
Phenol-d6	23		15-110
Nitrobenzene-d5	48		30-130
2-Fluorobiphenyl	48		30-130
2,4,6-Tribromophenol	76		15-110
4-Terphenyl-d14	81		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 11:38		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.80	1
Hexachlorobenzene	ND		ug/l	0.80	1
Hexachloroethane	ND		ug/l	0.80	1

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	32		15-110
Phenol-d6	23		15-110
Nitrobenzene-d5	46		30-130
2-Fluorobiphenyl	60		30-130
2,4,6-Tribromophenol	73		15-110
4-Terphenyl-d14	94		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 22:57		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.8	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Hexachlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
2-Chloronaphthalene	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	9.7	1
2,4-Dinitrotoluene	ND		ug/l	4.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
Fluoranthene	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorobutadiene	ND		ug/l	9.7	1
Hexachloroethane	ND		ug/l	4.8	1
Isophorone	ND		ug/l	4.8	1
Naphthalene	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.8	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Benzo(a)anthracene	ND		ug/l	4.8	1
Benzo(a)pyrene	ND		ug/l	4.8	1
Benzo(b)fluoranthene	ND		ug/l	4.8	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.8	1
Chrysene	ND		ug/l	4.8	1
Acenaphthylene	ND		ug/l	4.8	1
Anthracene	ND		ug/l	4.8	1
Benzo(ghi)perylene	ND		ug/l	4.8	1
Fluorene	ND		ug/l	4.8	1
Phenanthrene	ND		ug/l	4.8	1
Dibenzo(a,h)anthracene	ND		ug/l	4.8	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.8	1
Pyrene	ND		ug/l	4.8	1
Aniline	ND		ug/l	19	1
4-Chloroaniline	ND		ug/l	4.8	1
Dibenzofuran	ND		ug/l	4.8	1
2-Methylnaphthalene	ND		ug/l	4.8	1
Acetophenone	ND		ug/l	19	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.8	1
2,4-Dichlorophenol	ND		ug/l	9.7	1
2,4-Dimethylphenol	ND		ug/l	4.8	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.7	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.7	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.8	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.8	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		15-110
Phenol-d6	26		15-110
Nitrobenzene-d5	54		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	87		15-110
4-Terphenyl-d14	91		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 12:24		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.19	1
2-Chloronaphthalene	ND		ug/l	0.19	1
Fluoranthene	ND		ug/l	0.19	1
Hexachlorobutadiene	ND		ug/l	0.48	1
Naphthalene	ND		ug/l	0.19	1
Benzo(a)anthracene	ND		ug/l	0.19	1
Benzo(a)pyrene	ND		ug/l	0.19	1
Benzo(b)fluoranthene	ND		ug/l	0.19	1
Benzo(k)fluoranthene	ND		ug/l	0.19	1
Chrysene	ND		ug/l	0.19	1
Acenaphthylene	ND		ug/l	0.19	1
Anthracene	ND		ug/l	0.19	1
Benzo(ghi)perylene	ND		ug/l	0.19	1
Fluorene	ND		ug/l	0.19	1
Phenanthrene	ND		ug/l	0.19	1
Dibenzo(a,h)anthracene	ND		ug/l	0.19	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.19	1
Pyrene	ND		ug/l	0.19	1
2-Methylnaphthalene	ND		ug/l	0.19	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		15-110
Phenol-d6	25		15-110
Nitrobenzene-d5	47		30-130
2-Fluorobiphenyl	59		30-130
2,4,6-Tribromophenol	71		15-110
4-Terphenyl-d14	90		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C	Extraction Date:	10/29/07 09:10
Analytical Date:	10/30/07 23:27		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/l	4.9	1
1,2,4-Trichlorobenzene	ND		ug/l	4.9	1
Hexachlorobenzene	ND		ug/l	4.9	1
Bis(2-chloroethyl)ether	ND		ug/l	4.9	1
2-Chloronaphthalene	ND		ug/l	4.9	1
1,2-Dichlorobenzene	ND		ug/l	4.9	1
1,3-Dichlorobenzene	ND		ug/l	4.9	1
1,4-Dichlorobenzene	ND		ug/l	4.9	1
3,3'-Dichlorobenzidine	ND		ug/l	9.8	1
2,4-Dinitrotoluene	ND		ug/l	4.9	1
2,6-Dinitrotoluene	ND		ug/l	4.9	1
Azobenzene	ND		ug/l	4.9	1
Fluoranthene	ND		ug/l	4.9	1
4-Bromophenyl phenyl ether	ND		ug/l	4.9	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.9	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.9	1
Hexachlorobutadiene	ND		ug/l	9.8	1
Hexachloroethane	ND		ug/l	4.9	1
Isophorone	ND		ug/l	4.9	1
Naphthalene	ND		ug/l	4.9	1
Nitrobenzene	ND		ug/l	4.9	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.9	1
Butyl benzyl phthalate	ND		ug/l	4.9	1
Di-n-butylphthalate	ND		ug/l	4.9	1
Di-n-octylphthalate	ND		ug/l	4.9	1
Diethyl phthalate	ND		ug/l	4.9	1
Dimethyl phthalate	ND		ug/l	4.9	1
Benzo(a)anthracene	ND		ug/l	4.9	1
Benzo(a)pyrene	ND		ug/l	4.9	1
Benzo(b)fluoranthene	ND		ug/l	4.9	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/l	4.9	1
Chrysene	ND		ug/l	4.9	1
Acenaphthylene	ND		ug/l	4.9	1
Anthracene	ND		ug/l	4.9	1
Benzo(ghi)perylene	ND		ug/l	4.9	1
Fluorene	ND		ug/l	4.9	1
Phenanthrene	ND		ug/l	4.9	1
Dibenzo(a,h)anthracene	ND		ug/l	4.9	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	4.9	1
Pyrene	ND		ug/l	4.9	1
Aniline	ND		ug/l	20	1
4-Chloroaniline	ND		ug/l	4.9	1
Dibenzofuran	ND		ug/l	4.9	1
2-Methylnaphthalene	ND		ug/l	4.9	1
Acetophenone	ND		ug/l	20	1
2,4,6-Trichlorophenol	ND		ug/l	4.9	1
2-Chlorophenol	ND		ug/l	5.9	1
2,4-Dichlorophenol	ND		ug/l	9.8	1
2,4-Dimethylphenol	ND		ug/l	4.9	1
2-Nitrophenol	ND		ug/l	20	1
4-Nitrophenol	ND		ug/l	9.8	1
2,4-Dinitrophenol	ND		ug/l	29	1
Pentachlorophenol	ND		ug/l	9.8	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.9	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.9	1
2,4,5-Trichlorophenol	ND		ug/l	4.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	27		15-110
Phenol-d6	20		15-110
Nitrobenzene-d5	45		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	69		15-110
4-Terphenyl-d14	82		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8270C-SIM	Extraction Date:	10/29/07 09:10
Analytical Date:	11/02/07 13:11		
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					
Acenaphthene	ND		ug/l	0.20	1
2-Chloronaphthalene	ND		ug/l	0.20	1
Fluoranthene	ND		ug/l	0.20	1
Hexachlorobutadiene	ND		ug/l	0.49	1
Naphthalene	ND		ug/l	0.20	1
Benzo(a)anthracene	ND		ug/l	0.20	1
Benzo(a)pyrene	ND		ug/l	0.20	1
Benzo(b)fluoranthene	ND		ug/l	0.20	1
Benzo(k)fluoranthene	ND		ug/l	0.20	1
Chrysene	ND		ug/l	0.20	1
Acenaphthylene	ND		ug/l	0.20	1
Anthracene	ND		ug/l	0.20	1
Benzo(ghi)perylene	ND		ug/l	0.20	1
Fluorene	ND		ug/l	0.20	1
Phenanthrene	ND		ug/l	0.20	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	1
Pyrene	ND		ug/l	0.20	1
2-Methylnaphthalene	ND		ug/l	0.20	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C-SIM					

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	24		15-110
Phenol-d6	20		15-110
Nitrobenzene-d5	42		30-130
2-Fluorobiphenyl	52		30-130
2,4,6-Tribromophenol	63		15-110
4-Terphenyl-d14	87		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8270C	Extraction Date:	10/30/07 03:00
Analytical Date:	10/30/07 22:08		
Analyst:	AK		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/kg	380	1
1,2,4-Trichlorobenzene	ND		ug/kg	380	1
Hexachlorobenzene	ND		ug/kg	380	1
Bis(2-chloroethyl)ether	ND		ug/kg	380	1
2-Chloronaphthalene	ND		ug/kg	380	1
1,2-Dichlorobenzene	ND		ug/kg	380	1
1,3-Dichlorobenzene	ND		ug/kg	380	1
1,4-Dichlorobenzene	ND		ug/kg	380	1
3,3'-Dichlorobenzidine	ND		ug/kg	770	1
2,4-Dinitrotoluene	ND		ug/kg	380	1
2,6-Dinitrotoluene	ND		ug/kg	380	1
Azobenzene	ND		ug/kg	380	1
Fluoranthene	ND		ug/kg	380	1
4-Bromophenyl phenyl ether	ND		ug/kg	380	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	380	1
Bis(2-chloroethoxy)methane	ND		ug/kg	380	1
Hexachlorobutadiene	ND		ug/kg	770	1
Hexachloroethane	ND		ug/kg	380	1
Isophorone	ND		ug/kg	380	1
Naphthalene	ND		ug/kg	380	1
Nitrobenzene	ND		ug/kg	380	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	770	1
Butyl benzyl phthalate	ND		ug/kg	380	1
Di-n-butylphthalate	ND		ug/kg	380	1
Di-n-octylphthalate	ND		ug/kg	380	1
Diethyl phthalate	ND		ug/kg	380	1
Dimethyl phthalate	ND		ug/kg	380	1
Benzo(a)anthracene	ND		ug/kg	380	1
Benzo(a)pyrene	ND		ug/kg	380	1
Benzo(b)fluoranthene	ND		ug/kg	380	1

SAMPLE RESULTS

Lab ID: L0716044-10 Date Collected: 10/25/07 13:15
Client ID: SED-1 Date Received: 10/26/07
Sample Location: HAMILTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/kg	380	1
Chrysene	ND		ug/kg	380	1
Acenaphthylene	ND		ug/kg	380	1
Anthracene	ND		ug/kg	380	1
Benzo(ghi)perylene	ND		ug/kg	380	1
Fluorene	ND		ug/kg	380	1
Phenanthrene	ND		ug/kg	380	1
Dibenzo(a,h)anthracene	ND		ug/kg	380	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	380	1
Pyrene	ND		ug/kg	380	1
Aniline	ND		ug/kg	770	1
4-Chloroaniline	ND		ug/kg	380	1
Dibenzofuran	ND		ug/kg	380	1
2-Methylnaphthalene	ND		ug/kg	380	1
Acetophenone	ND		ug/kg	1500	1
2,4,6-Trichlorophenol	ND		ug/kg	380	1
2-Chlorophenol	ND		ug/kg	460	1
2,4-Dichlorophenol	ND		ug/kg	770	1
2,4-Dimethylphenol	ND		ug/kg	380	1
2-Nitrophenol	ND		ug/kg	1500	1
4-Nitrophenol	ND		ug/kg	770	1
2,4-Dinitrophenol	ND		ug/kg	1500	1
Pentachlorophenol	ND		ug/kg	1500	1
Phenol	ND		ug/kg	540	1
2-Methylphenol	ND		ug/kg	460	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	460	1
2,4,5-Trichlorophenol	ND		ug/kg	380	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	62		30-130
Phenol-d6	84		30-130
Nitrobenzene-d5	65		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	96		30-130
4-Terphenyl-d14	88		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8270C	Extraction Date:	10/30/07 03:00
Analytical Date:	10/30/07 22:32		
Analyst:	AK		
Percent Solids:	52%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/kg	640	1
1,2,4-Trichlorobenzene	ND		ug/kg	640	1
Hexachlorobenzene	ND		ug/kg	640	1
Bis(2-chloroethyl)ether	ND		ug/kg	640	1
2-Chloronaphthalene	ND		ug/kg	640	1
1,2-Dichlorobenzene	ND		ug/kg	640	1
1,3-Dichlorobenzene	ND		ug/kg	640	1
1,4-Dichlorobenzene	ND		ug/kg	640	1
3,3'-Dichlorobenzidine	ND		ug/kg	1300	1
2,4-Dinitrotoluene	ND		ug/kg	640	1
2,6-Dinitrotoluene	ND		ug/kg	640	1
Azobenzene	ND		ug/kg	640	1
Fluoranthene	ND		ug/kg	640	1
4-Bromophenyl phenyl ether	ND		ug/kg	640	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	640	1
Bis(2-chloroethoxy)methane	ND		ug/kg	640	1
Hexachlorobutadiene	ND		ug/kg	1300	1
Hexachloroethane	ND		ug/kg	640	1
Isophorone	ND		ug/kg	640	1
Naphthalene	ND		ug/kg	640	1
Nitrobenzene	ND		ug/kg	640	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	1300	1
Butyl benzyl phthalate	ND		ug/kg	640	1
Di-n-butylphthalate	ND		ug/kg	640	1
Di-n-octylphthalate	ND		ug/kg	640	1
Diethyl phthalate	ND		ug/kg	640	1
Dimethyl phthalate	ND		ug/kg	640	1
Benzo(a)anthracene	ND		ug/kg	640	1
Benzo(a)pyrene	ND		ug/kg	640	1
Benzo(b)fluoranthene	ND		ug/kg	640	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/kg	640	1
Chrysene	ND		ug/kg	640	1
Acenaphthylene	ND		ug/kg	640	1
Anthracene	ND		ug/kg	640	1
Benzo(ghi)perylene	ND		ug/kg	640	1
Fluorene	ND		ug/kg	640	1
Phenanthrene	ND		ug/kg	640	1
Dibenzo(a,h)anthracene	ND		ug/kg	640	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	640	1
Pyrene	ND		ug/kg	640	1
Aniline	ND		ug/kg	1300	1
4-Chloroaniline	ND		ug/kg	640	1
Dibenzofuran	ND		ug/kg	640	1
2-Methylnaphthalene	ND		ug/kg	640	1
Acetophenone	ND		ug/kg	2600	1
2,4,6-Trichlorophenol	ND		ug/kg	640	1
2-Chlorophenol	ND		ug/kg	770	1
2,4-Dichlorophenol	ND		ug/kg	1300	1
2,4-Dimethylphenol	ND		ug/kg	640	1
2-Nitrophenol	ND		ug/kg	2600	1
4-Nitrophenol	ND		ug/kg	1300	1
2,4-Dinitrophenol	ND		ug/kg	2600	1
Pentachlorophenol	ND		ug/kg	2600	1
Phenol	ND		ug/kg	900	1
2-Methylphenol	ND		ug/kg	770	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	770	1
2,4,5-Trichlorophenol	ND		ug/kg	640	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	50		30-130
2-Fluorobiphenyl	65		30-130
2,4,6-Tribromophenol	91		30-130
4-Terphenyl-d14	84		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8270C	Extraction Date:	10/30/07 03:00
Analytical Date:	10/30/07 22:55		
Analyst:	AK		
Percent Solids:	75%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Acenaphthene	ND		ug/kg	440	1
1,2,4-Trichlorobenzene	ND		ug/kg	440	1
Hexachlorobenzene	ND		ug/kg	440	1
Bis(2-chloroethyl)ether	ND		ug/kg	440	1
2-Chloronaphthalene	ND		ug/kg	440	1
1,2-Dichlorobenzene	ND		ug/kg	440	1
1,3-Dichlorobenzene	ND		ug/kg	440	1
1,4-Dichlorobenzene	ND		ug/kg	440	1
3,3'-Dichlorobenzidine	ND		ug/kg	890	1
2,4-Dinitrotoluene	ND		ug/kg	440	1
2,6-Dinitrotoluene	ND		ug/kg	440	1
Azobenzene	ND		ug/kg	440	1
Fluoranthene	ND		ug/kg	440	1
4-Bromophenyl phenyl ether	ND		ug/kg	440	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	440	1
Bis(2-chloroethoxy)methane	ND		ug/kg	440	1
Hexachlorobutadiene	ND		ug/kg	890	1
Hexachloroethane	ND		ug/kg	440	1
Isophorone	ND		ug/kg	440	1
Naphthalene	ND		ug/kg	440	1
Nitrobenzene	ND		ug/kg	440	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	890	1
Butyl benzyl phthalate	ND		ug/kg	440	1
Di-n-butylphthalate	ND		ug/kg	440	1
Di-n-octylphthalate	ND		ug/kg	440	1
Diethyl phthalate	ND		ug/kg	440	1
Dimethyl phthalate	ND		ug/kg	440	1
Benzo(a)anthracene	ND		ug/kg	440	1
Benzo(a)pyrene	ND		ug/kg	440	1
Benzo(b)fluoranthene	ND		ug/kg	440	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by MCP 8270C					
Benzo(k)fluoranthene	ND		ug/kg	440	1
Chrysene	ND		ug/kg	440	1
Acenaphthylene	ND		ug/kg	440	1
Anthracene	ND		ug/kg	440	1
Benzo(ghi)perylene	ND		ug/kg	440	1
Fluorene	ND		ug/kg	440	1
Phenanthrene	ND		ug/kg	440	1
Dibenzo(a,h)anthracene	ND		ug/kg	440	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	440	1
Pyrene	ND		ug/kg	440	1
Aniline	ND		ug/kg	890	1
4-Chloroaniline	ND		ug/kg	440	1
Dibenzofuran	ND		ug/kg	440	1
2-Methylnaphthalene	ND		ug/kg	440	1
Acetophenone	ND		ug/kg	1800	1
2,4,6-Trichlorophenol	ND		ug/kg	440	1
2-Chlorophenol	ND		ug/kg	530	1
2,4-Dichlorophenol	ND		ug/kg	890	1
2,4-Dimethylphenol	ND		ug/kg	440	1
2-Nitrophenol	ND		ug/kg	1800	1
4-Nitrophenol	ND		ug/kg	890	1
2,4-Dinitrophenol	ND		ug/kg	1800	1
Pentachlorophenol	ND		ug/kg	1800	1
Phenol	ND		ug/kg	620	1
2-Methylphenol	ND		ug/kg	530	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	530	1
2,4,5-Trichlorophenol	ND		ug/kg	440	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		30-130
Phenol-d6	77		30-130
Nitrobenzene-d5	61		30-130
2-Fluorobiphenyl	68		30-130
2,4,6-Tribromophenol	91		30-130
4-Terphenyl-d14	85		30-130

Project Name: HAMILTON SANITARY LANDFILL

Project Number: Not Specified

Lab Number: L0716044

Report Date: 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C-SIM
Analytical Date: 10/30/07 16:14
Analyst: RL

Extraction Method: EPA 3510C
Extraction Date: 10/29/07 09:10

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C-SIM for sample(s): 01-09 Batch: WG299980-1				
Acenaphthene	ND		ug/l	0.20
2-Chloronaphthalene	ND		ug/l	0.20
Fluoranthene	ND		ug/l	0.20
Hexachlorobutadiene	ND		ug/l	0.50
Naphthalene	ND		ug/l	0.20
Benzo(a)anthracene	ND		ug/l	0.20
Benzo(a)pyrene	ND		ug/l	0.20
Benzo(b)fluoranthene	ND		ug/l	0.20
Benzo(k)fluoranthene	ND		ug/l	0.20
Chrysene	ND		ug/l	0.20
Acenaphthylene	ND		ug/l	0.20
Anthracene	ND		ug/l	0.20
Benzo(ghi)perylene	ND		ug/l	0.20
Fluorene	ND		ug/l	0.20
Phenanthrene	ND		ug/l	0.20
Dibenzo(a,h)anthracene	ND		ug/l	0.20
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20
Pyrene	ND		ug/l	0.20
2-Methylnaphthalene	ND		ug/l	0.20
Pentachlorophenol	ND		ug/l	0.80
Hexachlorobenzene	ND		ug/l	0.80
Hexachloroethane	ND		ug/l	0.80

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C-SIM	Extraction Method:	EPA 3510C
Analytical Date:	10/30/07 16:14	Extraction Date:	10/29/07 09:10
Analyst:	RL		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C-SIM for sample(s): 01-09 Batch: WG299980-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	28		15-110
Phenol-d6	20		15-110
Nitrobenzene-d5	43		30-130
2-Fluorobiphenyl	50		30-130
2,4,6-Tribromophenol	53		15-110
4-Terphenyl-d14	76		30-130

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8270C
Analytical Date: 10/30/07 13:24
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/29/07 09:10

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-09 Batch: WG299982-1				
Acenaphthene	ND		ug/l	5.0
1,2,4-Trichlorobenzene	ND		ug/l	5.0
Hexachlorobenzene	ND		ug/l	5.0
Bis(2-chloroethyl)ether	ND		ug/l	5.0
2-Chloronaphthalene	ND		ug/l	5.0
1,2-Dichlorobenzene	ND		ug/l	5.0
1,3-Dichlorobenzene	ND		ug/l	5.0
1,4-Dichlorobenzene	ND		ug/l	5.0
3,3'-Dichlorobenzidine	ND		ug/l	10
2,4-Dinitrotoluene	ND		ug/l	5.0
2,6-Dinitrotoluene	ND		ug/l	5.0
Azobenzene	ND		ug/l	5.0
Fluoranthene	ND		ug/l	5.0
4-Bromophenyl phenyl ether	ND		ug/l	5.0
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0
Bis(2-chloroethoxy)methane	ND		ug/l	5.0
Hexachlorobutadiene	ND		ug/l	10
Hexachloroethane	ND		ug/l	5.0
Isophorone	ND		ug/l	5.0
Naphthalene	ND		ug/l	5.0
Nitrobenzene	ND		ug/l	5.0
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0
Butyl benzyl phthalate	ND		ug/l	5.0
Di-n-butylphthalate	ND		ug/l	5.0
Di-n-octylphthalate	ND		ug/l	5.0
Diethyl phthalate	ND		ug/l	5.0
Dimethyl phthalate	ND		ug/l	5.0
Benzo(a)anthracene	ND		ug/l	5.0
Benzo(a)pyrene	ND		ug/l	5.0
Benzo(b)fluoranthene	ND		ug/l	5.0
Benzo(k)fluoranthene	ND		ug/l	5.0

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3510C
Analytical Date:	10/30/07 13:24	Extraction Date:	10/29/07 09:10
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-09 Batch: WG299982-1				
Chrysene	ND		ug/l	5.0
Acenaphthylene	ND		ug/l	5.0
Anthracene	ND		ug/l	5.0
Benzo(ghi)perylene	ND		ug/l	5.0
Fluorene	ND		ug/l	5.0
Phenanthrene	ND		ug/l	5.0
Dibenzo(a,h)anthracene	ND		ug/l	5.0
Indeno(1,2,3-cd)Pyrene	ND		ug/l	5.0
Pyrene	ND		ug/l	5.0
Aniline	ND		ug/l	20
4-Chloroaniline	ND		ug/l	5.0
Dibenzofuran	ND		ug/l	5.0
2-Methylnaphthalene	ND		ug/l	5.0
Acetophenone	ND		ug/l	20
2,4,6-Trichlorophenol	ND		ug/l	5.0
2-Chlorophenol	ND		ug/l	6.0
2,4-Dichlorophenol	ND		ug/l	10
2,4-Dimethylphenol	ND		ug/l	5.0
2-Nitrophenol	ND		ug/l	20
4-Nitrophenol	ND		ug/l	10
2,4-Dinitrophenol	ND		ug/l	30
Pentachlorophenol	ND		ug/l	10
Phenol	ND		ug/l	7.0
2-Methylphenol	ND		ug/l	6.0
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0
2,4,5-Trichlorophenol	ND		ug/l	5.0

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3510C
Analytical Date:	10/30/07 13:24	Extraction Date:	10/29/07 09:10
Analyst:	PS		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 01-09 Batch: WG299982-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		15-110
Phenol-d6	20		15-110
Nitrobenzene-d5	49		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	62		15-110
4-Terphenyl-d14	70		30-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3545
Analytical Date:	10/30/07 20:08	Extraction Date:	10/30/07 03:00
Analyst:	AK		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 10-12 Batch: WG300136-1				
Acenaphthene	ND		ug/kg	330
1,2,4-Trichlorobenzene	ND		ug/kg	330
Hexachlorobenzene	ND		ug/kg	330
Bis(2-chloroethyl)ether	ND		ug/kg	330
2-Chloronaphthalene	ND		ug/kg	330
1,2-Dichlorobenzene	ND		ug/kg	330
1,3-Dichlorobenzene	ND		ug/kg	330
1,4-Dichlorobenzene	ND		ug/kg	330
3,3'-Dichlorobenzidine	ND		ug/kg	670
2,4-Dinitrotoluene	ND		ug/kg	330
2,6-Dinitrotoluene	ND		ug/kg	330
Azobenzene	ND		ug/kg	330
Fluoranthene	ND		ug/kg	330
4-Bromophenyl phenyl ether	ND		ug/kg	330
Bis(2-chloroisopropyl)ether	ND		ug/kg	330
Bis(2-chloroethoxy)methane	ND		ug/kg	330
Hexachlorobutadiene	ND		ug/kg	670
Hexachloroethane	ND		ug/kg	330
Isophorone	ND		ug/kg	330
Naphthalene	ND		ug/kg	330
Nitrobenzene	ND		ug/kg	330
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	670
Butyl benzyl phthalate	ND		ug/kg	330
Di-n-butylphthalate	ND		ug/kg	330
Di-n-octylphthalate	ND		ug/kg	330
Diethyl phthalate	ND		ug/kg	330
Dimethyl phthalate	ND		ug/kg	330
Benzo(a)anthracene	ND		ug/kg	330
Benzo(a)pyrene	ND		ug/kg	330
Benzo(b)fluoranthene	ND		ug/kg	330
Benzo(k)fluoranthene	ND		ug/kg	330

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3545
Analytical Date:	10/30/07 20:08	Extraction Date:	10/30/07 03:00
Analyst:	AK		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 10-12 Batch: WG300136-1				
Chrysene	ND		ug/kg	330
Acenaphthylene	ND		ug/kg	330
Anthracene	ND		ug/kg	330
Benzo(ghi)perylene	ND		ug/kg	330
Fluorene	ND		ug/kg	330
Phenanthrene	ND		ug/kg	330
Dibenzo(a,h)anthracene	ND		ug/kg	330
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	330
Pyrene	ND		ug/kg	330
Aniline	ND		ug/kg	670
4-Chloroaniline	ND		ug/kg	330
Dibenzofuran	ND		ug/kg	330
2-Methylnaphthalene	ND		ug/kg	330
Acetophenone	ND		ug/kg	1300
2,4,6-Trichlorophenol	ND		ug/kg	330
2-Chlorophenol	ND		ug/kg	400
2,4-Dichlorophenol	ND		ug/kg	670
2,4-Dimethylphenol	ND		ug/kg	330
2-Nitrophenol	ND		ug/kg	1300
4-Nitrophenol	ND		ug/kg	670
2,4-Dinitrophenol	ND		ug/kg	1300
Pentachlorophenol	ND		ug/kg	1300
Phenol	ND		ug/kg	470
2-Methylphenol	ND		ug/kg	400
3-Methylphenol/4-Methylphenol	ND		ug/kg	400
2,4,5-Trichlorophenol	ND		ug/kg	330

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8270C	Extraction Method:	EPA 3545
Analytical Date:	10/30/07 20:08	Extraction Date:	10/30/07 03:00
Analyst:	AK		

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by MCP 8270C for sample(s): 10-12 Batch: WG300136-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		30-130
Phenol-d6	93		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	75		30-130
4-Terphenyl-d14	84		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C-SIM Associated sample(s): 01-09 Batch: WG299980-2 WG299980-3					
Acenaphthene	66	77	40-140	15	20
2-Chloronaphthalene	65	69	40-140	6	20
Fluoranthene	104	108	40-140	4	20
Hexachlorobutadiene	45	48	40-140	6	20
Naphthalene	56	61	40-140	9	20
Benzo(a)anthracene	101	101	40-140	0	20
Benzo(a)pyrene	102	105	40-140	3	20
Benzo(b)fluoranthene	106	106	40-140	0	20
Benzo(k)fluoranthene	96	102	40-140	6	20
Chrysene	88	91	40-140	3	20
Acenaphthylene	66	73	40-140	10	20
Anthracene	98	105	40-140	7	20
Benzo(ghi)perylene	98	101	40-140	3	20
Fluorene	84	96	40-140	13	20
Phenanthrene	92	101	40-140	9	20
Dibenzo(a,h)anthracene	107	110	40-140	3	20
Indeno(1,2,3-cd)Pyrene	103	107	40-140	4	20
Pyrene	100	103	40-140	3	20
2-Methylnaphthalene	60	64	40-140	6	20
Pentachlorophenol	65	73	30-130	12	20
Hexachlorobenzene	83	92	40-140	10	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C-SIM Associated sample(s): 01-09 Batch: WG299980-2 WG299980-3					
Hexachloroethane	44	48	40-140	9	20

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		36		15-110
Phenol-d6	22		27		15-110
Nitrobenzene-d5	49		52		30-130
2-Fluorobiphenyl	59		63		30-130
2,4,6-Tribromophenol	75		79		15-110
4-Terphenyl-d14	93		96		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-09 Batch: WG299982-2 WG299982-3					
Acenaphthene	58	60	40-140	3	20
1,2,4-Trichlorobenzene	48	47	40-140	2	20
Hexachlorobenzene	76	83	40-140	9	20
Bis(2-chloroethyl)ether	55	49	40-140	12	20
2-Chloronaphthalene	52	52	40-140	0	20
1,2-Dichlorobenzene	47	47	40-140	0	20
1,3-Dichlorobenzene	48	46	40-140	4	20
1,4-Dichlorobenzene	49	46	40-140	6	20
3,3'-Dichlorobenzidine	61	58	40-140	5	20
2,4-Dinitrotoluene	78	80	40-140	3	20
2,6-Dinitrotoluene	67	69	40-140	3	20
Azobenzene	72	75	40-140	4	20
Fluoranthene	79	79	40-140	0	20
4-Bromophenyl phenyl ether	74	76	40-140	3	20
Bis(2-chloroisopropyl)ether	54	52	40-140	4	20
Bis(2-chloroethoxy)methane	46	46	40-140	0	20
Hexachlorobutadiene	48	48	40-140	0	20
Hexachloroethane	48	48	40-140	0	20
Isophorone	52	51	40-140	2	20
Naphthalene	47	46	40-140	2	20
Nitrobenzene	49	48	40-140	2	20

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-09 Batch: WG299982-2 WG299982-3					
Bis(2-Ethylhexyl)phthalate	81	82	40-140	1	20
Butyl benzyl phthalate	80	80	40-140	0	20
Di-n-butylphthalate	79	81	40-140	3	20
Di-n-octylphthalate	75	76	40-140	1	20
Diethyl phthalate	80	84	40-140	5	20
Dimethyl phthalate	74	78	40-140	5	20
Benzo(a)anthracene	82	83	40-140	1	20
Benzo(a)pyrene	78	75	40-140	4	20
Benzo(b)fluoranthene	79	79	40-140	0	20
Benzo(k)fluoranthene	83	84	40-140	1	20
Chrysene	80	81	40-140	1	20
Acenaphthylene	55	55	40-140	0	20
Anthracene	76	77	40-140	1	20
Benzo(ghi)perylene	76	74	40-140	3	20
Fluorene	67	68	40-140	1	20
Phenanthrene	75	76	40-140	1	20
Dibenzo(a,h)anthracene	76	74	40-140	3	20
Indeno(1,2,3-cd)Pyrene	91	90	40-140	1	20
Pyrene	79	81	40-140	3	20
Aniline	28	26	40-140	7	20
4-Chloroaniline	30	30	40-140	0	20

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-09 Batch: WG299982-2 WG299982-3					
Dibenzofuran	64	66	40-140	3	20
2-Methylnaphthalene	45	45	40-140	0	20
Acetophenone	47	46	40-140	2	20
2,4,6-Trichlorophenol	55	56	30-130	2	20
2-Chlorophenol	44	44	30-130	0	20
2,4-Dichlorophenol	37	49	30-130	28	20
2,4-Dimethylphenol	30	33	30-130	10	20
2-Nitrophenol	46	38	30-130	19	20
4-Nitrophenol	27	31	30-130	14	20
2,4-Dinitrophenol	56	53	30-130	6	20
Pentachlorophenol	52	54	30-130	4	20
Phenol	19	22	30-130	15	20
2-Methylphenol	36	38	30-130	5	20
3-Methylphenol/4-Methylphenol	31	34	30-130	9	20
2,4,5-Trichlorophenol	58	58	30-130	0	20

ALPHA WOODS HOLE LABS

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 01-09 Batch: WG299982-2 WG299982-3					

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	25		28		15-110
Phenol-d6	19		21		15-110
Nitrobenzene-d5	46		45		30-130
2-Fluorobiphenyl	49		47		30-130
2,4,6-Tribromophenol	83		83		15-110
4-Terphenyl-d14	77		76		30-130

Semivolatile Organics by MCP 8270C Associated sample(s): 10-12 Batch: WG300136-2 WG300136-3					
Acenaphthene	72	77	40-140	7	30
1,2,4-Trichlorobenzene	61	75	40-140	21	30
Hexachlorobenzene	75	82	40-140	9	30
Bis(2-chloroethyl)ether	69	81	40-140	16	30
2-Chloronaphthalene	63	68	40-140	8	30
1,2-Dichlorobenzene	66	81	40-140	20	30
1,3-Dichlorobenzene	67	80	40-140	18	30
1,4-Dichlorobenzene	65	81	40-140	22	30
3,3'-Dichlorobenzidine	55	59	40-140	7	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 10-12 Batch: WG300136-2 WG300136-3					
2,4-Dinitrotoluene	85	92	40-140	8	30
2,6-Dinitrotoluene	76	80	40-140	5	30
Azobenzene	80	86	40-140	7	30
Fluoranthene	87	93	40-140	7	30
4-Bromophenyl phenyl ether	75	81	40-140	8	30
Bis(2-chloroisopropyl)ether	72	86	40-140	18	30
Bis(2-chloroethoxy)methane	66	79	40-140	18	30
Hexachlorobutadiene	62	73	40-140	16	30
Hexachloroethane	67	78	40-140	15	30
Isophorone	70	82	40-140	16	30
Naphthalene	64	77	40-140	18	30
Nitrobenzene	65	75	40-140	14	30
Bis(2-Ethylhexyl)phthalate	92	94	40-140	2	30
Butyl benzyl phthalate	79	85	40-140	7	30
Di-n-butylphthalate	86	92	40-140	7	30
Di-n-octylphthalate	94	97	40-140	3	30
Diethyl phthalate	81	87	40-140	7	30
Dimethyl phthalate	78	85	40-140	9	30
Benzo(a)anthracene	89	91	40-140	2	30
Benzo(a)pyrene	83	91	40-140	9	30
Benzo(b)fluoranthene	84	90	40-140	7	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 10-12 Batch: WG300136-2 WG300136-3					
Benzo(k)fluoranthene	83	92	40-140	10	30
Chrysene	89	90	40-140	1	30
Acenaphthylene	68	73	40-140	7	30
Anthracene	82	84	40-140	2	30
Benzo(ghi)perylene	82	88	40-140	7	30
Fluorene	73	78	40-140	7	30
Phenanthrene	82	85	40-140	4	30
Dibenzo(a,h)anthracene	81	86	40-140	6	30
Indeno(1,2,3-cd)Pyrene	80	84	40-140	5	30
Pyrene	80	87	40-140	8	30
Aniline	42	48	40-140	13	30
4-Chloroaniline	22	27	40-140	20	30
Dibenzofuran	74	80	40-140	8	30
2-Methylnaphthalene	60	69	40-140	14	30
Acetophenone	67	82	40-140	20	30
2,4,6-Trichlorophenol	73	78	30-130	7	30
2-Chlorophenol	60	73	30-130	20	30
2,4-Dichlorophenol	66	79	30-130	18	30
2,4-Dimethylphenol	54	62	30-130	14	30
2-Nitrophenol	64	79	30-130	21	30
4-Nitrophenol	67	76	30-130	13	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Semivolatile Organics by MCP 8270C Associated sample(s): 10-12 Batch: WG300136-2 WG300136-3					
2,4-Dinitrophenol	45	49	30-130	9	30
Pentachlorophenol	67	72	30-130	7	30
Phenol	64	80	30-130	22	30
2-Methylphenol	62	75	30-130	19	30
3-Methylphenol/4-Methylphenol	63	73	30-130	15	30
2,4,5-Trichlorophenol	69	73	30-130	6	30

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	65		79		30-130
Phenol-d6	80		95		30-130
Nitrobenzene-d5	70		80		30-130
2-Fluorobiphenyl	68		80		30-130
2,4,6-Tribromophenol	90		99		30-130
4-Terphenyl-d14	89		95		30-130

PCBS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 00:29	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.266	1
Aroclor 1221	ND		ug/l	0.266	1
Aroclor 1232	ND		ug/l	0.266	1
Aroclor 1242	ND		ug/l	0.266	1
Aroclor 1248	ND		ug/l	0.266	1
Aroclor 1254	ND		ug/l	0.266	1
Aroclor 1260	ND		ug/l	0.266	1
Aroclor 1262	ND		ug/l	0.266	1
Aroclor 1268	ND		ug/l	0.266	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	46		30-150	A
Decachlorobiphenyl	34		30-150	A
2,4,5,6-Tetrachloro-m-xylene	45		30-150	B
Decachlorobiphenyl	44		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 00:58	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.258	1
Aroclor 1221	ND		ug/l	0.258	1
Aroclor 1232	ND		ug/l	0.258	1
Aroclor 1242	ND		ug/l	0.258	1
Aroclor 1248	ND		ug/l	0.258	1
Aroclor 1254	ND		ug/l	0.258	1
Aroclor 1260	ND		ug/l	0.258	1
Aroclor 1262	ND		ug/l	0.258	1
Aroclor 1268	ND		ug/l	0.258	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	46		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	45		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 01:27	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.272	1
Aroclor 1221	ND		ug/l	0.272	1
Aroclor 1232	ND		ug/l	0.272	1
Aroclor 1242	ND		ug/l	0.272	1
Aroclor 1248	ND		ug/l	0.272	1
Aroclor 1254	ND		ug/l	0.272	1
Aroclor 1260	ND		ug/l	0.272	1
Aroclor 1262	ND		ug/l	0.272	1
Aroclor 1268	ND		ug/l	0.272	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	45		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	47		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 01:55	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.255	1
Aroclor 1221	ND		ug/l	0.255	1
Aroclor 1232	ND		ug/l	0.255	1
Aroclor 1242	ND		ug/l	0.255	1
Aroclor 1248	ND		ug/l	0.255	1
Aroclor 1254	ND		ug/l	0.255	1
Aroclor 1260	ND		ug/l	0.255	1
Aroclor 1262	ND		ug/l	0.255	1
Aroclor 1268	ND		ug/l	0.255	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	44		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	44		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 02:24	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.263	1
Aroclor 1221	ND		ug/l	0.263	1
Aroclor 1232	ND		ug/l	0.263	1
Aroclor 1242	ND		ug/l	0.263	1
Aroclor 1248	ND		ug/l	0.263	1
Aroclor 1254	ND		ug/l	0.263	1
Aroclor 1260	ND		ug/l	0.263	1
Aroclor 1262	ND		ug/l	0.263	1
Aroclor 1268	ND		ug/l	0.263	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	48		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 02:53	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.281	1
Aroclor 1221	ND		ug/l	0.281	1
Aroclor 1232	ND		ug/l	0.281	1
Aroclor 1242	ND		ug/l	0.281	1
Aroclor 1248	ND		ug/l	0.281	1
Aroclor 1254	ND		ug/l	0.281	1
Aroclor 1260	ND		ug/l	0.281	1
Aroclor 1262	ND		ug/l	0.281	1
Aroclor 1268	ND		ug/l	0.281	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	51		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	67		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 03:21	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.255	1
Aroclor 1221	ND		ug/l	0.255	1
Aroclor 1232	ND		ug/l	0.255	1
Aroclor 1242	ND		ug/l	0.255	1
Aroclor 1248	ND		ug/l	0.255	1
Aroclor 1254	ND		ug/l	0.255	1
Aroclor 1260	ND		ug/l	0.255	1
Aroclor 1262	ND		ug/l	0.255	1
Aroclor 1268	ND		ug/l	0.255	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	50		30-150	A
Decachlorobiphenyl	35		30-150	A
2,4,5,6-Tetrachloro-m-xylene	47		30-150	B
Decachlorobiphenyl	45		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 03:50	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.352	1
Aroclor 1221	ND		ug/l	0.352	1
Aroclor 1232	ND		ug/l	0.352	1
Aroclor 1242	ND		ug/l	0.352	1
Aroclor 1248	ND		ug/l	0.352	1
Aroclor 1254	ND		ug/l	0.352	1
Aroclor 1260	ND		ug/l	0.352	1
Aroclor 1262	ND		ug/l	0.352	1
Aroclor 1268	ND		ug/l	0.352	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	45		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	44		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8082	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 04:19	Cleanup Method1:	EPA 3665A
Analyst:	HG	Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/l	0.263	1
Aroclor 1221	ND		ug/l	0.263	1
Aroclor 1232	ND		ug/l	0.263	1
Aroclor 1242	ND		ug/l	0.263	1
Aroclor 1248	ND		ug/l	0.263	1
Aroclor 1254	ND		ug/l	0.263	1
Aroclor 1260	ND		ug/l	0.263	1
Aroclor 1262	ND		ug/l	0.263	1
Aroclor 1268	ND		ug/l	0.263	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	40		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	38		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Anaytical Method:	64,8082	Extraction Date:	10/27/07 22:15
Analytical Date:	10/29/07 17:28	Cleanup Method1:	EPA 3665A
Analyst:	SS	Cleanup Date1:	10/29/07
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/kg	38.3	1
Aroclor 1221	ND		ug/kg	38.3	1
Aroclor 1232	ND		ug/kg	38.3	1
Aroclor 1242	ND		ug/kg	38.3	1
Aroclor 1248	ND		ug/kg	38.3	1
Aroclor 1254	ND		ug/kg	38.3	1
Aroclor 1260	ND		ug/kg	38.3	1
Aroclor 1262	ND		ug/kg	38.3	1
Aroclor 1268	ND		ug/kg	38.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	53		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Anaytical Method:	64,8082	Extraction Date:	10/27/07 22:15
Analytical Date:	10/29/07 17:57	Cleanup Method1:	EPA 3665A
Analyst:	SS	Cleanup Date1:	10/29/07
Percent Solids:	52%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/kg	64.1	1
Aroclor 1221	ND		ug/kg	64.1	1
Aroclor 1232	ND		ug/kg	64.1	1
Aroclor 1242	ND		ug/kg	64.1	1
Aroclor 1248	ND		ug/kg	64.1	1
Aroclor 1254	ND		ug/kg	64.1	1
Aroclor 1260	ND		ug/kg	64.1	1
Aroclor 1262	ND		ug/kg	64.1	1
Aroclor 1268	ND		ug/kg	64.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	47		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	49		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Anaytical Method:	64,8082	Extraction Date:	10/27/07 22:15
Analytical Date:	10/29/07 18:25	Cleanup Method1:	EPA 3665A
Analyst:	SS	Cleanup Date1:	10/29/07
Percent Solids:	75%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Polychlorinated Biphenyls by MCP 8082					
Aroclor 1016	ND		ug/kg	44.4	1
Aroclor 1221	ND		ug/kg	44.4	1
Aroclor 1232	ND		ug/kg	44.4	1
Aroclor 1242	ND		ug/kg	44.4	1
Aroclor 1248	ND		ug/kg	44.4	1
Aroclor 1254	ND		ug/kg	44.4	1
Aroclor 1260	ND		ug/kg	44.4	1
Aroclor 1262	ND		ug/kg	44.4	1
Aroclor 1268	ND		ug/kg	44.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	43		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	49		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8082	Extraction Method:	EPA 3546
Analytical Date:	10/29/07 15:05	Extraction Date:	10/27/07 22:15
Analyst:	SS	Cleanup Method1:	EPA 3665A
		Cleanup Date1:	10/29/07

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by MCP 8082 for sample(s): 10-12 Batch: WG299946-1				
Aroclor 1016	ND		ug/kg	33.3
Aroclor 1221	ND		ug/kg	33.3
Aroclor 1232	ND		ug/kg	33.3
Aroclor 1242	ND		ug/kg	33.3
Aroclor 1248	ND		ug/kg	33.3
Aroclor 1254	ND		ug/kg	33.3
Aroclor 1260	ND		ug/kg	33.3
Aroclor 1262	ND		ug/kg	33.3
Aroclor 1268	ND		ug/kg	33.3

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	85		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8082	Extraction Method:	EPA 3510C
Analytical Date:	10/31/07 22:35	Extraction Date:	10/29/07 20:00
Analyst:	HG	Cleanup Method1:	EPA 3665A
		Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by MCP 8082 for sample(s): 01-09 Batch: WG300104-1				
Aroclor 1016	ND		ug/l	0.250
Aroclor 1221	ND		ug/l	0.250
Aroclor 1232	ND		ug/l	0.250
Aroclor 1242	ND		ug/l	0.250
Aroclor 1248	ND		ug/l	0.250
Aroclor 1254	ND		ug/l	0.250
Aroclor 1260	ND		ug/l	0.250
Aroclor 1262	ND		ug/l	0.250
Aroclor 1268	ND		ug/l	0.250

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	44		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	39		30-150	B
Decachlorobiphenyl	61		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Polychlorinated Biphenyls by MCP 8082 Associated sample(s): 10-12 Batch: WG299946-2 WG299946-3					
Aroclor 1016	72	63	40-140	13	30
Aroclor 1260	80	71	40-140	12	30

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		69		30-150	A
Decachlorobiphenyl	63		55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		70		30-150	B
Decachlorobiphenyl	78		68		30-150	B

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Polychlorinated Biphenyls by MCP 8082 Associated sample(s): 01-09 Batch: WG300104-2 WG300104-3					
Aroclor 1016	41	59	40-140	**36**	20
Aroclor 1260	76	88	40-140	14	20

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	37		58		30-150	A
Decachlorobiphenyl	54		55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	38		59		30-150	B
Decachlorobiphenyl	72		73		30-150	B

PESTICIDES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	10/31/07 22:49	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.020	1
Lindane	ND		ug/l	0.020	1
Alpha-BHC	ND		ug/l	0.020	1
Beta-BHC	ND		ug/l	0.020	1
Heptachlor	ND		ug/l	0.020	1
Aldrin	ND		ug/l	0.020	1
Heptachlor epoxide	ND		ug/l	0.020	1
Endrin	ND		ug/l	0.040	1
Endrin ketone	ND		ug/l	0.040	1
Dieldrin	ND		ug/l	0.040	1
4,4'-DDE	ND		ug/l	0.040	1
4,4'-DDD	ND		ug/l	0.040	1
4,4'-DDT	ND		ug/l	0.040	1
Endosulfan I	ND		ug/l	0.020	1
Endosulfan II	ND		ug/l	0.040	1
Endosulfan sulfate	ND		ug/l	0.040	1
Methoxychlor	ND		ug/l	0.202	1
Chlordane	ND		ug/l	0.202	1
Hexachlorobenzene	ND		ug/l	0.020	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	42		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	10/31/07 23:18	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.021	1
Lindane	ND		ug/l	0.021	1
Alpha-BHC	ND		ug/l	0.021	1
Beta-BHC	ND		ug/l	0.021	1
Heptachlor	ND		ug/l	0.021	1
Aldrin	ND		ug/l	0.021	1
Heptachlor epoxide	ND		ug/l	0.021	1
Endrin	ND		ug/l	0.042	1
Endrin ketone	ND		ug/l	0.042	1
Dieldrin	ND		ug/l	0.042	1
4,4'-DDE	ND		ug/l	0.042	1
4,4'-DDD	ND		ug/l	0.042	1
4,4'-DDT	ND		ug/l	0.042	1
Endosulfan I	ND		ug/l	0.021	1
Endosulfan II	ND		ug/l	0.042	1
Endosulfan sulfate	ND		ug/l	0.042	1
Methoxychlor	ND		ug/l	0.208	1
Chlordane	ND		ug/l	0.208	1
Hexachlorobenzene	ND		ug/l	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	10/31/07 23:47	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDD	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan II	ND		ug/l	0.044	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.222	1
Chlordane	ND		ug/l	0.222	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	56		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 00:16	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.043	1
Endrin ketone	ND		ug/l	0.043	1
Dieldrin	ND		ug/l	0.043	1
4,4'-DDE	ND		ug/l	0.043	1
4,4'-DDD	ND		ug/l	0.043	1
4,4'-DDT	ND		ug/l	0.043	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan II	ND		ug/l	0.043	1
Endosulfan sulfate	ND		ug/l	0.043	1
Methoxychlor	ND		ug/l	0.215	1
Chlordane	ND		ug/l	0.215	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 00:44	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDD	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan II	ND		ug/l	0.044	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.217	1
Chlordane	ND		ug/l	0.217	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 01:13	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.043	1
Endrin ketone	ND		ug/l	0.043	1
Dieldrin	ND		ug/l	0.043	1
4,4'-DDE	ND		ug/l	0.043	1
4,4'-DDD	ND		ug/l	0.043	1
4,4'-DDT	ND		ug/l	0.043	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan II	ND		ug/l	0.043	1
Endosulfan sulfate	ND		ug/l	0.043	1
Methoxychlor	ND		ug/l	0.215	1
Chlordane	ND		ug/l	0.215	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 01:42	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.022	1
Lindane	ND		ug/l	0.022	1
Alpha-BHC	ND		ug/l	0.022	1
Beta-BHC	ND		ug/l	0.022	1
Heptachlor	ND		ug/l	0.022	1
Aldrin	ND		ug/l	0.022	1
Heptachlor epoxide	ND		ug/l	0.022	1
Endrin	ND		ug/l	0.044	1
Endrin ketone	ND		ug/l	0.044	1
Dieldrin	ND		ug/l	0.044	1
4,4'-DDE	ND		ug/l	0.044	1
4,4'-DDD	ND		ug/l	0.044	1
4,4'-DDT	ND		ug/l	0.044	1
Endosulfan I	ND		ug/l	0.022	1
Endosulfan II	ND		ug/l	0.044	1
Endosulfan sulfate	ND		ug/l	0.044	1
Methoxychlor	ND		ug/l	0.217	1
Chlordane	ND		ug/l	0.217	1
Hexachlorobenzene	ND		ug/l	0.022	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	40		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 02:39	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.030	1
Lindane	ND		ug/l	0.030	1
Alpha-BHC	ND		ug/l	0.030	1
Beta-BHC	ND		ug/l	0.030	1
Heptachlor	ND		ug/l	0.030	1
Aldrin	ND		ug/l	0.030	1
Heptachlor epoxide	ND		ug/l	0.030	1
Endrin	ND		ug/l	0.060	1
Endrin ketone	ND		ug/l	0.060	1
Dieldrin	ND		ug/l	0.060	1
4,4'-DDE	ND		ug/l	0.060	1
4,4'-DDD	ND		ug/l	0.060	1
4,4'-DDT	ND		ug/l	0.060	1
Endosulfan I	ND		ug/l	0.030	1
Endosulfan II	ND		ug/l	0.060	1
Endosulfan sulfate	ND		ug/l	0.060	1
Methoxychlor	ND		ug/l	0.298	1
Chlordane	ND		ug/l	0.298	1
Hexachlorobenzene	ND		ug/l	0.030	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	50		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	53		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water	Extraction Method:	EPA 3510C
Anaytical Method:	64,8081A	Extraction Date:	10/29/07 20:00
Analytical Date:	11/01/07 03:08	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/30/07

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/l	0.021	1
Lindane	ND		ug/l	0.021	1
Alpha-BHC	ND		ug/l	0.021	1
Beta-BHC	ND		ug/l	0.021	1
Heptachlor	ND		ug/l	0.021	1
Aldrin	ND		ug/l	0.021	1
Heptachlor epoxide	ND		ug/l	0.021	1
Endrin	ND		ug/l	0.043	1
Endrin ketone	ND		ug/l	0.043	1
Dieldrin	ND		ug/l	0.043	1
4,4'-DDE	ND		ug/l	0.043	1
4,4'-DDD	ND		ug/l	0.043	1
4,4'-DDT	ND		ug/l	0.043	1
Endosulfan I	ND		ug/l	0.021	1
Endosulfan II	ND		ug/l	0.043	1
Endosulfan sulfate	ND		ug/l	0.043	1
Methoxychlor	ND		ug/l	0.213	1
Chlordane	ND		ug/l	0.213	1
Hexachlorobenzene	ND		ug/l	0.021	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8081A	Extraction Date:	10/30/07 04:00
Analytical Date:	11/01/07 15:43	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/31/07
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/kg	19.2	5
Lindane	ND		ug/kg	15.3	5
Alpha-BHC	ND		ug/kg	19.2	5
Beta-BHC	ND		ug/kg	19.2	5
Heptachlor	ND		ug/kg	19.2	5
Aldrin	ND		ug/kg	19.2	5
Heptachlor epoxide	ND		ug/kg	19.2	5
Endrin	ND		ug/kg	19.2	5
Endrin ketone	ND		ug/kg	19.2	5
Dieldrin	ND		ug/kg	19.2	5
4,4'-DDE	ND		ug/kg	19.2	5
4,4'-DDD	ND		ug/kg	19.2	5
4,4'-DDT	ND		ug/kg	19.2	5
Endosulfan I	ND		ug/kg	19.2	5
Endosulfan II	ND		ug/kg	19.2	5
Endosulfan sulfate	ND		ug/kg	19.2	5
Methoxychlor	ND		ug/kg	76.6	5
Chlordane	ND		ug/kg	76.6	5
Hexachlorobenzene	ND		ug/kg	19.2	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	62		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8081A	Extraction Date:	10/30/07 04:00
Analytical Date:	11/01/07 16:12	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/31/07
Percent Solids:	52%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/kg	32.0	5
Lindane	ND		ug/kg	25.6	5
Alpha-BHC	ND		ug/kg	32.0	5
Beta-BHC	ND		ug/kg	32.0	5
Heptachlor	ND		ug/kg	32.0	5
Aldrin	ND		ug/kg	32.0	5
Heptachlor epoxide	ND		ug/kg	32.0	5
Endrin	ND		ug/kg	32.0	5
Endrin ketone	ND		ug/kg	32.0	5
Dieldrin	ND		ug/kg	32.0	5
4,4'-DDE	ND		ug/kg	32.0	5
4,4'-DDD	ND		ug/kg	32.0	5
4,4'-DDT	ND		ug/kg	32.0	5
Endosulfan I	ND		ug/kg	32.0	5
Endosulfan II	ND		ug/kg	32.0	5
Endosulfan sulfate	ND		ug/kg	32.0	5
Methoxychlor	ND		ug/kg	128	5
Chlordane	ND		ug/kg	128	5
Hexachlorobenzene	ND		ug/kg	32.0	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	55		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3545
Anaytical Method:	64,8081A	Extraction Date:	10/30/07 04:00
Analytical Date:	11/01/07 09:29	Cleanup Method1:	EPA 3620B
Analyst:	JB	Cleanup Date1:	10/31/07
Percent Solids:	75%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Organochlorine Pesticides by MCP 8081A					
Delta-BHC	ND		ug/kg	4.44	1
Lindane	ND		ug/kg	3.56	1
Alpha-BHC	ND		ug/kg	4.44	1
Beta-BHC	ND		ug/kg	4.44	1
Heptachlor	ND		ug/kg	4.44	1
Aldrin	ND		ug/kg	4.44	1
Heptachlor epoxide	ND		ug/kg	4.44	1
Endrin	ND		ug/kg	4.44	1
Endrin ketone	ND		ug/kg	4.44	1
Dieldrin	ND		ug/kg	4.44	1
4,4'-DDE	ND		ug/kg	4.44	1
4,4'-DDD	ND		ug/kg	4.44	1
4,4'-DDT	ND		ug/kg	4.44	1
Endosulfan I	ND		ug/kg	4.44	1
Endosulfan II	ND		ug/kg	4.44	1
Endosulfan sulfate	ND		ug/kg	4.44	1
Methoxychlor	ND		ug/kg	17.8	1
Chlordane	ND		ug/kg	17.8	1
Hexachlorobenzene	ND		ug/kg	4.44	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	52		30-150	B

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method: 64,8081A
Analytical Date: 10/31/07 21:23
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 10/29/07 20:00
Cleanup Method1: EPA 3620B
Cleanup Date1: 10/30/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 01-09 Batch: WG300103-1				
Delta-BHC	ND		ug/l	0.020
Lindane	ND		ug/l	0.020
Alpha-BHC	ND		ug/l	0.020
Beta-BHC	ND		ug/l	0.020
Heptachlor	ND		ug/l	0.020
Aldrin	ND		ug/l	0.020
Heptachlor epoxide	ND		ug/l	0.020
Endrin	ND		ug/l	0.040
Endrin ketone	ND		ug/l	0.040
Dieldrin	ND		ug/l	0.040
4,4'-DDE	ND		ug/l	0.040
4,4'-DDD	ND		ug/l	0.040
4,4'-DDT	ND		ug/l	0.040
Endosulfan I	ND		ug/l	0.020
Endosulfan II	ND		ug/l	0.040
Endosulfan sulfate	ND		ug/l	0.040
Methoxychlor	ND		ug/l	0.200
Chlordane	ND		ug/l	0.200
Hexachlorobenzene	ND		ug/l	0.020

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

Method Blank Analysis
Batch Quality Control

Analytical Method:	64,8081A	Extraction Method:	EPA 3545
Analytical Date:	11/01/07 10:56	Extraction Date:	10/30/07 04:00
Analyst:	JB	Cleanup Method1:	EPA 3620B
		Cleanup Date1:	10/31/07

Parameter	Result	Qualifier	Units	RDL
Organochlorine Pesticides by MCP 8081A for sample(s): 10-12 Batch: WG300134-1				
Delta-BHC	ND		ug/kg	3.33
Lindane	ND		ug/kg	2.67
Alpha-BHC	ND		ug/kg	3.33
Beta-BHC	ND		ug/kg	3.33
Heptachlor	ND		ug/kg	3.33
Aldrin	ND		ug/kg	3.33
Heptachlor epoxide	ND		ug/kg	3.33
Endrin	ND		ug/kg	3.33
Endrin ketone	ND		ug/kg	3.33
Dieldrin	ND		ug/kg	3.33
4,4'-DDE	ND		ug/kg	3.33
4,4'-DDD	ND		ug/kg	3.33
4,4'-DDT	ND		ug/kg	3.33
Endosulfan I	ND		ug/kg	3.33
Endosulfan II	ND		ug/kg	3.33
Endosulfan sulfate	ND		ug/kg	3.33
Methoxychlor	ND		ug/kg	13.3
Chlordane	ND		ug/kg	13.3
Hexachlorobenzene	ND		ug/kg	3.33

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	57		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Organochlorine Pesticides by MCP 8081A Associated sample(s): 01-09 Batch: WG300103-2 WG300103-3					
Delta-BHC	70	82	40-140	15	20
Lindane	79	90	40-140	13	20
Alpha-BHC	78	89	40-140	13	20
Beta-BHC	78	88	40-140	12	20
Heptachlor	80	93	40-140	15	20
Aldrin	73	86	40-140	16	20
Heptachlor epoxide	78	92	40-140	16	20
Endrin	94	109	40-140	15	20
Endrin ketone	79	94	40-140	17	20
Dieldrin	85	99	40-140	15	20
4,4'-DDE	86	100	40-140	15	20
4,4'-DDD	79	91	40-140	14	20
4,4'-DDT	82	97	40-140	16	20
Endosulfan I	85	97	40-140	13	20
Endosulfan II	85	100	40-140	16	20
Endosulfan sulfate	81	100	40-140	20	20
Methoxychlor	89	106	40-140	17	20
Hexachlorobenzene	67	76	40-140	13	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Organochlorine Pesticides by MCP 8081A Associated sample(s): 01-09 Batch: WG300103-2 WG300103-3					

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		67		30-150	A
Decachlorobiphenyl	64		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		76		30-150	B
Decachlorobiphenyl	48		55		30-150	B

Organochlorine Pesticides by MCP 8081A Associated sample(s): 10-12 Batch: WG300134-2 WG300134-3					
Delta-BHC	83	72	40-140	14	30
Lindane	83	75	40-140	10	30
Alpha-BHC	80	74	40-140	8	30
Beta-BHC	83	74	40-140	11	30
Heptachlor	88	82	40-140	7	30
Aldrin	85	78	40-140	9	30
Heptachlor epoxide	85	75	40-140	13	30
Endrin	102	90	40-140	13	30
Endrin ketone	89	77	40-140	14	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Organochlorine Pesticides by MCP 8081A Associated sample(s): 10-12 Batch: WG300134-2 WG300134-3					
Dieldrin	91	80	40-140	13	30
4,4'-DDE	92	82	40-140	11	30
4,4'-DDD	92	82	40-140	11	30
4,4'-DDT	92	80	40-140	14	30
Endosulfan I	91	81	40-140	12	30
Endosulfan II	93	80	40-140	15	30
Endosulfan sulfate	94	78	40-140	19	30
Methoxychlor	99	84	40-140	16	30
Hexachlorobenzene	71	67	40-140	6	30

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		59		30-150	A
Decachlorobiphenyl	75		69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		67		30-150	B
Decachlorobiphenyl	55		49		30-150	B

ALPHA WOODS HOLE LABS

METALS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.014		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Calcium, Dissolved	6.3		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Iron, Dissolved	11		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.676		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/30/07 18:30	10/31/07 11:27	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Sodium, Dissolved	11		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:13	EPA 3005A	60,6010B	MG

ALPHA WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.069		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Calcium, Dissolved	19		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Copper, Dissolved	0.024		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Iron, Dissolved	1.6		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Manganese, Dissolved	7.33		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/30/07 18:30	10/31/07 11:29	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Sodium, Dissolved	6.6		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:16	EPA 3005A	60,6010B	MG

ALPHA WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	0.005		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.051		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Calcium, Dissolved	42		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Iron, Dissolved	4.5		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Manganese, Dissolved	8.30		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/30/07 18:30	10/31/07 11:31	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Sodium, Dissolved	41		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:19	EPA 3005A	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.043		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Calcium, Dissolved	20		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Iron, Dissolved	0.53		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.446		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:47	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Sodium, Dissolved	14		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:21	EPA 3005A	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.447		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Calcium, Dissolved	63		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Iron, Dissolved	3.8		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Manganese, Dissolved	4.77		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:49	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Sodium, Dissolved	42		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:24	EPA 3005A	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.034		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Calcium, Dissolved	32		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Iron, Dissolved	3.4		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.769		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:51	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Sodium, Dissolved	16		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG
Zinc, Dissolved	0.068		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:27	EPA 3005A	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.032		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Calcium, Dissolved	26		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Iron, Dissolved	11		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Manganese, Dissolved	3.36		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:53	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Sodium, Dissolved	20		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	10/31/07 17:00	11/02/07 18:30	EPA 3005A	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.019		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.0002	1	10/30/07 17:00	10/31/07 18:52	EPA 3005A	64,6020A	BM
Calcium, Dissolved	22		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Iron, Dissolved	0.28		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 18:52	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.366		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:55	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 18:52	EPA 3005A	64,6020A	BM
Sodium, Dissolved	10		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:49	EPA 3005A	60,6010B	MG
Zinc, Dissolved	0.0076		mg/l	0.0050	1	10/30/07 17:00	10/31/07 18:52	EPA 3005A	64,6020A	BM

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-09	Date Collected:	10/25/07 12:15
Client ID:	SW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.017		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.0002	1	10/30/07 17:00	10/31/07 19:03	EPA 3005A	64,6020A	BM
Calcium, Dissolved	26		mg/l	0.10	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Iron, Dissolved	0.16		mg/l	0.05	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 19:03	EPA 3005A	64,6020A	BM
Manganese, Dissolved	0.293		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:57	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 19:03	EPA 3005A	64,6020A	BM
Sodium, Dissolved	7.6		mg/l	2.0	1	10/31/07 17:00	11/02/07 18:33	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.0050	1	10/30/07 17:00	10/31/07 19:03	EPA 3005A	64,6020A	BM

ALPHA WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals by MCP 6000/7000 series										
Arsenic, Total	1.6		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Barium, Total	7.3		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Cadmium, Total	ND		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Calcium, Total	600		mg/kg	4.6	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Chromium, Total	9.1		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Copper, Total	11		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Iron, Total	6900		mg/kg	2.3	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Lead, Total	6.1		mg/kg	2.3	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Manganese, Total	120		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Mercury, Total	ND		mg/kg	0.09	1	10/31/07 22:30	11/01/07 13:13	EPA 7471A	64,7471A	DM
Selenium, Total	ND		mg/kg	2.3	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Silver, Total	ND		mg/kg	0.46	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Sodium, Total	450		mg/kg	92	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG
Zinc, Total	41		mg/kg	2.3	1	11/01/07 08:00	11/02/07 15:00	EPA 3050B	60,6010B	MG

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	52%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals by MCP 6000/7000 series										
Arsenic, Total	22		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Barium, Total	33		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Cadmium, Total	ND		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Calcium, Total	2100		mg/kg	7.6	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Chromium, Total	11		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Copper, Total	14		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Iron, Total	26000		mg/kg	3.8	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Lead, Total	43		mg/kg	3.8	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Manganese, Total	310		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Mercury, Total	ND		mg/kg	0.16	1	10/31/07 22:30	11/01/07 13:15	EPA 7471A	64,7471A	DM
Selenium, Total	ND		mg/kg	3.8	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Silver, Total	ND		mg/kg	0.76	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Sodium, Total	820		mg/kg	150	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG
Zinc, Total	100		mg/kg	3.8	1	11/01/07 08:00	11/02/07 15:05	EPA 3050B	60,6010B	MG

ALPHA WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	75%		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals by MCP 6000/7000 series										
Arsenic, Total	3.7		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Barium, Total	28		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Cadmium, Total	ND		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Calcium, Total	1600		mg/kg	5.3	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Chromium, Total	15		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Copper, Total	7.1		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Iron, Total	10000		mg/kg	2.6	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Lead, Total	18		mg/kg	2.6	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Manganese, Total	400		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Mercury, Total	ND		mg/kg	0.11	1	10/31/07 22:30	11/01/07 13:17	EPA 7471A	64,7471A	DM
Selenium, Total	ND		mg/kg	2.6	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Silver, Total	ND		mg/kg	0.53	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Sodium, Total	560		mg/kg	100	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG
Zinc, Total	40		mg/kg	2.6	1	11/01/07 08:00	11/02/07 15:07	EPA 3050B	60,6010B	MG

ALPHA WOODS HOLE LABS

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-03 Batch: WG300251-1									
Mercury, Dissolved	ND		mg/l	0.0002	1	10/30/07 18:30	10/31/07 10:43	64,7470A	RC

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 08-09 Batch: WG300296-1									
Cadmium, Dissolved	ND		mg/l	0.0002	1	10/30/07 17:00	10/31/07 18:30	64,6020A	BM
Lead, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 18:30	64,6020A	BM
Silver, Dissolved	ND		mg/l	0.0005	1	10/30/07 17:00	10/31/07 18:30	64,6020A	BM
Zinc, Dissolved	ND		mg/l	0.0050	1	10/30/07 17:00	10/31/07 18:30	64,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 04-09 Batch: WG300429-1									
Mercury, Dissolved	ND		mg/l	0.0002	1	10/31/07 19:00	11/01/07 09:42	64,7470A	RC

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-09 Batch: WG300456-1									
Arsenic, Dissolved	ND		mg/l	0.005	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Barium, Dissolved	ND		mg/l	0.010	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG

Method Blank Analysis
Batch Quality Control

Calcium, Dissolved	ND	mg/l	0.10	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Chromium, Dissolved	ND	mg/l	0.01	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Copper, Dissolved	ND	mg/l	0.010	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Iron, Dissolved	ND	mg/l	0.05	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Lead, Dissolved	ND	mg/l	0.010	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Manganese, Dissolved	ND	mg/l	0.010	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Selenium, Dissolved	ND	mg/l	0.010	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Silver, Dissolved	ND	mg/l	0.007	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Sodium, Dissolved	ND	mg/l	2.0	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG
Zinc, Dissolved	ND	mg/l	0.050	1	10/31/07 17:00	11/02/07 17:25	60,6010B	MG

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals by MCP 6000/7000 series for sample(s): 10-12 Batch: WG300466-1								
Mercury, Total	ND	mg/kg	0.08	1	10/31/07 22:30	11/01/07 13:08	64,7471A	DM

Prep Information

Digestion Method: EPA 7471A

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals by MCP 6000/7000 series for sample(s): 10-12 Batch: WG300667-1								
Arsenic, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Barium, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Cadmium, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Calcium, Total	7.0	mg/kg	4.0	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Chromium, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Copper, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Iron, Total	ND	mg/kg	2.0	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Lead, Total	ND	mg/kg	2.0	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Manganese, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Selenium, Total	ND	mg/kg	2.0	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG

Method Blank Analysis
Batch Quality Control

Silver, Total	ND	mg/kg	0.40	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Sodium, Total	ND	mg/kg	80	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG
Zinc, Total	ND	mg/kg	2.0	1	11/01/07 08:00	11/02/07 14:50	60,6010B	MG

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-03 Batch: WG300251-2 WG300251-3					
Mercury, Dissolved	104	105	80-120	1	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 08-09 Batch: WG300296-2 WG300296-3					
Cadmium, Dissolved	110	108	80-120	2	20
Lead, Dissolved	102	102	80-120	0	20
Silver, Dissolved	96	96	80-120	0	20
Zinc, Dissolved	103	104	80-120	1	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 04-09 Batch: WG300429-2 WG300429-3					
Mercury, Dissolved	100	97	80-120	3	20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL

Project Number: Not Specified

Lab Number: L0716044

Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-09 Batch: WG300456-2 WG300456-3					
Arsenic, Dissolved	115	114	80-120	1	20
Barium, Dissolved	102	102	80-120	0	20
Cadmium, Dissolved	115	115	80-120	0	20
Calcium, Dissolved	96	96	80-120	0	20
Chromium, Dissolved	105	105	80-120	0	20
Copper, Dissolved	99	99	80-120	0	20
Iron, Dissolved	110	110	80-120	0	20
Lead, Dissolved	105	105	80-120	0	20
Manganese, Dissolved	102	103	80-120	1	20
Selenium, Dissolved	117	118	80-120	1	20
Silver, Dissolved	99	100	80-120	1	20
Sodium, Dissolved	110	120	80-120	9	20
Zinc, Dissolved	106	106	80-120	0	20
Total Metals by MCP 6000/7000 series Associated sample(s): 10-12 Batch: WG300466-2 WG300466-3					
Mercury, Total	110	97	75-125	13	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals by MCP 6000/7000 series Associated sample(s): 10-12 Batch: WG300667-2 WG300667-3					
Arsenic, Total	104	104	75-125	0	30
Barium, Total	93	94	75-125	1	30
Cadmium, Total	105	108	75-125	3	30
Calcium, Total	89	90	75-125	1	30
Chromium, Total	96	95	75-125	1	30
Copper, Total	94	94	75-125	0	30
Iron, Total	99	110	75-125	11	30
Lead, Total	95	98	75-125	3	30
Manganese, Total	92	95	75-125	3	30
Selenium, Total	106	106	75-125	0	30
Silver, Total	102	100	75-125	2	30
Sodium, Total	99	98	75-125	1	30
Zinc, Total	97	100	75-125	3	30

INORGANICS
&
MISCELLANEOUS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-01	Date Collected:	10/25/07 14:25
Client ID:	MW-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:51	64,9014	AT
General Chemistry									
Alkalinity, Total	26		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	82		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	12		mg/l	1.0	1	-	10/29/07 19:41	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 23:09	30,4500NO3-F	LA
Sulfate	18		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-02	Date Collected:	10/25/07 14:40
Client ID:	MW-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
otal Cyanide by MCP 9014									
Cyanide, Total	0.007		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:51	64,9014	AT
General Chemistry									
Alkalinity, Total	82		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
olids, Total Dissolved	120		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	6.3		mg/l	1.0	1	-	10/29/07 19:42	1,9251	LA
Nitrogen, Nitrate	0.10		mg/l	0.10	1	-	10/26/07 22:14	30,4500NO3-F	LA
ulfate	16		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	41		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-03	Date Collected:	10/25/07 11:50
Client ID:	MW-4S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	0.009		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:52	64,9014	AT
General Chemistry									
Alkalinity, Total	220		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	310		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	42		mg/l	1.0	1	-	10/29/07 19:42	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 22:14	30,4500NO3-F	LA
Sulfate	13		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	34		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LAB

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-04	Date Collected:	10/25/07 11:45
Client ID:	MW-4D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
'otal Cyanide by MCP 9014									
Cyanide, Total	0.006		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:53	64,9014	AT
General Chemistry									
Alkalinity, Total	70		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
olids, Total Dissolved	94		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	16		mg/l	1.0	1	-	10/29/07 19:43	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 22:15	30,4500NO3-F	LA
ulfate	ND		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-05	Date Collected:	10/25/07 15:45
Client ID:	MW-5	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	0.015		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:54	64,9014	AT
General Chemistry									
Alkalinity, Total	240		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	340		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	55		mg/l	1.0	1	-	10/29/07 19:45	1,9251	LA
Nitrogen, Nitrate	1.3		mg/l	0.10	1	-	10/26/07 22:16	30,4500NO3-F	LA
Sulfate	12		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	20		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-06	Date Collected:	10/25/07 10:10
Client ID:	MW-6S	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	0.007		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:55	64,9014	AT
General Chemistry									
Alkalinity, Total	43		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	210		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	33		mg/l	1.0	1	-	10/29/07 19:45	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 22:16	30,4500NO3-F	LA
Sulfate	84		mg/l	50	5	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-07	Date Collected:	10/25/07 10:00
Client ID:	MW-6D	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	0.007		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:55	64,9014	AT
General Chemistry									
Alkalinity, Total	66		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	210		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	46		mg/l	1.0	1	-	10/29/07 19:46	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 22:17	30,4500NO3-F	LA
Sulfate	35		mg/l	20	2	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-08	Date Collected:	10/25/07 11:30
Client ID:	SW-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
otal Cyanide by MCP 9014									
Cyanide, Total	0.006		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:56	64,9014	AT
General Chemistry									
Alkalinity, Total	62		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
olids, Total Dissolved	130		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	15		mg/l	1.0	1	-	10/29/07 19:46	1,9251	LA
Nitrogen, Nitrate	0.10		mg/l	0.10	1	-	10/26/07 22:18	30,4500NO3-F	LA
ulfate	21		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	23		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

SAMPLE RESULTS

Lab ID: L0716044-09
Client ID: SW-3
Sample Location: HAMILTON, MA
Matrix: Water

Date Collected: 10/25/07 12:15
Date Received: 10/26/07
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	10/29/07 19:00	10/30/07 14:57	64,9014	AT
General Chemistry									
Alkalinity, Total	75		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Solids, Total Dissolved	120		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
Chloride	10		mg/l	1.0	1	-	10/29/07 19:47	1,9251	LA
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 22:18	30,4500NO3-F	LA
Sulfate	30		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

ALPHA

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-10	Date Collected:	10/25/07 13:15
Client ID:	SED-1	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry									
Solids, Total	87		%	0.10	1	-	10/29/07 18:45	30,2540G	NM

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-11	Date Collected:	10/25/07 11:30
Client ID:	SED-2	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry									
Solids, Total	52		%	0.10	1	-	10/29/07 18:45	30,2540G	NM

ALPHA
WOODS HOLE LAB

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0716044
Project Number:	Not Specified	**Report Date:**	11/05/07

SAMPLE RESULTS

Lab ID:	L0716044-12	Date Collected:	10/25/07 12:15
Client ID:	SED-3	Date Received:	10/26/07
Sample Location:	HAMILTON, MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry									
Solids, Total	75		%	0.10	1	-	10/29/07 18:45	30,2540G	NM

ALPHA
WOODS HOLE LABS

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0716044

Project Number: Not Specified **Report Date:** 11/05/07

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry for sample(s): 01-09 Batch: WG299851-2									
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	10/26/07 21:56	30,4500NO3-F	LA
General Chemistry for sample(s): 01-09 Batch: WG299901-1									
Sulfate	ND		mg/l	10	1	10/27/07 11:00	10/27/07 11:00	1,9038	ST
General Chemistry for sample(s): 01-07 Batch: WG300073-2									
Chloride	ND		mg/l	1.0	1	-	10/29/07 19:28	1,9251	LA
General Chemistry for sample(s): 01-09 Batch: WG300077-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	10/29/07 16:17	30,2320B	JT
Total Cyanide by MCP 9014 for sample(s): 01-09 Batch: WG300093-1									
Cyanide, Total	ND		mg/l	0.005	1	10/29/07 19:00	10/30/07 15:15	64,9014	AT
General Chemistry for sample(s): 08-09 Batch: WG300119-2									
Chloride	ND		mg/l	1.0	1	-	10/29/07 21:46	1,9251	LA
General Chemistry for sample(s): 01-09 Batch: WG300312-1									
Solids, Total Dissolved	ND		mg/l	10	1	-	10/31/07 10:35	30,2540C	DW
General Chemistry for sample(s): 01-09 Batch: WG300570-1									
Chemical Oxygen Demand	ND		mg/l	20	1	-	11/01/07 15:30	30,5220D	DW

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-09 Batch: WG299851-1					
Nitrogen, Nitrate	102	-	88-105	-	
Associated sample(s): 01-09 Batch: WG299901-2					
Sulfate	105	-	84-108	-	
Associated sample(s): 01-07 Batch: WG300073-1					
Chloride	100	-	84-110	-	
Associated sample(s): 01-09 Batch: WG300077-2					
Alkalinity, Total	103	-	80-115	-	4
Total Cyanide by MCP 9014 Associated sample(s): 01-09 Batch: WG300093-2 WG300093-3					
Cyanide, Total	108	108	80-120	0	20
Associated sample(s): 08-09 Batch: WG300119-1					
Chloride	100	-	84-110	-	
Associated sample(s): 01-09 Batch: WG300312-2					
Solids, Total Dissolved	95	-	72-121	-	

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-09 Batch: WG300570-2					
Chemical Oxygen Demand	99	-	93-106	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-09 QC Batch ID: WG299851-3 QC Sample: L0716044-09 Client ID: SW-3									
Nitrogen, Nitrate	ND	4	4.2	105	-	-	83-120	-	6
Associated sample(s): 01-09 QC Batch ID: WG299901-3 QC Sample: L0716044-05 Client ID: MW-5									
Sulfate	12	40	68	140	-	-	55-147	-	14
Associated sample(s): 01-07 QC Batch ID: WG300073-3 QC Sample: L0716044-01 Client ID: MW-1									
Chloride	12	20	33	105	-	-	58-140	-	7
Associated sample(s): 01-09 QC Batch ID: WG300077-4 QC Sample: L0716044-09 Client ID: SW-3									
Alkalinity, Total	75	100	170	99	-	-	86-116	-	4
Associated sample(s): 08-09 QC Batch ID: WG300119-3 QC Sample: L0716044-08 Client ID: SW-2									
Chloride	15	20	36	105	-	-	58-140	-	7
Associated sample(s): 01-09 QC Batch ID: WG300570-3 QC Sample: L0716044-01 Client ID: MW-1									
Chemical Oxygen Demand	ND	238	260	109	-	-	84-120	-	12

Lab Duplicate Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Associated sample(s): 01-09 QC Batch ID: WG299851-4 QC Sample: L0716064-05 Client ID: DUP Sample					
Nitrogen, Nitrate	2.6	2.6	mg/l	0	6
Associated sample(s): 01-09 QC Batch ID: WG299901-4 QC Sample: L0716044-09 Client ID: SW-3					
Sulfate	30	28	mg/l	7	14
Associated sample(s): 01-07 QC Batch ID: WG300073-4 QC Sample: L0715882-01 Client ID: DUP Sample					
Chloride	94	95	mg/l	1	7
Associated sample(s): 01-09 QC Batch ID: WG300077-3 QC Sample: L0716044-09 Client ID: SW-3					
Alkalinity, Total	75	75	mg CaCO3/L	0	4
Associated sample(s): 10-12 QC Batch ID: WG300094-1 QC Sample: L0715790-01 Client ID: DUP Sample					
Solids, Total	91	92	%	1	20
Associated sample(s): 08-09 QC Batch ID: WG300119-4 QC Sample: L0716044-08 Client ID: SW-2					
Chloride	15	15	mg/l	0	7
Associated sample(s): 01-09 QC Batch ID: WG300312-3 QC Sample: L0715884-01 Client ID: DUP Sample					
Solids, Total Dissolved	630	640	mg/l	2	11
Associated sample(s): 01-09 QC Batch ID: WG300570-4 QC Sample: L0716044-01 Client ID: MW-1					
Chemical Oxygen Demand	ND	23	mg/l	NC	12

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent
E	Absent
F	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-01A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-01B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-01C	Plastic 250ml NaOH preserved	D	>12	4C	Y	Absent	MCP-TCN9014-04
L0716044-01D	Plastic 250ml H2SO4 preserved	D	<2	4C	Y	Absent	COD-5220
L0716044-01E	Plastic 500ml unpreserved	D	7	4C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-01F	Plastic 500ml unpreserved	D	7	4C	Y	Absent	TDS-2540
L0716044-01G	Plastic 500ml HNO3 preserved	D	<2	4C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-01H	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8081-04
L0716044-01I	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8081-04
L0716044-01J	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-01K	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-01L	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-01M	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-02A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-02B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-02C	Plastic 250ml NaOH preserved	C	>12	3C	Y	Absent	MCP-TCN9014-04
L0716044-02D	Plastic 250ml H2SO4 preserved	C	<2	3C	Y	Absent	COD-5220
L0716044-02E	Plastic 500ml unpreserved	C	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-02F	Plastic 500ml unpreserved	C	7	3C	Y	Absent	TDS-2540

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-02G	Plastic 500ml HNO3 preserved	C	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-02H	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8081-04
L0716044-02I	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8081-04
L0716044-02J	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8082-04
L0716044-02K	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8082-04
L0716044-02L	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-02M	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-03A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-03B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-03C	Plastic 250ml NaOH preserved	C	>12	3C	Y	Absent	MCP-TCN9014-04
L0716044-03D	Plastic 250ml H2SO4 preserved	C	<2	3C	Y	Absent	COD-5220
L0716044-03E	Plastic 500ml unpreserved	C	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-03F	Plastic 500ml unpreserved	C	7	3C	Y	Absent	TDS-2540
L0716044-03G	Plastic 500ml HNO3 preserved	C	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-03H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0716044-03I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0716044-03J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0716044-03K	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-03L	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-03M	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-04A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-04B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-04C	Plastic 250ml NaOH preserved	C	>12	3C	Y	Absent	MCP-TCN9014-04
L0716044-04D	Plastic 250ml H2SO4 preserved	B	<2	2C	Y	Absent	COD-5220
L0716044-04E	Plastic 500ml unpreserved	C	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-04F	Plastic 500ml unpreserved	C	7	3C	Y	Absent	TDS-2540

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-04G	Plastic 500ml HNO3 preserved	C	<2	3C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-04H	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8081-04
L0716044-04I	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8081-04
L0716044-04J	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-04K	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-04L	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-04M	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-05A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-05B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-05C	Plastic 250ml NaOH preserved	C	>12	3C	Y	Absent	MCP-TCN9014-04
L0716044-05D	Plastic 250ml H2SO4 preserved	C	<2	3C	Y	Absent	COD-5220
L0716044-05E	Plastic 500ml unpreserved	C	7	3C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-05F	Plastic 500ml unpreserved	C	7	3C	Y	Absent	TDS-2540
L0716044-05G	Plastic 500ml HNO3 preserved	D	<2	4C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-05H	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8081-04
L0716044-05I	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8081-04
L0716044-05J	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8082-04
L0716044-05K	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8082-04
L0716044-05L	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-05M	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-06A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-06B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-06C	Plastic 250ml NaOH preserved	D	>12	4C	Y	Absent	MCP-TCN9014-04
L0716044-06D	Plastic 250ml H2SO4 preserved	D	<2	4C	Y	Absent	COD-5220
L0716044-06E	Plastic 500ml unpreserved	D	7	4C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-06F	Plastic 500ml unpreserved	F	7	2C	Y	Absent	TDS-2540

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-06G	Plastic 500ml HNO3 preserved	F	<2	2C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-06H	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8081-04
L0716044-06I	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8081-04
L0716044-06J	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8082-04
L0716044-06K	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8082-04
L0716044-06L	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-06M	Amber 1000ml unpreserved	E	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-07A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-07B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-07C	Plastic 250ml NaOH preserved	D	>12	4C	Y	Absent	MCP-TCN9014-04
L0716044-07D	Plastic 250ml H2SO4 preserved	A	<2	2.4C	Y	Absent	COD-5220
L0716044-07E	Plastic 500ml unpreserved	D	7	4C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-07F	Plastic 500ml unpreserved	E	7	2C	Y	Absent	TDS-2540
L0716044-07G	Plastic 500ml HNO3 preserved	D	<2	4C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0716044-07H	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8081-04
L0716044-07I	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8081-04
L0716044-07J	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8082-04
L0716044-07K	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8082-04
L0716044-07L	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-07M	Amber 1000ml unpreserved	F	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-08A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-08B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-08C	Plastic 250ml NaOH preserved	D	>12	4C	Y	Absent	MCP-TCN9014-04
L0716044-08D	Plastic 250ml H2SO4 preserved	D	<2	4C	Y	Absent	COD-5220
L0716044-08E	Plastic 500ml unpreserved	D	7	4C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-08F	Plastic 500ml unpreserved	D	7	4C	Y	Absent	TDS-2540

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-08G	Plastic 500ml HNO3 preserved	D	<2	4C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6020S
L0716044-08H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0716044-08I	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0716044-08J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0716044-08K	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0716044-08L	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-08M	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-09A	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-09B	Vial HCl preserved	C	NA	3C	Y	Absent	MCP-8260-04
L0716044-09C	Plastic 250ml NaOH preserved	D	>12	4C	Y	Absent	MCP-TCN9014-04
L0716044-09D	Plastic 250ml H2SO4 preserved	D	<2	4C	Y	Absent	COD-5220
L0716044-09E	Plastic 500ml unpreserved	D	7	4C	Y	Absent	ALK-T-2320,CL-9251,NO3-4500,SO4-9038
L0716044-09F	Plastic 500ml unpreserved	D	7	4C	Y	Absent	TDS-2540
L0716044-09G	Plastic 500ml HNO3 preserved	D	<2	4C	Y	Absent	MCP-7470S,MCP-AG-6020S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6020S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6020S,MCP-SE-6010S,MCP-ZN-6020S
L0716044-09H	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8081-04
L0716044-09I	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8081-04
L0716044-09J	Amber 1000ml unpreserved	B	7	2C	Y	Absent	MCP-8082-04
L0716044-09K	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8082-04
L0716044-09L	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-09M	Amber 1000ml unpreserved	D	7	4C	Y	Absent	MCP-8270-04,MCP-8270SIM-04
L0716044-10A	Vial MeOH preserved	A	NA	2.4C	Y	Absent	MCP-8260H-04
L0716044-10B	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-7471T,MCP-AG-6010T,MCP-AS-6010T,MCP-BA-6010T,MCP-CA-6010T,MCP-CD-6010T,MCP-CR-6010T,MCP-CU-6010T,MCP-FE-6010T,MCP-MN-6010T,MCP-NA-6010T,MCP-PB-6010T,MCP-SE-6010T,MCP-ZN-6010T,TS
L0716044-10C	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-8081-04,MCP-8082-04,MCP-8270-04
L0716044-11A	Vial MeOH preserved	A	NA	2.4C	Y	Absent	MCP-8260H-04

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0716044-11B	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-7471T,MCP-AG-6010T,MCP-AS-6010T,MCP-BA-6010T,MCP-CA-6010T,MCP-CD-6010T,MCP-CR-6010T,MCP-CU-6010T,MCP-FE-6010T,MCP-MN-6010T,MCP-NA-6010T,MCP-PB-6010T,MCP-SE-6010T,MCP-ZN-6010T,TS
L0716044-11C	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-8081-04,MCP-8082-04,MCP-8270-04
L0716044-12A	Vial MeOH preserved	A	NA	2.4C	Y	Absent	MCP-8260H-04
L0716044-12B	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-7471T,MCP-AG-6010T,MCP-AS-6010T,MCP-BA-6010T,MCP-CA-6010T,MCP-CD-6010T,MCP-CR-6010T,MCP-CU-6010T,MCP-FE-6010T,MCP-MN-6010T,MCP-NA-6010T,MCP-PB-6010T,MCP-SE-6010T,MCP-ZN-6010T,TS
L0716044-12C	Amber 500ml unpreserved	A	NA	2.4C	Y	Absent	MCP-8081-04,MCP-8082-04,MCP-8270-04

Container Comments

L0716044-01A	Temp Probe
L0716044-01B	Temp Probe
L0716044-01C	Temp Probe
L0716044-01D	Temp Probe
L0716044-01E	Temp Probe
L0716044-01F	Temp Probe
L0716044-01G	Temp Probe
L0716044-01H	Temp Probe
L0716044-01I	Temp Probe
L0716044-01J	Temp Probe
L0716044-01K	Temp Probe
L0716044-01L	Temp Probe
L0716044-01M	Temp Probe
L0716044-02A	Temp Probe
L0716044-02B	Temp Probe
L0716044-02C	Temp Probe
L0716044-02D	Temp Probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0716044-02E	Temp Probe
L0716044-02F	Temp Probe
L0716044-02G	Temp Probe
L0716044-02H	Temp Probe
L0716044-02I	Temp Probe
L0716044-02J	Temp Probe
L0716044-02K	Temp Probe
L0716044-02L	Temp Probe
L0716044-02M	Temp Probe
L0716044-03A	Temp Probe
L0716044-03B	Temp Probe
L0716044-03C	Temp Probe
L0716044-03D	Temp Probe
L0716044-03E	Temp Probe
L0716044-03F	Temp Probe
L0716044-03G	Temp Probe
L0716044-03H	Temp Probe
L0716044-03I	Temp Probe
L0716044-03J	Temp Probe
L0716044-03K	Temp Probe
L0716044-03L	Temp Probe
L0716044-03M	Temp Probe
L0716044-04A	Temp Probe
L0716044-04B	Temp Probe
L0716044-04C	Temp Probe
L0716044-04D	Temp Probe
L0716044-04E	Temp Probe
L0716044-04F	Temp Probe

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0716044-04G	Temp Probe
L0716044-04H	Temp Probe
L0716044-04I	Temp Probe
L0716044-04J	Temp Probe
L0716044-04K	Temp Probe
L0716044-04L	Temp Probe
L0716044-04M	Temp Probe
L0716044-05A	Temp Probe
L0716044-05B	Temp Probe
L0716044-05C	Temp Probe
L0716044-05D	Temp Probe
L0716044-05E	Temp Probe
L0716044-05F	Temp Probe
L0716044-05G	Temp Probe
L0716044-05H	Temp Probe
L0716044-05I	Temp Probe
L0716044-05J	Temp Probe
L0716044-05K	Temp Probe
L0716044-05L	Temp Probe
L0716044-05M	Temp Probe
L0716044-06A	Temp Probe
L0716044-06B	Temp Probe
L0716044-06C	Temp Probe
L0716044-06D	Temp Probe
L0716044-06E	Temp Probe
L0716044-06F	Temp Probe
L0716044-06G	Temp Probe
L0716044-06H	Temp Probe

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0716044
Report Date: 11/05/07

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0716044-06I	Temp Probe
L0716044-06J	Temp Probe
L0716044-06K	Temp Probe
L0716044-06L	Temp Probe
L0716044-06M	Temp Probe
L0716044-07A	Temp Probe
L0716044-07B	Temp Probe
L0716044-07C	Temp Probe
L0716044-07E	Temp Probe
L0716044-07F	Temp Probe
L0716044-07G	Temp Probe
L0716044-07H	Temp Probe
L0716044-07I	Temp Probe
L0716044-07J	Temp Probe
L0716044-07K	Temp Probe
L0716044-07L	Temp Probe
L0716044-07M	Temp Probe
L0716044-08A	Temp Probe
L0716044-08B	Temp Probe
L0716044-08C	Temp Probe
L0716044-08D	Temp Probe
L0716044-08E	
L0716044-08F	Temp Probe
L0716044-08G	Temp Probe
L0716044-08H	Temp Probe
L0716044-08I	Temp Probe
L0716044-08J	Temp Probe
L0716044-08K	Temp Probe

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis

Container Comments

L0716044-08L	Temp Probe
L0716044-08M	Temp Probe
L0716044-09A	Temp Probe
L0716044-09B	Temp Probe
L0716044-09C	Temp Probe
L0716044-09D	Temp Probe
L0716044-09E	Temp Probe
L0716044-09F	Temp Probe
L0716044-09G	Temp Probe
L0716044-09H	Temp Probe
L0716044-09I	Temp Probe
L0716044-09J	Temp Probe
L0716044-09K	Temp Probe
L0716044-09L	Temp Probe
L0716044-09M	Temp Probe

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.
LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD - Matrix Spike Sample Duplicate: Refer to MS.
NA - Not Applicable.
NI - Not Ignitable.
NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND - Not detected at the reported detection limit for the sample.
RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

The following data qualifiers have been identified for use under the CT DEP Reasonable Confidence Protocols.

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

J - Estimated value. The analyte was tentatively identified; the quantitation is an estimation. (Tentatively identified compounds only.)

Standard Qualifiers

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

60 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Woods Hole Labs performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Woods Hole Labs be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

51 Fremont Street Needham, MA 02494 Tel. 781-455-0003, Fax: 781-455-8336

EST environmental & industrial

CHAIN OF CUSTODY RECORD

ALPHA Job # 0716044 last revised by AV 2/07

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	215 First Street, Suite 320, Cambridge, MA 02142
Contact	Michael Looney
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Michael Looney Phone: 617-498-4682
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX
1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA
Lab to Invoice: SEA
Lab Report to: Michael.Looney@seacon.com
Billing Reference: 7800-Q#-xx
Q#4980612-07R

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Glass	Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	ABN Extractable Compounds (4)	Pesticides (5)	PCBs (5)	Alkalinity (2)	Comments
MW-1	10/25/07	1425	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	EST to complete Temp, pH
MW-3		1440	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
MW-4S		1150	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
MW-4D		1145	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
MW-5		1545	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
MW-6S		1010	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
MW-6D		1000	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
SW-2		1130	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	
SW-3		1215	2	6	5	2	X	X	X	X			X	X	X	X	X	X	X	X	

Turnaround Information
- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By: _____

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!)

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen), sulfate, COD, total cyanide

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(4) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (including PAH's)

(5) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 Adam Wallenstein	10/26/07 0730	1	10/26/07 8:00
2	10/26/07 8:50	2	10/26/07 0850
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

EST environmental & industrial

CHAIN OF CUSTODY RECORD

last revised by AV 10/07

ALPHA Job # L0716044

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	215 First Street, Suite 320 Cambridge, MA 02142
Contact	Michael Looney
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Michael Looney Phone: 617-498-4632
Location ID #	Fax:
Description	Sediment Sampling PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Michael.Looney@seacon.com

Billing Reference: 7800-Q#-xx

Q#4980612-07R

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type: Glass	Plastic	VOA's	Preservation: HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Total Metals (1)	VOCs (2)	ABN Extractable Compounds (3)	PCB's & Pesticides (4)	Comments:
SED-1	10/25	1315	4	2		1					X		X	X	X	X	X	
SED-2	↓	1130	4	2		1					X		X	X	X	X	X	
SED-3	↓	1215	4	2		1					X		X	X	X	X	X	

Turnaround Information

- ☐ Std. 10 Day Turnaround
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

Approved By:

QA/QC

SPECIAL QA/QC or DATA Requirements:

Additional Information

(1) Total Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na

(2) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes)

(3) Acid & Base/Neutral Extractable Compounds by EPA Method 8270 (Including PAH's)

(4) PCBs and Pesticides by EPA Method 8080

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	10/25 1500	1 [signature]	10/26/07 8:00
2 [signature]	10/26/07 8:50	2 T Rafferty	10/26/07 0850
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

Round 4 – March 12, 2008

Water Quality Results

March 12, 2008

S E A

S E A CONSULTANTS INC.
Scientists/Engineers/Architects

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

Re: Comprehensive Site Assessment (CSA)
Water Quality and Sediment Monitoring Results (Round 4 of 4)
Hamilton Sanitary Landfill
S E A Ref. No. 2006054.05

Dear Mr. Carrigan:

Enclosed are the laboratory analytical results for the fourth round of Comprehensive Site Assessment (CSA) water quality monitoring performed at the Hamilton Sanitary Landfill. The sampling activities were performed on January 23, 2008 and were completed in accordance with S E A's May 19, 2006 CSA Scope of Work, as approved by DEP in its letter dated September 13, 2006.

The water quality monitoring network consists of eight groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4S/4D, MW-5, and MW-6S/6D). Refer to the attached Figure 1 for sampling locations. The water quality samples were collected by Environmental Sampling Technology (EST) of Needham, Massachusetts and were analyzed by Alpha Analytical Laboratories of Westborough, Massachusetts. The groundwater monitoring program for the Round 4 event is summarized on the attached Table 1. As noted on Table 1, low flow sampling procedures were followed when collecting samples from the monitoring well network.

Groundwater depth and total well depth were measured from seven of the eight wells installed in connection with the Hamilton Landfill CSA (MW-2 was dry and could not be sampled), as well as from additional wells that comprise a portion of the Town of Manchester's landfill monitoring well network. Water level measurements from the Manchester wells have been recorded since the second round of CSA monitoring in response to the DEP's conditional approval of the Hamilton CSA Scope of Work. The DEP requested that the Manchester wells be gauged to provide additional data points for mapping groundwater contours in connection with the Hamilton CSA. A discussion of the water level measurements and specific wells gauged from the Manchester network is provided in the following summary of Round 4 CSA monitoring results.

CSA Monitoring Results

Table 2 summarizes the groundwater analytical results and compares the results to the Massachusetts drinking water standards (MMCLs and SMCLs), as well as to the Massachusetts Contingency Plan (MCP) RCGW-1 reporting thresholds provided in Section 310 CMR 40.1600 of the MCP. The results of the monitoring round are highlighted below.

Groundwater Monitoring Results (See Table 2)

- Groundwater monitoring well MW-2 was dry and therefore could not be sampled.

- Dissolved iron concentrations were detected at or in excess of the Massachusetts DEP Secondary Maximum Contaminant Level (SMCLs) of 0.3 mg/l at monitoring wells MW-1, MW-4D, MW-5 and MW-6D. The iron concentrations ranged from 0.3 mg/l at MW-5 to 12 mg/l at MW-1. SMCLs are non-enforceable standards that were developed to protect the aesthetic quality of drinking water.

S E A

- Dissolved manganese concentrations were detected in excess of its SMCL standard of 0.05 mg/l at monitoring wells MW-1, MW-3, MW-4S, MW-4D, MW-5 and MW-6D. The manganese concentrations ranged from 0.069 mg/l at MW-3 to 9.11 mg/l at MW-4D.

- Dissolved sodium concentrations were detected at or in excess of the Office of Research and Standards Guidelines (ORSG) level of 20 mg/l at monitoring wells MW-4D, MW-5, MW-6S and MW-6D. No MMCL, SMCL, or RCGW-1 standards exist for dissolved sodium. The highest sodium concentration was recorded at MW-5 at 36 mg/l.

- No Volatile Organic Compounds (VOCs) were detected in excess of the Massachusetts drinking water standards or RCGW-1 reporting thresholds at the monitoring well locations.

Water Level Measurements (See Table 3)

Water level elevations were collected from seven of the eight Hamilton groundwater monitoring wells and two of the three on-site piezometer locations (PZ-2 was inaccessible because of thin ice and could not be measured). In addition, water level measurements were also collected from four shallow groundwater monitoring wells belonging to the Town of Manchester. As coordinated with DEP, Hamilton received approval from the Town of Manchester to collect water level measurements from Manchester's shallow groundwater monitoring wells located near the northern portion of the Manchester landfill. The specific Manchester wells from which water level measurements were sought in connection with the Hamilton CSA were MW-1S, MW-2S, MW-5S, MW-6S, HWH-12, HWH-13, and HWH-14. However, wells HWH-12, HWH-13, and HWH-14 (located along Chebacco Rd.) were removed several years ago and are not available for gauging. Therefore, the Manchester wells that have been gauged as part of the Hamilton CSA are MW-1S, MW-2S, MW-5S and MW-6S. To distinguish the Manchester wells from the Hamilton CSA well network, the Manchester wells have been labeled with a "manch" subscript (i.e. water level measurements were obtained from wells MW-1S_{manch}, MW-2S_{manch}, MW-5S and MW-6S_{manch}).

Water level measurements collected during the Round 4 monitoring event are summarized in Table 3. The Hamilton groundwater wells and piezometers, along with the four Manchester shallow groundwater wells were surveyed by S E A personnel on December 4th and 5th of 2007. The elevations for these wells and piezometers are included in Table 3.

If you have any questions regarding the CSA monitoring program or enclosed monitoring results, please call me at (617) 498-4624.

Very truly yours,

S E A CONSULTANTS INC.

Stephen E. Wright, P.E.
Attachments
I:_clients\Hamilton MA\2006054.05 - CSA Monitoring\reports\S E A\CSA (Water, Sediment)\Water Quality_1-08.doc

cc: ~~Hamilton DPW (w/attachments)~~
Michael Looney, S E A Consultants, Inc. (w/attachments)

TABLE 1
Hamilton Sanitary Landfill
Comprehensive Site Assessment Water Quality Monitoring Program

ROUND 4

Monitoring Points	Analytical Category		Description
MW-1, MW-2, MW-3, MW-4S/D, MW-5, MW-6S/D	*Standard Parameters per 310 CMR 19.132*	General Chemistry	Temperature, pH, Specific Conductance, Dissolved Oxygen, Alkalinity, Total Dissolved Solids, Total Cyanide, Chloride, Nitrate (as Nitrogen), Sulfate, COD.
		Dissolved Metals	Arsenic, Barium, Cadmium, Calcium, Chromium (total), Copper, Iron, Lead, Manganese, Mercury, Selenium, Sodium, Silver, Zinc.
		VOCs (Including Acetone, MEK, MIBK, and Xylenes)	EPA Method 8260
	Extended Parameters	Acid and Base/Neutral Extractable Compounds (including PAHs)	**Not Applicable for Round 4**
		PCBs and Pesticides	**Not Applicable for Round 4**

NOTES:

1. Low flow sampling procedures shall be used when collecting samples from groundwater monitoring wells.

Table 2
Summary of Groundwater Analytical Results
Hamilton Sanitary Landfill
CSA Round 4

LOCATION	WATER QUALITY STANDARDS GUIDELINES				MW-1	MW-2	MW-3	MW-4S	MW-4D	MW-5	MW-6S	MW-6D
SAMPLING DATE					23-JAN-08	23-JAN-10	23-JAN-08	23-JAN-08	23-JAN-08	23-JAN-08	23-JAN-08	23-JAN-08
LAB SAMPLE ID	MMCL	RCGW-1	SMCL	Units	L0801067-01		L0801067-02	L0801067-03	L0801067-04	L0801067-05	L0801067-06	L0801067-07
Alkalinity, Total				mg CaCO3/L	29		13	3.7	240	210	75	96
Solids, Total Dissolved			500	mg/l	100		52	36	310	370	280	230
Cyanide, Total	0.2	0.03		mg/l	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chloride			250	mg/l	20		8.8	10	34	67	57	40
Nitrogen, Nitrate	10			mg/l	<0.5		0.52	<0.1	<0.5	7.5	0.87	<0.5
Sulfate			250	mg/l	21		<10	11	10	<10	60	44
Chemical Oxygen Demand				mg/l	23		<20	<20	23	<20	<20	<20
Dissolved Metals by MCP 6000/7000 series												
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	0.018	D	0.032	0.03	0.05	0.183	0.051	0.038
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	7.7		6.2	3.6	44	74	49	30
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	R	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron, Dissolved			0.3	mg/l	12		<0.05	0.05	4.6	0.3	<0.05	9.9
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	0.759	Y	0.069	0.156	9.11	2.8	<0.01	5.44
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	12		6.1	8	33	36	35	20
Zinc, Dissolved		0.9	5	mg/l	<0.05		<0.05	<0.05	0.067	<0.05	0.103	<0.05
Volatile Organics by MCP 8260B (Results Above Detection Limits Only)												
1,4-Dichlorobenzene	0.005	0.005		mg/l	<.0025		<.0025	<.0025	0.0027	<.0025	<.0025	<.0025
Benzene	0.005	0.005		mg/l	<.0005		<.0005	<.0005	0.00064	<.0005	<.0005	<.0005
Chlorobenzene	0.1	0.1		mg/l	<.0005		<.0005	<.0005	0.004	<.0005	<.0005	0.00073
Ethyl ether		1		mg/l	<.0025		<.0025	<.0025	0.028	0.0028	<.0025	0.0027
Methyl tert butyl ether		0.07		mg/l	<.001		<.001	<.001	<.001	<.001	<.001	0.0018

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).

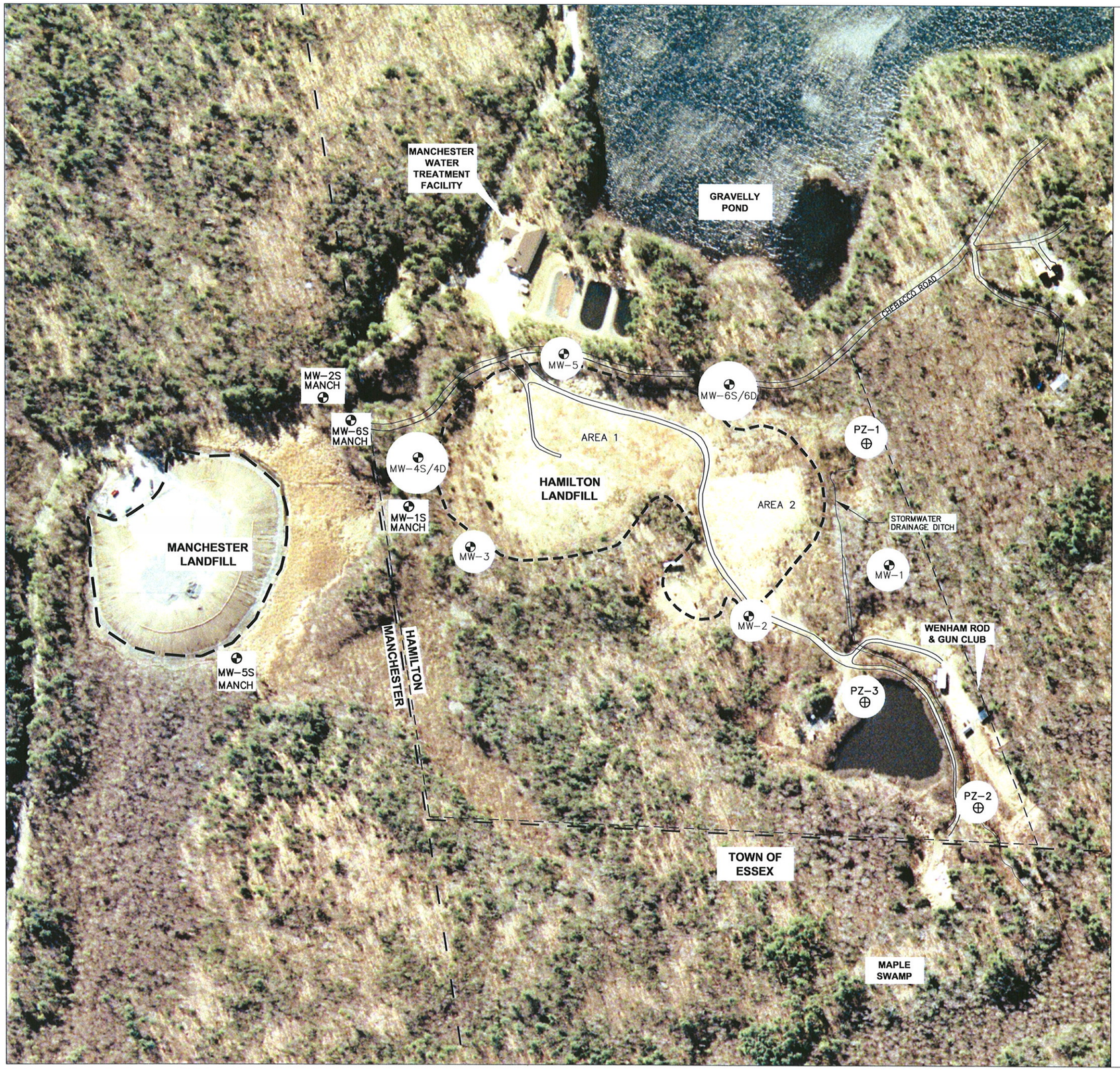
Bolded and shaded values indicate analytical results which meet or exceed Water Quality Standards.
Bolded values indicate analytical results which exceed the laboratory detection limit.
Bold and italic detection limits denote detection limits that exceed the water quality standards.
* Sodium water quality standard based on Office of Research and Standards Guidelines (ORSG).

Table 3
Summary of Water Level Measurements
Hamilton Sanitary Landfill

OWNER	LOCATION	SCREEN DEPTH (Feet below ground surface)	TOP OF PVC ELEVATION (Feet) (1)	WATER LEVEL (Feet)							
				CSA ROUND 1 5-Mar-07		CSA ROUND 2 5-Jul-07		CSA ROUND 3 25-Oct-07		CSA ROUND 4 23-JAN-08	
MONITORING WELLS											
HAMILTON	MW-1	5 - 15	62.91	4.38		5.07		7.43		4.58	
	MW-2	2 - 7	68.43	8.34		DRY		DRY		DRY	
	MW-3	5 - 15	70.20	6.38		7.87		9.55		6.55	
	MW-4S	2 - 12	69.70	5.93		6.75		8.52		5.95	
	MW-4D	27 - 37	NA	6.07		6.71		8.46		6.13	
	MW-5	7 - 17	73.80	12.16		12.88		15.79		11.82	
	MW-6S	17 - 27	74.43	19.45		21.22		24.58		21.24	
	MW-6D	39 - 44	NA	18.83		20.02		23.44		20.00	
MANCHESTER	$MW\text{-}1S_{manch}$	9.2 - 13.8	66.10	Not Gauged		3.09		4.79		2.55	
	$MW\text{-}2S_{manch}$	15.2 - 24.8	67.15	Not Gauged		3.96		5.62		3.56	
	$MW\text{-}5S_{manch}$	5.2 - 9.8	68.06	Not Gauged		NA		6.97		4.84	
	$MW\text{-}6S_{manch}$	6.4-11.4	68.32	Not Gauged		5.1		5.12		4.76	
PIEZOMETERS											
HAMILTON			PIEZOMETER ELEVATION (Feet)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)	WATER LEVEL (INSIDE)	WATER LEVEL (OUTSIDE)
	PZ-1		61.92	1.81	1.85	2.79	DRY	DRY	DRY	1.74	1.88
	PZ-2		--	2.06	2.21	2.21	2.46	2.61	2.66	NA (7)	NA (7)
	PZ-3		56.94	2.06	2.09	2.30	2.28	2.45	2.45	1.58	1.75

Notes:

1. S E A surveyed the the Hamilton groundwater wells and piezometers, along with the four Manchester shallow groundwater wells on December 4th and 5th of 2007.
Manchester well MW-2S (top of pvc) was used as the benchmark. (MW-2S = 67.15 NGVD per 1996 Manchester CSA report, prepared by CDM)
2. Elevations of Manchester wells MW-1S, MW-2S and MW-5S were obtained from table 2-1 of January 1996 Pine Street Landfill Comprehensive Site Assessment, prepared by CDM.
3. Groundwater levels at the monitoring wells were measured from the top of PVC riser.
4. Water depths were measured from the top of the piezometer drive pipe (cap off) from both inside and outside the casing at the three piezometers locations.
5. Manchester well screen depths provided in Appendix B of July 1996 Manchester CSA Report, prepared by CDM.
6. Well construction information is not available for Manchester well MW-6S. The depth of the well was measured by S E A on 12/5/07 (a 5' well screen is assumed).
7. During the round four sampling event, piezometer PZ-2 was inaccessible because of thin ice and could not be measured.



LEGEND

- PROPERTY LINE
- TOWN BOUNDARY
- APPROX. LIMIT OF WASTE (PER SEPTEMBER 2007 TEST PITTING)
- APPROX. LIMIT OF WASTE (PER 1991 ISA REPORT)
- MW-6 — HAMILTON LF GROUNDWATER MONITORING WELL INSTALLED 2006
- MW-6 MANCH — MANCHESTER GROUNDWATER MONITORING WELL
- PZ-1 — PIEZOMETER LOCATION

MANCHESTER WELLS WHERE WATER LEVELS HAVE BEEN TAKEN FOR HAMILTION CSA

WELL ID	DATE INSTALLED	SCREEN INTERVAL (FBGS) (1)	ELEVATION (TOP OF PVC RISER) (FEET MSL) (2)
MW-1S	6/1994	9.2-13.8	66.10
MW-2S	6/1994	15.2-24.8	67.15
MW-5S	6/1994	5.2-9.8	68.06
MW-6S	1998	6.4-11.4	68.32

NOTES:

1. FBGS: = FEET BELOW GROUND SURFACE. ALL DEPTHS, WITH EXCEPTION OF MW-6S, WERE OBTAINED FROM TABLE 2-1 OF JANUARY 1996 MANCHESTER LANDFILL CSA REPORT, PREPARED BY CDM. WELL CONSTRUCTION INFORMATION IS NOT AVAILABLE FOR MW-6S. THE DEPTH OF THE WELL WAS MEASURED BY S E A ON 12/5/07. A 5 FOOT WELL SCREEN IS ASSUMED BASED ON TOTAL WELL DEPTH AND 5-FT SCREEN AT MW-5S.
2. ALL ELEVATIONS, WITH THE EXCEPTION OF MW-6S, WERE OBTAINED FROM MONITORING WELL CONSTRUCTION LOGS PROVIDED IN THE MANCHESTER LANDFILL CSA REPORT. MW-6S WAS SURVEYED BY S E A ON 12/4/07 USING TOP OF PVC RISER AT MW-2S AS BENCHMARK ELEVATION (67.15). ALL ELEVATIONS ARE BASED ON USGS DATUM (NGVD 1929) PER TABLE 2-1 OF THE MANCHESTER CSA REPORT.

0 300 600 900
SCALE IN FEET

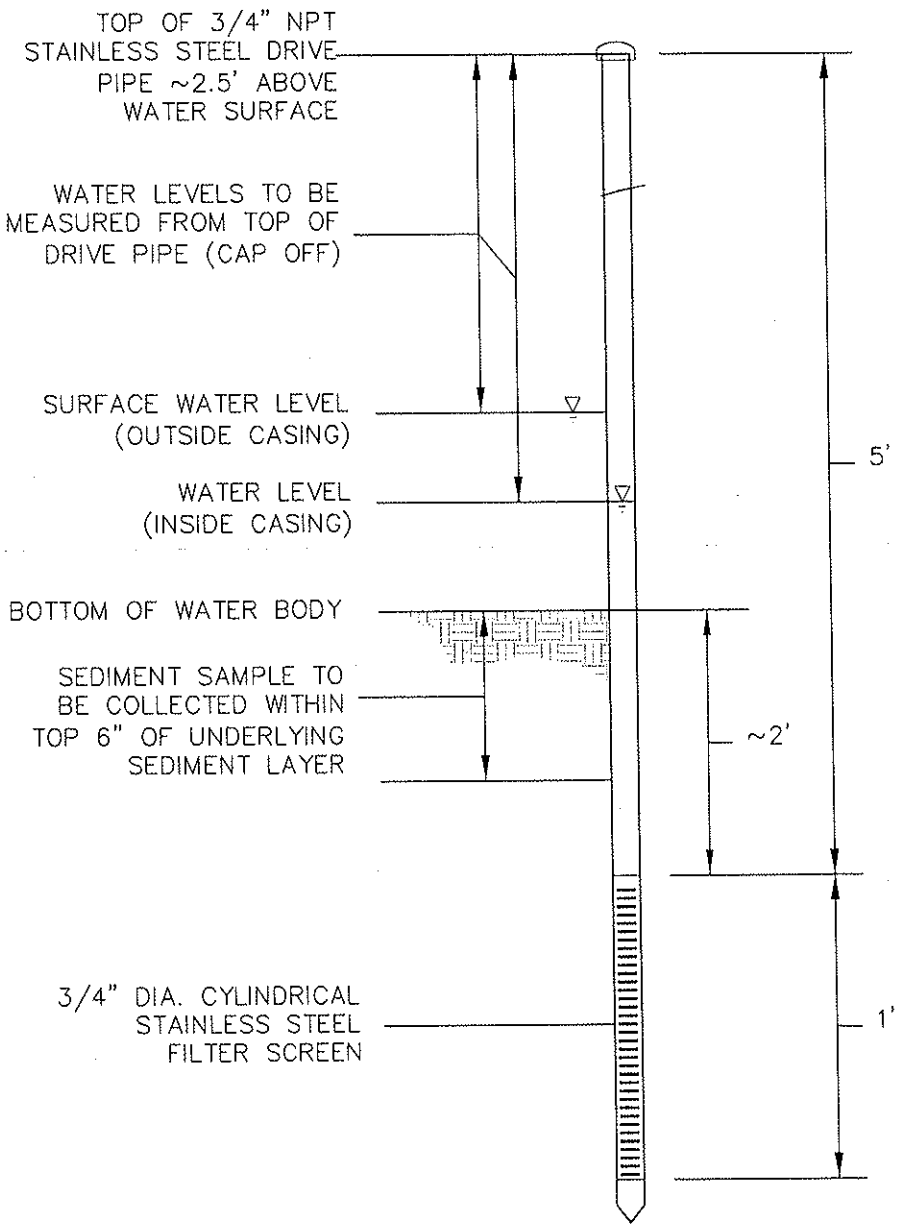
S E A
SEA CONSULTANTS INC.
Scientists/Engineers/Architects

No.	Description	Date
	REVISIONS	

Scale: AS SHOWN
Date: JANUARY 2008
Job No.: 2006054.02A
Designed by: SEW
Drawn by: MSL
Checked by: SEW
Approved by: SEW

Client: TOWN OF HAMILTON, MASSACHUSETTS
Project: HAMILTON SANITARY LANDFILL
Drawing: CSA MONITORING LOCATIONS
Sheet: FIGURE 1

PLOT DATE=3/19/2008 10:53:15 AM USER=MICHAEL LOONEY FILENAME=G:_clients\Hamilton MA\2006054 - Hamilton Landfill\general\CSA_Monitoring_Locations.dwg



NOTES:

1. INSTALLED MODEL 615N STAINLESS STEEL DRIVE POINT PIEZOMETERS FROM SOLINST.
2. PIEZOMETERS WERE INSTALLED WITH DIRECT PUSH TECHNOLOGY USING A MANUAL SLIDE HAMMER.
3. PIEZOMETERS WERE INSTALLED FOR HYDRAULIC HEAD MEASUREMENTS.

Figure 2

PIEZOMETER DETAIL (PZ-1, PZ-2 & PZ-3)

HAMILTON SANITARY LANDFILL
HAMILTON, MASSACHUSETTS

S E A

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Scientists/Engineers/Architects

EST environmental & industrial

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LOW FLOW GROUNDWATER MONITORING REPORT

Client: SEA Consultants
215 First Street, Suite 320
Cambridge, MA 02142
Attention: Mr. Michael Looney
Report Date: January 28, 2008

Site Location: Hamilton Sanitary Landfill
Sample Date: January 23, 2008
Weather Conditions: Clear, +/- 30°F
Field Technician(s): Ryan Decker, Matt Gould

Location ID	SWL (feet)	pH (S.U.)	Cond (mS/cm)	Temp (°C)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW-1	4.58	6.26	0.163	7.95	0.40	11.90	-37
MW-2	--	--	--	--	--	--	--
MW-3	6.55	5.51	0.083	4.67	10.60	0.00	169
MW-4S	5.95	5.19	0.077	6.63	4.85	1.75	259
MW-4D	6.13	6.05	0.572	7.87	0.24	28.2	-58
MW-5	11.82	6.18	0.670	8.76	6.16	0.00	146
MW-6S	21.24	6.22	0.511	7.38	10.19	0.00	175
MW-6D	20.00	6.12	0.401	8.38	1.14	2.80	-95

Location ID	SWL (feet)
Manchester-1S	2.55
Manchester-2S	3.56
Manchester-5S	4.84
Manchester-6S	4.76

Note(s):

- Appropriately preserved samples delivered to Alpha Analytical, Westborough, MA with the associated Chain of Custody documentation.
- Static Water Levels were measured from top of PVC Riser unless indicated otherwise.
- Measurements listed above indicate final stabilized field analytical results.
- Samples collected for dissolved metals analysis were field filtered to 0.45 micron.
- MS-2 was dry - no samples/measurments collected.

Reviewed By: BL 2-7-08

S E A

S E A CONSULTANTS INC.
Scientists/Engineers/Architects

CLIENT: Town of [illegible]	JOB NO: 2006[illegible].02A	PAGE: 1 of 1
PROJECT: [illegible]	COMPTD BY: MSL	DATE: 2/28/08
DETAIL:	OK'D BY:	DATE:

Piezometer measurements Feb. 28, 2008

Note: 1) These measurements were taken by S.E.A.
2) Piezometer PZ-2 was inaccessible because of thin ice.

Location	Water Level (inside)	Water Level (outside)
PZ-1	1.74'	1.88'
PZ-2	N.A.	N.A.
PZ-3	1.58'	1.75'

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-1

LOCATION: Hamilton LF

SAMPLING CREW: RP/MG | DATE: 1/23/08 | SAMPLE TIME: 1440

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geopump

DEPTH TO WATER: 4.58 (FT) | WELL DEPTH: 17.18 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1400	4.61	200 ml/min	1	7.39	0.126	6.32	108	1.72	230	
1405	4.61	"	2	8.02	0.153	6.15	6	0.56	71.8	
1410	4.61	"	3	8.01	0.157	6.21	-8	0.51	49.1	
1415	4.61	"	4	7.97	0.161	6.23	-22	0.48	34.2	
1420	4.61	"	5	7.93	0.162	6.17	-27	0.44	24.7	
1425	4.61	"	6	7.97	0.159	6.29	-34	0.43	16.2	
1430	4.61	"	7	8.01	0.163	6.27	-36	0.42	12.1	
1435	4.61	"	8	7.96	0.164	6.25	-37	0.40	11.5	
1440	4.61	"	9	7.95	0.163	6.26	-37	0.40	11.9	

FINAL FIELD DATA

pH: 6.26 (S.U.) | DO: 0.40 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.163 (mS/cm) | TURBIDITY: 11.9 (NTU)

TEMPERATURE: 7.95 (°C) | ORP: -37 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear / no odor

WEATHER CONDITIONS: clear / 30's

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: MW-2

LOCATION: Hamilton LF

SAMPLING CREW: RB/MG DATE: 1/23/08 SAMPLE TIME: —

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing PURGING DEVICE:

DEPTH TO WATER: dry (FT) WELL DEPTH: 10.05 (FT) Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS

FINAL FIELD DATA

pH: (S.U.) DO: (mg/L) COMMENTS:

SPECIFIC CONDUCTANCE: (mS/cm) TURBIDITY: (NTU)

TEMPERATURE: (°C) ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: (Y) N Concrete pad present: Y (N) Cap on riser: (Y) N

Protective Casing Locked: (Y) N Standing Water: Y (N) Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-5

LOCATION: Hamilton LF

SAMPLING CREW: RD/MG | DATE: 1/23/08 | SAMPLE TIME: 1550

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geotech

DEPTH TO WATER: 6.55 (FT) | WELL DEPTH: 17.36 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1530	6.62	200ml/min	1	4.56	0.083	5.81	144	10.92	0.18	
1535	6.63	"	2	4.70	0.082	5.68	159	11.20	0.00	
1540	6.63	"	3	4.68	0.085	5.61	166	10.66	0.00	
1545	6.63	"	4	4.67	0.082	5.53	171	10.59	0.00	
1550	6.63	"	5	4.67	0.083	5.51	169	10.60	0.00	

FINAL FIELD DATA

pH: 5.51 (S.U.) | DO: 10.60 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.083 (mS/cm) | TURBIDITY: 0.00 (NTU)

TEMPERATURE: 4.67 (°C) | ORP: 169 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/no odor

WEATHER CONDITIONS: clear/30's

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-45

LOCATION: Hamilton LF

SAMPLING CREW: RD/MG | DATE: 1/23/08 | SAMPLE TIME: 1225

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geotech

DEPTH TO WATER: 5.95 (FT) | WELL DEPTH: 14.92 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1200	5.98	200ml/min	1	6.59	0.071	5.66	176	6.33	10.3	
1205	5.98	"	2	6.68	0.073	5.34	191	5.86	5.12	
1210	5.98	"	3	6.63	0.075	5.17	246	5.08	3.84	
1215	5.98	"	4	6.69	0.077	5.19	252	4.92	1.54	
1220	5.98	"	5	6.62	0.077	5.15	261	4.86	1.69	
1225	5.98	"	6	6.63	0.077	~~4.85~~ 5.19	259	4.85	1.75	

FINAL FIELD DATA

pH: 5.19 (S.U.) | DO: 4.85 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.077 (mS/cm) | TURBIDITY: 1.75 (NTU)

TEMPERATURE: 6.63 (°C) | ORP: 259 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/ no odor

WEATHER CONDITIONS: clear/30's

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants PROJECT#: WELL ID: MW-4D

LOCATION: Hamilton LF

SAMPLING CREW: M. Gould DATE: 1/23 SAMPLE TIME: 1240

PURGING DATA

REFERENCE POINT: PVC Steel Casing PURGING DEVICE:

DEPTH TO WATER: 6.13 (FT) WELL DEPTH: 39.51 (FT) Well Diameter: MW

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1150	6.18	200		7.73	0.543	6.09	-30	7.61	20	
1155	6.28	200		8.29	0.544	6.02	-27	1.02	31	
1200	6.28	200		7.95	0.549	6.01	-31	0.77	29.4	
1205	6.28	200		7.84	0.571	5.99	-42	0.57	38	
1210	6.28	200		7.79	0.578	6.00	-50	0.46	1.0	
1215	6.28	200		7.79	0.578	6.01	-54	0.37	52.1	
1220	6.28	200		7.96	0.578	6.04	-56	0.33	45	
1225	6.28	200		7.91	0.577	6.01	-56	0.28	32	
1230	6.28	200		7.95	0.574	6.01	-57	0.26	27.1	
1235	6.21	200		7.95	0.573	6.03	-58	0.24	29.1	
1240	6.21	200		7.87	0.572	6.05	-58	0.24	28.2	

FINAL FIELD DATA

pH: (S.U.) DO: (mg/L) COMMENTS:

SPECIFIC CONDUCTANCE: (mS/cm) TURBIDITY: (NTU)

TEMPERATURE: (°C) ORP: (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE:

WEATHER CONDITIONS:

WELL CONDITION DATA

Protective Casing Present: Y N Concrete pad present: Y N Cap on riser: Y N

Protective Casing Locked: Y N Standing Water: Y N Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-5

LOCATION: Hamilton LF

SAMPLING CREW: RP/MG | DATE: 1/23/08 | SAMPLE TIME: 1000

PURGING DATA

REFERENCE POINT: (PVC) Steel Casing | PURGING DEVICE: Geopump

DEPTH TO WATER: 11.82 (FT) | WELL DEPTH: 20.11 (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
0930	11.84	200ml/min	1	8.63	0.701	6.06	210	6.11	0.0	
0935	11.84	"	2	8.05	0.685	6.10	198	6.53	0.0	
0940	11.84	"	3	8.84	0.675	6.11	177	6.57	0.0	
0945	11.84	"	4	8.85	0.670	6.17	149	6.04	0.0	
0950	11.84	"	5	8.71	0.663	6.19	147	6.17	0.0	
0955	11.84	"	6	8.80	0.671	6.17	150	6.11	0.0	
1000	11.84	"	7	8.76	0.670	6.18	146	6.16	0.0	

FINAL FIELD DATA

pH: 6.18 (S.U.) | DO: 6.16 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.670 (mS/cm) | TURBIDITY: 0.0 (NTU)

TEMPERATURE: 8.76 (°C) | ORP: 146 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/no odor

WEATHER CONDITIONS: clear / 30's

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: Y (N) | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE:

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: MW-6S

LOCATION: Hamilton LF

SAMPLING CREW: RB/MG | DATE: 1/23/08 | SAMPLE TIME: 1110

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE: Geopump

DEPTH TO WATER: 21.24' (FT) | WELL DEPTH: 30.00' (FT) | Well Diameter: 2"

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1045	21.26	200ml/min	1	6.83	0.482	6.41	134	10.33	0.25	
1050	21.26	//	2	7.50	0.466	6.24	146	10.14	0.00	
1055	21.26	//	3	7.60	0.463	6.22	166	9.98	0.00	
1100	21.26	//	4	7.32	0.515	6.22	173	10.21	0.00	
1105	21.26	//	5	7.41	0.512	6.21	174	10.16	0.00	
1110	21.26	//	6	7.38	0.511	6.22	175	10.19	0.00	

FINAL FIELD DATA

pH: 6.22 (S.U.) | DO: 10.19 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.511 (mS/cm) | TURBIDITY: 0.0 (NTU)

TEMPERATURE: 7.38 (°C) | ORP: 175 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear/no odor

WEATHER CONDITIONS: clear/20's

WELL CONDITION DATA

Protective Casing Present: (Y) N | Concrete pad present: Y (N) | Cap on riser: (Y) N

Protective Casing Locked: (Y) N | Standing Water: Y (N) | Visible Heaving: Y (N)

Physical Damage: Y (N)

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

EST - LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME: SEA Consultants | PROJECT#: | WELL ID: 6D

LOCATION: Hamilton LF

SAMPLING CREW: M. Gould | DATE: 1/23 | SAMPLE TIME: 1050

PURGING DATA

REFERENCE POINT: PVC Steel Casing | PURGING DEVICE:

DEPTH TO WATER: 20.00 (FT) | WELL DEPTH: 46.83 (FT) | Well Diameter: 2.0

CLOCK TIME	STATIC DEPTH (FT)	PURGE RATE (ML)	CUM. VOLUME PURGED (L)	TEMP (°C)	SP. COND (mS/cm)	pH (s.u.)	ORP/Eh (MV)	DO (mg/L)	Turb (NTU)	COMMENTS
1010	20.03	200		7.69	0.382	5.55	-36	2.49	5.92	
1015	20.05	200		7.92	0.379	5.74	-65	1.92	4.99	
1020	20.08	200		8.18	0.381	6.06	-95	1.64	6.16	
1025	20.08	200		8.23	0.382	6.06	-97	1.49	5.17	
1030	20.08	200		8.17	0.384	6.11	-98	1.36	4.20	
1035	20.08	200		8.26	0.388	6.12	-97	1.30	3.54	
1040	20.08	200		8.14	0.391	6.12	-96	1.21	3.49	
1045	20.08	200		8.18	0.396	6.12	-96	1.16	2.73	
1050	20.08	200		8.38	0.401	6.12	-95	1.14	2.80	

FINAL FIELD DATA

pH: 6.12 (S.U.) | DO: 1.14 (mg/L) | COMMENTS:

SPECIFIC CONDUCTANCE: 0.401 (mS/cm) | TURBIDITY: 2.80 (NTU)

TEMPERATURE: 8.38 (°C) | ORP: -95 (MV)

ODOR AND PHYSICAL APPEARANCE OF SAMPLE: clear, no odor

WEATHER CONDITIONS: Sunny, 30's

WELL CONDITION DATA

Protective Casing Present: Y N | Concrete pad present: Y N | Cap on riser: Y N

Protective Casing Locked: Y N | Standing Water: Y N | Visible Heaving: Y N

Physical Damage: Y N

If yes, Describe:

SAMPLER'S SIGNATURE: [signature]

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax: 781-455-8336

EST environmental & industrial

last revised by AV 1/2008

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	215 First Street, Suite 320, Cambridge, MA 02142
Contact	Michael Looney
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Michael Looney Phone: 617-498-4682
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice: SEA

Lab to Invoice: SEA

Lab Report to: Michael.Looney@seacon.com

Billing Reference: 7800-Q#-xx

Q#4980612-07R

Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type: Glass	Plastic	VOA's	Preservation: HCL	NaOH	HNO3	H2So4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	Comments:
MW-1	1/23/08	1440	2		5	2	X	X	X	X			X	X	X	X	EST to complete Temp, pH
MW-3		1550	2		5	2	X	X	X	X			X	X	X	X	
MW-4S		1225	2		5	2	X	X	X	X			X	X	X	X	
MW-4D		1240	2		5	2	X	X	X	X			X	X	X	X	
MW-5		1000	2		5	2	X	X	X	X			X	X	X	X	
MW-6S		1110	2		5	2	X	X	X	X			X	X	X	X	
MW-6D		1050	2		5	2	X	X	X	X			X	X	X	X	
~~MW-2~~			2		5	2	X	X	X	X			X	X	X	X	

Turnaround Information

- [ ] Std. 10 Day Turnaround
- [ ] 7 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *RUSH*

Approved By: _____

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca. Na (FIELD FILTERED!!!!) - (1) 500ml Plastic field filtered w/HNO3

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen), sulfate, COD, total cyanide - (1) 250ml Plastic, No Preserve & No Headspace (1) 1L Plastic No Preserve, (1) 250mL P w/ H2SO4, (1) 250ml Plastic w/NaoH

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes) - (2) 40ml Vials w/HCl

Sample Custody must be documented below each time samples change possesion, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
[signature]	1/23/08 1600	1 John Buonch	1/24 11:15
2		2	
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

ALPHA
WOODS HOLE LABS

ANALYTICAL REPORT

Lab Number:	L0801067
Client:	SEA Consultants 215 First Street Suite 320 Cambridge, MA 02142
ATTN:	Michael Looney
Project Name:	HAMILTON SANITARY LANDFILL
Project Number:	Not Specified
Report Date:	01/31/08

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (200305), NJ (MA935), RI (LAO00065), ME (2006012), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Alpha Sample ID	Client ID	Sample Location
L0801067-01	MW-1	HAMILTON, MA
L0801067-02	MW-3	HAMILTON, MA
L0801067-03	MW-4S	HAMILTON, MA
L0801067-04	MW-4D	HAMILTON, MA
L0801067-05	MW-5	HAMILTON, MA
L0801067-06	MW-6S	HAMILTON, MA
L0801067-07	MW-6D	HAMILTON, MA

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	N/A

A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

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WOODS HOLE LABS

Case Narrative

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

Sample Receipt

The samples were Field Filtered for Dissolved Metals only.

Volatile Organics

In reference to question E:

The WG309835-1/2 LCSD % recovery for 2-Butanone, a difficult analyte, is above method acceptance criteria.

Metals

In reference to question F:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

Non-MCP Related Narratives

Sample Receipt

Headspace was noted in some of the sample containers submitted for Alkalinity.

Nitrate

L0801067-01, -04, and -07 have elevated detection limits due to the dilutions required by the matrix of the samples.

Sulfate

L0801067-06 and -07 have elevated detection limits due to the dilution required by the elevated concentration of Sulfate in the sample.

Alkalinity

A laboratory duplicate could not be reported because the duplicated sample required re-analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kris L. Weston

Title: Technical Director/Representative

Date: 01/31/08

ALPHA

ORGANICS

VOLATILES

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-01	Date Collected:	01/23/08 14:40
Client ID:	MW-1	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 14:34		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

ALPHA

SAMPLE RESULTS

Lab ID: L0801067-01 Date Collected: 01/23/08 14:40
Client ID: MW-1 Date Received: 01/24/08
Sample Location: HAMILTON, MA Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0801067-01
Client ID: MW-1
Sample Location: HAMILTON, MA

Date Collected: 01/23/08 14:40
Date Received: 01/24/08
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	107		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-02	Date Collected:	01/23/08 15:50
Client ID:	MW-3	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 15:12		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0801067-02
Client ID: MW-3
Sample Location: HAMILTON, MA

Date Collected: 01/23/08 15:50
Date Received: 01/24/08
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-02	Date Collected:	01/23/08 15:50
Client ID:	MW-3	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-03	Date Collected:	01/23/08 12:25
Client ID:	MW-4S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 15:51		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-03	Date Collected:	01/23/08 12:25
Client ID:	MW-4S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-03	Date Collected:	01/23/08 12:25
Client ID:	MW-4S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	107		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-04	Date Collected:	01/23/08 12:40
Client ID:	MW-4D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 16:29		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	4.0		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	0.64		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0801067-04
Client ID: MW-4D
Sample Location: HAMILTON, MA

Date Collected: 01/23/08 12:40
Date Received: 01/24/08
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	2.7		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	28		ug/l	2.5	1

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-04	Date Collected:	01/23/08 12:40
Client ID:	MW-4D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	109		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-05	Date Collected:	01/23/08 10:00
Client ID:	MW-5	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 17:07		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0801067-05 Date Collected: 01/23/08 10:00
Client ID: MW-5 Date Received: 01/24/08
Sample Location: HAMILTON, MA Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	2.8		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-05	Date Collected:	01/23/08 10:00
Client ID:	MW-5	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	106		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-06	Date Collected:	01/23/08 11:10
Client ID:	MW-6S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 17:45		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	ND		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID: L0801067-06
Client ID: MW-6S
Sample Location: HAMILTON, MA

Date Collected: 01/23/08 11:10
Date Received: 01/24/08
Field Prep: Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	ND		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-06	Date Collected:	01/23/08 11:10
Client ID:	MW-6S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	106		70-130

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-07	Date Collected:	01/23/08 10:50
Client ID:	MW-6D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		
Anaytical Method:	60,8260B		
Analytical Date:	01/25/08 18:23		
Analyst:	GK		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	0.75	1
Chloroform	ND		ug/l	0.75	1
Carbon tetrachloride	ND		ug/l	0.50	1
1,2-Dichloropropane	ND		ug/l	1.8	1
Dibromochloromethane	ND		ug/l	0.50	1
1,1,2-Trichloroethane	ND		ug/l	0.75	1
Tetrachloroethene	ND		ug/l	0.50	1
Chlorobenzene	0.73		ug/l	0.50	1
Trichlorofluoromethane	ND		ug/l	2.5	1
1,2-Dichloroethane	ND		ug/l	0.50	1
1,1,1-Trichloroethane	ND		ug/l	0.50	1
Bromodichloromethane	ND		ug/l	0.50	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	1
1,1-Dichloropropene	ND		ug/l	2.5	1
Bromoform	ND		ug/l	2.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	1
Benzene	ND		ug/l	0.50	1
Toluene	ND		ug/l	0.75	1
Ethylbenzene	ND		ug/l	0.50	1
Chloromethane	ND		ug/l	2.5	1
Bromomethane	ND		ug/l	1.0	1
Vinyl chloride	ND		ug/l	1.0	1
Chloroethane	ND		ug/l	1.0	1
1,1-Dichloroethene	ND		ug/l	0.50	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	1
Trichloroethene	ND		ug/l	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.5	1
1,3-Dichlorobenzene	ND		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-07	Date Collected:	01/23/08 10:50
Client ID:	MW-6D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
1,4-Dichlorobenzene	ND		ug/l	2.5	1
Methyl tert butyl ether	1.8		ug/l	1.0	1
p/m-Xylene	ND		ug/l	1.0	1
o-Xylene	ND		ug/l	1.0	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	1
Dibromomethane	ND		ug/l	5.0	1
1,2,3-Trichloropropane	ND		ug/l	5.0	1
Styrene	ND		ug/l	1.0	1
Dichlorodifluoromethane	ND		ug/l	5.0	1
Acetone	ND		ug/l	5.0	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	5.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1
2-Hexanone	ND		ug/l	5.0	1
Bromochloromethane	ND		ug/l	2.5	1
Tetrahydrofuran	ND		ug/l	10	1
2,2-Dichloropropane	ND		ug/l	2.5	1
1,2-Dibromoethane	ND		ug/l	2.0	1
1,3-Dichloropropane	ND		ug/l	2.5	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	1
Bromobenzene	ND		ug/l	2.5	1
n-Butylbenzene	ND		ug/l	0.50	1
sec-Butylbenzene	ND		ug/l	0.50	1
tert-Butylbenzene	ND		ug/l	2.5	1
o-Chlorotoluene	ND		ug/l	2.5	1
p-Chlorotoluene	ND		ug/l	2.5	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	1
Hexachlorobutadiene	ND		ug/l	0.60	1
Isopropylbenzene	ND		ug/l	0.50	1
p-Isopropyltoluene	ND		ug/l	0.50	1
Naphthalene	ND		ug/l	2.5	1
n-Propylbenzene	ND		ug/l	0.50	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	1
Ethyl ether	2.7		ug/l	2.5	1

SAMPLE RESULTS

Lab ID:	L0801067-07	Date Collected:	01/23/08 10:50
Client ID:	MW-6D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by MCP 8260B					
Isopropyl Ether	ND		ug/l	2.0	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	1
1,4-Dioxane	ND		ug/l	250	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0801067

Project Number: Not Specified **Report Date:** 01/31/08

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 01/25/08 13:18
Analyst: GK

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-07 Batch: WG309835-3				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	0.75
Chloroform	ND		ug/l	0.75
Carbon tetrachloride	ND		ug/l	0.50
1,2-Dichloropropane	ND		ug/l	1.8
Dibromochloromethane	ND		ug/l	0.50
1,1,2-Trichloroethane	ND		ug/l	0.75
Tetrachloroethene	ND		ug/l	0.50
Chlorobenzene	ND		ug/l	0.50
Trichlorofluoromethane	ND		ug/l	2.5
1,2-Dichloroethane	ND		ug/l	0.50
1,1,1-Trichloroethane	ND		ug/l	0.50
Bromodichloromethane	ND		ug/l	0.50
trans-1,3-Dichloropropene	ND		ug/l	0.50
cis-1,3-Dichloropropene	ND		ug/l	0.50
1,1-Dichloropropene	ND		ug/l	2.5
Bromoform	ND		ug/l	2.0
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50
Benzene	ND		ug/l	0.50
Toluene	ND		ug/l	0.75
Ethylbenzene	ND		ug/l	0.50
Chloromethane	ND		ug/l	2.5
Bromomethane	ND		ug/l	1.0
Vinyl chloride	ND		ug/l	1.0
Chloroethane	ND		ug/l	1.0
1,1-Dichloroethene	ND		ug/l	0.50
trans-1,2-Dichloroethene	ND		ug/l	0.75
Trichloroethene	ND		ug/l	0.50
1,2-Dichlorobenzene	ND		ug/l	2.5
1,3-Dichlorobenzene	ND		ug/l	2.5
1,4-Dichlorobenzene	ND		ug/l	2.5

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 01/25/08 13:18
Analyst: GK

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-07 Batch: WG309835-3				
Methyl tert butyl ether	ND		ug/l	1.0
p/m-Xylene	ND		ug/l	1.0
o-Xylene	ND		ug/l	1.0
cis-1,2-Dichloroethene	ND		ug/l	0.50
Dibromomethane	ND		ug/l	5.0
1,2,3-Trichloropropane	ND		ug/l	5.0
Styrene	ND		ug/l	1.0
Dichlorodifluoromethane	ND		ug/l	5.0
Acetone	ND		ug/l	5.0
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	5.0
4-Methyl-2-pentanone	ND		ug/l	5.0
2-Hexanone	ND		ug/l	5.0
Bromochloromethane	ND		ug/l	2.5
Tetrahydrofuran	ND		ug/l	10
2,2-Dichloropropane	ND		ug/l	2.5
1,2-Dibromoethane	ND		ug/l	2.0
1,3-Dichloropropane	ND		ug/l	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50
Bromobenzene	ND		ug/l	2.5
n-Butylbenzene	ND		ug/l	0.50
sec-Butylbenzene	ND		ug/l	0.50
tert-Butylbenzene	ND		ug/l	2.5
o-Chlorotoluene	ND		ug/l	2.5
p-Chlorotoluene	ND		ug/l	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5
Hexachlorobutadiene	ND		ug/l	0.60
Isopropylbenzene	ND		ug/l	0.50
p-Isopropyltoluene	ND		ug/l	0.50
Naphthalene	ND		ug/l	2.5
n-Propylbenzene	ND		ug/l	0.50

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

Method Blank Analysis
Batch Quality Control

Analytical Method: 60,8260B
Analytical Date: 01/25/08 13:18
Analyst: GK

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by MCP 8260B for sample(s): 01-07 Batch: WG309835-3				
1,2,3-Trichlorobenzene	ND		ug/l	2.5
1,2,4-Trichlorobenzene	ND		ug/l	2.5
1,3,5-Trimethylbenzene	ND		ug/l	2.5
1,2,4-Trimethylbenzene	ND		ug/l	2.5
Ethyl ether	ND		ug/l	2.5
Isopropyl Ether	ND		ug/l	2.0
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0
1,4-Dioxane	ND		ug/l	250

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	108		70-130

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG309835-1 WG309835-2					
Methylene chloride	104	112	70-130	7	25
1,1-Dichloroethane	104	109	70-130	5	25
Chloroform	109	110	70-130	1	25
Carbon tetrachloride	85	88	70-130	3	25
1,2-Dichloropropane	102	106	70-130	4	25
Dibromochloromethane	86	92	70-130	7	25
1,1,2-Trichloroethane	97	102	70-130	5	25
Tetrachloroethene	96	97	70-130	1	25
Chlorobenzene	96	101	70-130	5	25
Trichlorofluoromethane	116	124	70-130	7	25
1,2-Dichloroethane	110	117	70-130	6	25
1,1,1-Trichloroethane	100	106	70-130	6	25
Bromodichloromethane	100	105	70-130	5	25
trans-1,3-Dichloropropene	88	89	70-130	1	25
cis-1,3-Dichloropropene	97	100	70-130	3	25
1,1-Dichloropropene	104	108	70-130	4	25
Bromoform	82	85	70-130	4	50
1,1,2,2-Tetrachloroethane	101	106	70-130	5	25
Benzene	100	106	70-130	6	25
Toluene	94	97	70-130	3	25
Ethylbenzene	96	100	70-130	4	25

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG309835-1 WG309835-2					
Chloromethane	95	99	70-130	4	50
Bromomethane	99	100	70-130	1	50
Vinyl chloride	100	104	70-130	4	25
Chloroethane	103	104	70-130	1	25
1,1-Dichloroethene	104	109	70-130	5	25
trans-1,2-Dichloroethene	102	109	70-130	7	25
Trichloroethene	96	103	70-130	7	25
1,2-Dichlorobenzene	99	102	70-130	3	25
1,3-Dichlorobenzene	96	100	70-130	4	25
1,4-Dichlorobenzene	99	101	70-130	2	25
Methyl tert butyl ether	107	122	70-130	13	25
p/m-Xylene	98	100	70-130	2	25
o-Xylene	95	102	70-130	7	25
cis-1,2-Dichloroethene	104	105	70-130	1	25
Dibromomethane	110	114	70-130	4	25
1,2,3-Trichloropropane	104	115	70-130	10	25
Styrene	98	104	70-130	6	25
Dichlorodifluoromethane	93	99	70-130	6	50
Acetone	127	124	70-130	2	50
Carbon disulfide	98	107	70-130	9	25
2-Butanone	117	133	70-130	13	50

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG309835-1 WG309835-2					
4-Methyl-2-pentanone	110	124	70-130	12	50
2-Hexanone	103	110	70-130	7	50
Bromochloromethane	109	113	70-130	4	25
Tetrahydrofuran	107	128	70-130	18	25
2,2-Dichloropropane	94	98	70-130	4	50
1,2-Dibromoethane	96	101	70-130	5	25
1,3-Dichloropropane	99	103	70-130	4	25
1,1,1,2-Tetrachloroethane	84	89	70-130	6	25
Bromobenzene	98	101	70-130	3	25
n-Butylbenzene	99	101	70-130	2	25
sec-Butylbenzene	98	101	70-130	3	25
tert-Butylbenzene	95	98	70-130	3	25
o-Chlorotoluene	94	98	70-130	4	25
p-Chlorotoluene	97	100	70-130	3	25
1,2-Dibromo-3-chloropropane	88	94	70-130	7	50
Hexachlorobutadiene	96	102	70-130	6	25
Isopropylbenzene	111	115	70-130	4	25
p-Isopropyltoluene	102	104	70-130	2	25
Naphthalene	98	105	70-130	7	25
n-Propylbenzene	98	102	70-130	4	25
1,2,3-Trichlorobenzene	103	106	70-130	3	25

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Volatile Organics by MCP 8260B Associated sample(s): 01-07 Batch: WG309835-1 WG309835-2					
1,2,4-Trichlorobenzene	102	103	70-130	1	25
1,3,5-Trimethylbenzene	96	98	70-130	2	25
1,2,4-Trimethylbenzene	96	100	70-130	4	25
Ethyl ether	99	117	70-130	17	25
Isopropyl Ether	94	107	70-130	13	25
Ethyl-Tert-Butyl-Ether	98	112	70-130	13	25
Tertiary-Amyl Methyl Ether	94	108	70-130	14	25
1,4-Dioxane	110	113	70-130	3	50

Surrogate	LCS %Recovery	Qualifier	LCSD %Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		108		70-130
Toluene-d8	96		95		70-130
4-Bromofluorobenzene	100		99		70-130
Dibromofluoromethane	107		108		70-130

METALS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-01	Date Collected:	01/23/08 14:40
Client ID:	MW-1	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.018		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Calcium, Dissolved	7.7		mg/l	0.10	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Iron, Dissolved	12		mg/l	0.05	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.759		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:41	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Sodium, Dissolved	12		mg/l	2.0	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	01/28/08 17:00	01/29/08 15:48	EPA 3005A	60,6010B	MG

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-02	Date Collected:	01/23/08 15:50
Client ID:	MW-3	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.032		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Calcium, Dissolved	6.2		mg/l	0.10	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Iron, Dissolved	ND		mg/l	0.05	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.069		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:43	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Sodium, Dissolved	6.1		mg/l	2.0	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	01/28/08 17:00	01/29/08 15:53	EPA 3005A	60,6010B	MG

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-03	Date Collected:	01/23/08 12:25
Client ID:	MW-4S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.030		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Calcium, Dissolved	3.6		mg/l	0.10	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Iron, Dissolved	0.05		mg/l	0.05	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Manganese, Dissolved	0.156		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:45	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Sodium, Dissolved	8.0		mg/l	2.0	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	01/28/08 17:00	01/29/08 16:06	EPA 3005A	60,6010B	MG

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-04	Date Collected:	01/23/08 12:40
Client ID:	MW-4D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/31/08 10:31	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.050		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Calcium, Dissolved	44		mg/l	0.10	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Iron, Dissolved	4.6		mg/l	0.05	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Manganese, Dissolved	9.11		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:46	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Sodium, Dissolved	33		mg/l	2.0	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG
Zinc, Dissolved	0.067		mg/l	0.050	1	01/28/08 17:00	01/29/08 16:09	EPA 3005A	60,6010B	MG

ALPHA WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-05	Date Collected:	01/23/08 10:00
Client ID:	MW-5	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.183		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Calcium, Dissolved	74		mg/l	0.10	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Iron, Dissolved	0.30		mg/l	0.05	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Manganese, Dissolved	2.80		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:48	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Sodium, Dissolved	36		mg/l	2.0	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	01/28/08 17:00	01/29/08 16:12	EPA 3005A	60,6010B	MG

ALPHA

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-06	Date Collected:	01/23/08 11:10
Client ID:	MW-6S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.051		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Calcium, Dissolved	49		mg/l	0.10	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Iron, Dissolved	ND		mg/l	0.05	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Manganese, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:50	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Sodium, Dissolved	35		mg/l	2.0	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG
Zinc, Dissolved	0.103		mg/l	0.050	1	01/28/08 17:00	01/29/08 16:15	EPA 3005A	60,6010B	MG

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-07	Date Collected:	01/23/08 10:50
Client ID:	MW-6D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series										
Arsenic, Dissolved	ND		mg/l	0.005	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Barium, Dissolved	0.038		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Cadmium, Dissolved	ND		mg/l	0.004	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Calcium, Dissolved	30		mg/l	0.10	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Chromium, Dissolved	ND		mg/l	0.01	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Copper, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Iron, Dissolved	9.9		mg/l	0.05	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Lead, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Manganese, Dissolved	5.44		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Mercury, Dissolved	ND		mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:52	EPA 7470A	64,7470A	RC
Selenium, Dissolved	ND		mg/l	0.010	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Silver, Dissolved	ND		mg/l	0.007	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Sodium, Dissolved	20		mg/l	2.0	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG
Zinc, Dissolved	ND		mg/l	0.050	1	01/28/08 17:00	01/29/08 16:17	EPA 3005A	60,6010B	MG

ALPHA
WOODS HOLE LABS

Project Name: HAMILTON SANITARY LANDFILL **Lab Number:** L0801067

Project Number: Not Specified **Report Date:** 01/31/08

Method Blank Analysis
Batch Quality Control

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-07 Batch: WG309883-1								
Mercury, Dissolved	ND	mg/l	0.0002	1	01/28/08 16:00	01/29/08 14:36	64,7470A	RC

Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals by MCP 6000/7000 series for sample(s): 01-07 Batch: WG309898-1								
Arsenic, Dissolved	ND	mg/l	0.005	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Barium, Dissolved	ND	mg/l	0.010	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Cadmium, Dissolved	ND	mg/l	0.004	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Calcium, Dissolved	ND	mg/l	0.10	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Chromium, Dissolved	ND	mg/l	0.01	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Copper, Dissolved	ND	mg/l	0.010	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Iron, Dissolved	ND	mg/l	0.05	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Lead, Dissolved	ND	mg/l	0.010	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Manganese, Dissolved	ND	mg/l	0.010	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Selenium, Dissolved	ND	mg/l	0.010	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Silver, Dissolved	ND	mg/l	0.007	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Sodium, Dissolved	ND	mg/l	2.0	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG
Zinc, Dissolved	ND	mg/l	0.050	1	01/28/08 17:00	01/29/08 15:31	60,6010B	MG

Prep Information

Digestion Method: EPA 3005A

ALPHA WOODS HOLE LABS

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-07 Batch: WG309883-2 WG309883-3					
Mercury, Dissolved	104	103	80-120	1	20
Dissolved Metals by MCP 6000/7000 series Associated sample(s): 01-07 Batch: WG309898-2 WG309898-3					
Arsenic, Dissolved	112	113	80-120	1	20
Barium, Dissolved	95	94	80-120	1	20
Cadmium, Dissolved	113	111	80-120	2	20
Calcium, Dissolved	98	98	80-120	0	20
Chromium, Dissolved	100	100	80-120	0	20
Copper, Dissolved	100	99	80-120	1	20
Iron, Dissolved	110	110	80-120	0	20
Lead, Dissolved	104	104	80-120	0	20
Manganese, Dissolved	99	99	80-120	0	20
Selenium, Dissolved	114	111	80-120	3	20
Silver, Dissolved	106	103	80-120	3	20
Sodium, Dissolved	100	110	80-120	10	20
Zinc, Dissolved	105	105	80-120	0	20

INORGANICS
&
MISCELLANEOUS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-01	Date Collected:	01/23/08 14:40
Client ID:	MW-1	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:32	64,9014	DD
General Chemistry									
Alkalinity, Total	29		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	100		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	20		mg/l	1.0	1	-	01/30/08 21:53	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.50	5	-	01/24/08 23:44	30,4500NO3-F	DD
Sulfate	21		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	23		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-02	Date Collected:	01/23/08 15:50
Client ID:	MW-3	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:33	64,9014	DD
General Chemistry									
Alkalinity, Total	13		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	52		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	8.8		mg/l	1.0	1	-	01/30/08 21:54	1,9251	DD
Nitrogen, Nitrate	0.52		mg/l	0.10	1	-	01/24/08 22:25	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LAB

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-03	Date Collected:	01/23/08 12:25
Client ID:	MW-4S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:55	64,9014	DD
General Chemistry									
Alkalinity, Total	3.7		mg CaCO3/L	2.0	1	-	01/28/08 21:39	30,2320B	LR
Solids, Total Dissolved	36		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	10		mg/l	1.0	1	-	01/30/08 21:56	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	01/24/08 22:26	30,4500NO3-F	DD
Sulfate	11		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-04	Date Collected:	01/23/08 12:40
Client ID:	MW-4D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:35	64,9014	DD
General Chemistry									
Alkalinity, Total	240		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	310		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	34		mg/l	1.0	1	-	01/30/08 21:56	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.50	5	-	01/24/08 23:46	30,4500NO3-F	DD
Sulfate	10		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	23		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-05	Date Collected:	01/23/08 10:00
Client ID:	MW-5	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:35	64,9014	DD
General Chemistry									
Alkalinity, Total	210		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	370		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	67		mg/l	1.0	1	-	01/30/08 21:57	1,9251	DD
Nitrogen, Nitrate	7.5		mg/l	0.10	1	-	01/24/08 22:27	30,4500NO3-F	DD
Sulfate	ND		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-06	Date Collected:	01/23/08 11:10
Client ID:	MW-6S	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:56	64,9014	DD
General Chemistry									
Alkalinity, Total	75		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	280		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	57		mg/l	1.0	1	-	01/30/08 21:57	1,9251	DD
Nitrogen, Nitrate	0.87		mg/l	0.10	1	-	01/24/08 22:30	30,4500NO3-F	DD
Sulfate	60		mg/l	50	5	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name:	HAMILTON SANITARY LANDFILL	**Lab Number:**	L0801067
Project Number:	Not Specified	**Report Date:**	01/31/08

SAMPLE RESULTS

Lab ID:	L0801067-07	Date Collected:	01/23/08 10:50
Client ID:	MW-6D	Date Received:	01/24/08
Sample Location:	HAMILTON, MA	Field Prep:	Field Filtered
Matrix:	Water		

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Cyanide by MCP 9014									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:37	64,9014	DD
General Chemistry									
Alkalinity, Total	96		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
Solids, Total Dissolved	230		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
Chloride	40		mg/l	1.0	1	-	01/30/08 21:58	1,9251	DD
Nitrogen, Nitrate	ND		mg/l	0.50	5	-	01/24/08 23:47	30,4500NO3-F	DD
Sulfate	44		mg/l	20	2	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW

ALPHA
WOODS HOLE LABS

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry for sample(s): 01-07 Batch: WG309619-2									
Nitrogen, Nitrate	ND		mg/l	0.10	1	-	01/24/08 22:14	30,4500NO3-F	DD
General Chemistry for sample(s): 01-02,04-07 Batch: WG309737-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	01/25/08 10:25	30,2320B	AT
General Chemistry for sample(s): 01-07 Batch: WG309820-1									
Chemical Oxygen Demand	ND		mg/l	20	1	-	01/28/08 10:00	30,5220D	DW
General Chemistry for sample(s): 03 Batch: WG309938-1									
Alkalinity, Total	ND		mg CaCO3/L	2.0	1	-	01/28/08 21:39	30,2320B	LR
General Chemistry for sample(s): 01-07 Batch: WG309945-1									
Solids, Total Dissolved	ND		mg/l	10	1	-	01/29/08 10:45	30,2540C	DW
General Chemistry for sample(s): 01-07 Batch: WG310021-2									
Sulfate	ND		mg/l	10	1	01/29/08 14:10	01/29/08 14:10	1,9038	DD
Total Cyanide by MCP 9014 for sample(s): 01-07 Batch: WG310046-2									
Cyanide, Total	ND		mg/l	0.005	1	01/29/08 18:40	01/30/08 00:02	64,9014	DD
General Chemistry for sample(s): 01-07 Batch: WG310160-2									
Chloride	ND		mg/l	1.0	1	-	01/30/08 21:41	1,9251	DD

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-07 Batch: WG309619-1					
Nitrogen, Nitrate	100	-	90-110	-	
Associated sample(s): 01-02,04-07 Batch: WG309737-2					
Alkalinity, Total	105	-	80-115	-	4
Associated sample(s): 01-07 Batch: WG309820-2					
Chemical Oxygen Demand	97	-	93-106	-	
Associated sample(s): 03 Batch: WG309938-2					
Alkalinity, Total	104	-	80-115	-	4
Associated sample(s): 01-07 Batch: WG309945-2					
Solids, Total Dissolved	87	-	72-121	-	
Associated sample(s): 01-07 Batch: WG310021-1					
Sulfate	105	-	84-108	-	
Total Cyanide by MCP 9014 Associated sample(s): 01-07 Batch: WG310046-1 WG310046-3					
Cyanide, Total	99	101	80-120	2	20

ALPHA

Lab Control Sample Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-07 Batch: WG310160-1					
Chloride	100	-	84-110	-	

ALPHA

Matrix Spike Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Associated sample(s): 01-07 QC Batch ID: WG309619-3 QC Sample: L0801067-02 Client ID: MW-3									
Nitrogen, Nitrate	0.52	4	4.7	104	-	-	83-120	-	6
Associated sample(s): 01-02,04-07 QC Batch ID: WG309737-3 QC Sample: L0801067-02 Client ID: MW-3									
Alkalinity, Total	13	500	520	100	-	-	86-116	-	4
Associated sample(s): 01-07 QC Batch ID: WG309820-3 QC Sample: L0801102-06 Client ID: MS Sample									
Chemical Oxygen Demand	39	238	290	105	-	-	84-120	-	12
Associated sample(s): 03 QC Batch ID: WG309938-4 QC Sample: L0801091-01 Client ID: MS Sample									
Alkalinity, Total	210	100	310	98	-	-	86-116	-	4
Associated sample(s): 01-07 QC Batch ID: WG310021-3 QC Sample: L0801076-03 Client ID: MS Sample									
Sulfate	ND	20	22	110	-	-	55-147	-	14
Associated sample(s): 01-07 QC Batch ID: WG310160-3 QC Sample: L0801067-06 Client ID: MW-6S									
Chloride	57	20	75	90	-	-	58-140	-	7

ALPHA WOODS HOLE LABS

Lab Duplicate Analysis
Batch Quality Control

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Associated sample(s): 01-07 QC Batch ID: WG309619-4 QC Sample: L0801076-02 Client ID: DUP Sample					
Nitrogen, Nitrate	1.3	1.3	mg/l	0	6
Associated sample(s): 01-07 QC Batch ID: WG309820-4 QC Sample: L0801102-06 Client ID: DUP Sample					
Chemical Oxygen Demand	39	41	mg/l	5	12
Associated sample(s): 03 QC Batch ID: WG309938-3 QC Sample: L0801102-06 Client ID: DUP Sample					
Alkalinity, Total	67	67	mg CaCO3/L	0	4
Associated sample(s): 01-07 QC Batch ID: WG309945-3 QC Sample: L0801067-01 Client ID: MW-1					
Solids, Total Dissolved	100	100	mg/l	0	11
Associated sample(s): 01-07 QC Batch ID: WG310021-4 QC Sample: L0801067-04 Client ID: MW-4D					
Sulfate	10	10	mg/l	0	14
Associated sample(s): 01-07 QC Batch ID: WG310160-4 QC Sample: L0801292-02 Client ID: DUP Sample					
Chloride	5.8	5.8	mg/l	0	7

Project Name: HAMILTON SANITARY LANDFILL
Project Number: Not Specified

Lab Number: L0801067
Report Date: 01/31/08

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A,B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0801067-01A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-01B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-01C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-01D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-01E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-01G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-01K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320
L0801067-02A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-02B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-02C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-02D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-02E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-02G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-02K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320
L0801067-03A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-03B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-03C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0801067-03D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-03E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-03G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-03K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320
L0801067-04A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-04B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-04C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-04D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-04E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-04G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-04K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320
L0801067-05A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-05B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-05C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-05D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-05E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-05G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-05K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0801067-06A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-06B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-06C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-06D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-06E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-06G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-06K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320
L0801067-07A	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-07B	Vial HCl preserved	A,B	N/A	2.5 C, 2.5 C	Y	Absent	MCP-8260-04
L0801067-07C	Plastic 250ml NaOH preserved	A,B	>12	2.5 C, 2.5 C	Y	Absent	MCP-TCN9014-04
L0801067-07D	Plastic 500ml H2SO4 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	COD-5220
L0801067-07E	Plastic 1000ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	CL-9251,NO3-4500,SO4-9038,TDS-2540
L0801067-07G	Plastic 500ml HNO3 preserved	A,B	<2	2.5 C, 2.5 C	Y	Absent	MCP-7470S,MCP-AG-6010S,MCP-AS-6010S,MCP-BA-6010S,MCP-CA-6010S,MCP-CD-6010S,MCP-CR-6010S,MCP-CU-6010S,MCP-FE-6010S,MCP-MN-6010S,MCP-NA-6010S,MCP-PB-6010S,MCP-SE-6010S,MCP-ZN-6010S
L0801067-07K	Plastic 250ml unpreserved	A,B	=7	2.5 C, 2.5 C	Y	Absent	ALK-T-2320

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.
LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD - Laboratory Control Sample Duplicate: Refer to LCS.
MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD - Matrix Spike Sample Duplicate: Refer to MS.
NA - Not Applicable.
NI - Not Ignitable.
NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
ND - Not detected at the reported detection limit for the sample.
RDL - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

The following data qualifiers have been identified for use under the CT DEP Reasonable Confidence Protocols.

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

J - Estimated value. The analyte was tentatively identified; the quantitation is an estimation. (Tentatively identified compounds only.)

Standard Qualifiers

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

60 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.

64 Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). August 2004.

LIMITATION OF LIABILITIES

Alpha Woods Hole Labs performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Woods Hole Labs be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

51 Fremont Street Needham, MA 02494 Tel: 781-455-0003, Fax 781-455-8336

ALPHA Job # L0801067

last revised by AV 1/2008

EST environmental & industrial

CHAIN OF CUSTODY RECORD

Laboratory: Alpha Analytical Laboratory

Client	SEA Consultants, Inc.
Address	215 First Street, Suite 320, Cambridge, MA 02142
Contact	Michael Looney
Phone #	617-497-7800 Fax: 617-498-4630
Project Name	Hamilton Sanitary Landfill
Address	Hamilton, MA
Contact	Michael Looney Phone: 617-498-4682
Location ID #	Fax:
Description	Low Flow Groundwater PO# Ref#: 2006054.05A

MATRIX

1. Wastewater
2. Groundwater
3. Drinking Water
4. Soil
5. Surface Water
6. Other _____

EST to Invoice:	SEA
Lab to Invoice:	SEA
Lab Report to:	Michael.Looney@seacon.com
Billing Reference:	7800-Q#-xx
	Q#4980612-07R

Feld ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles Type Glass	Plastic	VOA's	Preservation HCL	NaOH	HNO3	H2SO4	MEOH	Other	None	Dissolved Metals (1) Field Filtered	General Chemistry (2)	VOCs (3)	Comments:
MW-1	1/23/08	1440	2		5	2	X	X	X	X			X	X	X	X	EST to complete Temp, pH
MW-3		1550	2		5	2	X	X	X	X			X	X	X	X	
MW-4S		1225	2		5	2	X	X	X	X			X	X	X	X	
MW-4D		1240	2		5	2	X	X	X	X			X	X	X	X	
MW-5		1000	2		5	2	X	X	X	X			X	X	X	X	
MW-6S		1110	2		5	2	X	X	X	X			X	X	X	X	
MW-6D		1050	2		5	2	X	X	X	X			X	X	X	X	
~~MW-2~~			2		5	2	X	X	X	X			X	X	X	X	

Analytical Information

Turnaround Information

- ☐ Std. 10 Day Turnaround — Approved By:
- ☐ 7 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *RUSH*

QA/QC

SPECIAL QA/QC or DATA Requirements:

Reporting limits for the analyses must be below the Massachusetts Maximum Contaminant Levels (MMCLs) and/or the MCP GW-1 Standards (whichever is lower) laboratory reporting limits for SW samples must be below the Envtl Toxicity Values for Fresh Water

Additional Information

(1) Dissolved Metals: As, Ba, Cd, Cr, Cu, Fe, Pb, Hg, Mn, Se, Ag, Zn, Ca, Na (FIELD FILTERED!!!!) - (1) 500ml Plastic field filtered w/HNO3

(2) General Chemistry: alkalinity, total dissolved solids (TDS), chloride, nitrate (as nitrogen), sulfate, COD, total cyanide - (1) 250ml Plastic, No Preserve & No Headspace (1) 1L Plastic No Preserve, (1) 250mL P w/ H2SO4, (1) 250ml Plastic w/NaoH

(3) VOCs: Volatile organic compounds by EPA Method 8260 (including acetone, MEK, MIBK, xylenes) - (2) 40ml Vials w/HCl

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 [signature]	1/23/08 1600	1 John Branch	1/24 1115
2 John Branch	1/24 1230	2 [signature]	1/24 1230
3		3	

Seal # ☐ Preserve where applicable ☐ On Ice ☐ Temp.

APPENDIX H

Soil Gas Data Tables

PERIMETER SOIL GAS MONITORING
HAMILTON LANDFILL COMPREHENSIVE SITE ASSESSMENT
ROUND 1
JANUARY 22, 2007

LOCATION	RESULTS							
	TIME	PRESSURE (inches Hg)	CH_4 (%)	LEL (%)	CO_2 (%)	O_2 (%)	H2S (ppm)	PID (ppm)
Soil Probes								
SG-1	11:26	29.9	0.0	0	0.1	21.4	0.0	0.0
SG-2	11:30	29.9	0.0	0	0.1	21.4	0.0	0.0
SG-3	11:35	29.9	0.0	0	0.7	20.9	0.0	0.0
SG-4	11:41	29.9	0.0	0	1.3	20.5	0.0	0.0
SG-5	9:52	29.9	0.0	0	1.7	19.4	0.0	0.0
SG-6	9:56	29.9	0.0	0	1.7	19.8	0.0	0.0
SG-7	10:01	29.9	0.0	0	2.2	19.5	0.0	0.0
SG-8	10:04	29.9	0.0	0	1.2	20.4	0.0	0.0
SG-9	10:07	29.9	0.0	0	0.1	21.4	0.0	0.0
SG-10	10:14	29.9	0.0	0	3.0	19.4	0.0	0.0
SG-11	10:19	29.9	0.0	0	0.9	21.0	0.0	0.0
SG-12	10:27	29.9	0.0	0	0.3	21.4	0.0	0.0
SG-13	10:33	29.9	0.0	0	0.1	21.4	0.0	0.0
SG-14	10:37	29.9	0.0	0	0.2	21.4	0.0	0.0
SG-15	DREW WATER							
SG-16	10:47	29.9	0.0	0	0.2	21.4	0.0	0.0
SG-17	10:59	29.9	0.0	0	0.9	20.9	0.0	0.0
SG-18	11:03	29.9	0.0	0	1.1	20.8	0.0	0.0
SG-19	11:07	29.9	0.0	0	4.2	17.2	0.0	0.0
SG-20	11:14	29.9	0.0	0	0.5	21.2	0.0	0.0
SG-21	11:18	29.9	0.0	0	0.1	21.4	0.0	0.0
SG-22	DREW WATER							
SG-23	10:50	29.9	0.0	0	0.1	21.3	0.0	0.0
SG-24	10:54	29.9	0.0	0	0.3	20.1	0.0	0.0
Ambient	9:45	29.9	0.0	0	0.0	21.2	0.0	0.0

NOTES:

1. Weather: Overcast, 25° F, light wind. Last Precipitation: 0.04 inches on 1/19/2007
2. Ambient: Refers to a background air quality sampling collected on the landfill.
3. Equipment: Thermo 580B OVM PID calibration:100 ppm Isobutylene at response factor of 1.0
   Landtec Landfill Gas Monitor GEM 500, calibrated by Pine Environmental personnel.
   CH_4 50 ppm H2S 25 ppm
   CO_2 35 ppm CO 50 ppm
5. Bold and shaded indicate methane concentrations in excess of 25% LEL.
6. Monitoring performed by AJD and MSL

PERIMETER SOIL GAS MONITORING
HAMILTON LANDFILL COMPREHENSIVE SITE ASSESSMENT
ROUND 2
JULY 26, 2007

LOCATION	RESULTS							
	TIME	PRESSURE (inches Hg)	CH_4 (%)	LEL (%)	CO_2 (%)	O_2 (%)	H2S (ppm)	PID (ppm)
Soil Probes								
SG-1	12:35	30.1	0.0	0	0.9	19.5	0.0	0.0
SG-2	DREW WATER							
SG-3	12:30	30.1	0.0	0	0.4	19.9	0.0	0.0
SG-4	12:40	30.1	0.0	0	1.1	19.1	0.0	0.0
SG-5	13:45	30.1	0.0	0	1.0	19.3	0.0	0.0
SG-6	13:47	30.1	0.0	0	0.9	19.3	0.0	0.0
SG-7	13:50	30.1	0.0	0	1.3	18.8	0.0	0.0
SG-8	13:55	30.1	0.0	0	1.6	18.7	0.0	0.0
SG-9	13:58	30.1	0.0	0	1.2	19.0	0.0	0.0
SG-10	14:01	30.1	0.0	0	1.8	18.5	0.0	0.0
SG-11	14:05	30.1	0.0	0	2.0	18.4	0.0	0.0
SG-12	14:57	30.0	0.0	0	1.5	19.3	0.0	0.0
SG-13	14:48	30.0	0.0	0	0.3	20.3	0.0	0.0
SG-14	14:45	30.0	0.0	0	0.5	20.0	0.0	0.0
SG-15	14:40	30.0	0.0	0	2.2	16.9	0.0	0.0
SG-16	13:15	30.1	0.0	0	0.5	19.6	0.0	0.0
SG-17	13:05	30.1	0.0	0	1.1	19.2	0.0	0.0
SG-18	13:10	30.1	0.0	0	1.5	18.9	0.0	0.0
SG-19	12:55	30.1	0.0	0	4.1	16.6	0.0	0.0
SG-20	12:50	30.1	0.0	0	0.8	19.4	0.0	0.0
SG-21	12:45	30.1	0.0	0	1.0	19.5	0.0	0.0
SG-22	12:40	30.1	0.0	0	1.9	18.7	0.0	0.0
SG-23	13:30	30.1	0.0	0	1.0	18.9	0.0	0.0
SG-24	13:20	30.1	0.0	0	2.1	18.0	0.0	0.0
Ambient	12:20	30.1	0.0	0	0.0	20.1	0.0	0.0

NOTES:

1. Weather: Sunny, 85° F, light wind. Last Precipitation: 0.14 inches on 7/23/2007
2. Ambient: Refers to a background air quality sampling collected on the landfill.
3. Equipment: Thermo 580B OVM PID calibration:100 ppm Isobutylene at response factor of 1.0
   Landtec Landfill Gas Monitor GEM 2000+, calibrated by Pine Environmental personnel.
   CH_4 50 ppm H2S 25 ppm
   CO_2 35 ppm CO 50 ppm
5. Bold and shaded indicate methane concentrations in excess of 25% LEL.
6. Monitoring performed by MSL

PERIMETER SOIL GAS MONITORING
HAMILTON LANDFILL COMPREHENSIVE SITE ASSESSMENT
ROUND 3
OCTOBER 25, 2007

LOCATION	RESULTS							
	TIME	PRESSURE	CH_4	LEL	CO_2	O_2	H2S	PID
		(inches Hg)	(%)	(%)	(%)	(%)	(ppm)	(ppm)
Soil Probes								
SG-1	12:47	30.3	0.0	0.0	0.3	20.5	0.0	0.0
SG-2	12:40	30.3	0.0	0.0	3.2	18.4	0.0	0.0
SG-3	15:16	30.3	0.0	0.0	1.1	19.4	0.0	0.0
SG-4	15:11	30.3	0.0	0.0	2.0	18.8	0.0	0.0
SG-5	14:29	30.3	0.0	0.0	2.3	18.6	0.0	0.0
SG-6	14:34	30.3	0.0	0.0	2.1	18.9	0.0	0.0
SG-7	14:38	30.3	0.0	0.0	1.9	19.1	0.0	0.0
SG-8	14:44	30.3	0.0	0.0	2.7	18.7	0.0	0.0
SG-9	14:51	30.3	0.0	0.0	1.8	19.4	0.0	0.0
SG-10	14:58	30.3	0.0	0.0	2.5	18.9	0.0	0.0
SG-11	15:04	30.3	0.0	0.0	2.3	19.1	0.0	0.0
SG-12	14:18	30.3	0.0	0.0	1.9	19.4	0.0	0.0
SG-13	14:09	30.3	0.0	0.0	0.6	20.4	0.0	0.0
SG-14	14:03	30.3	0.0	0.0	1.9	18.7	0.0	0.0
SG-15	13:53	30.3	0.0	0.0	0.4	20.5	0.0	0.0
SG-16	13:24	30.3	0.0	0.0	0.6	20.5	0.0	0.0
SG-17	13:45	30.3	0.0	0.0	2.0	19.4	0.0	0.0
SG-18	13:18	30.3	0.0	0.0	1.7	19.3	0.0	0.0
SG-19	13:11	30.3	0.0	0.0	6.1	15.4	0.0	0.0
SG-20	13:04	30.3	0.0	0.0	0.2	20.7	0.0	0.0
SG-21	12:58	30.3	0.0	0.0	0.8	20.3	0.0	0.0
SG-22	12:53	30.3	0.0	0.0	1.1	19.9	0.0	0.0
SG-23	13:31	30.3	0.0	0.0	1.2	19.7	0.0	0.0
SG-24	13:36	30.3	0.0	0.0	0.2	20.7	0.0	0.0
Ambient	12:15	30.3	0.0	0.0	0.0	20.6	0.0	0.0

NOTES:

1. Weather: Cloudy, 65° F, light wind. Last Precipitation: 0.04 in. of rain on 10/24/07
2. Ambient: Refers to a background air quality sampling collected on the landfill.
3. Equipment: Thermo 580B OVM PID calibration: 100 ppm Isobutylene at response factor of 1.0
   Landtec Landfill Gas Monitor GEM 500, calibrated by U.S. Environmental personnel.
   CH_4 50 ppm H2S 25 ppm
   CO_2 35 ppm CO 50 ppm
5. Bold and shaded indicate methane concentrations in excess of 25% LEL.
6. Monitoring performed by MSL

PERIMETER SOIL GAS MONITORING
HAMILTON LANDFILL COMPREHENSIVE SITE ASSESSMENT
ROUND 4
JANUARY 29, 2008

LOCATION	RESULTS							
	TIME	PRESSURE	CH_4	LEL	CO_2	O_2	H2S	PID
		(inches Hg)	(%)	(%)	(%)	(%)	(ppm)	(ppm)
Soil Probes								
SG-1	10:03	29.9	0.0	0.0	0.0	19.7	0.0	0.0
SG-2	DREW WATER							
SG-3	9:50	29.9	0.0	0.0	0.7	19.2	0.0	0.0
SG-4	11:49	29.9	0.0	0.0	1.0	20.2	0.0	0.0
SG-5	11:44	29.9	0.0	0.0	1.1	19.3	0.0	0.0
SG-6	11:39	29.9	0.0	0.0	2.0	19.3	0.0	0.0
SG-7	11:34	29.9	0.0	0.0	2.6	18.7	0.0	0.0
SG-8	11:27	29.9	0.0	0.0	1.7	19.5	0.0	0.0
SG-9	11:23	29.9	0.0	0.0	1.5	20.0	0.0	0.0
SG-10	11:19	29.9	0.0	0.0	2.1	19.4	0.0	0.0
SG-11	11:15	29.9	0.0	0.0	0.5	20.1	0.0	0.0
SG-12	11:07	29.9	0.0	0.0	0.9	19.8	0.0	0.0
SG-13	10:59	29.9	0.0	0.0	0.3	20.0	0.0	0.0
SG-14	10:55	29.9	0.0	0.0	0.4	20.0	0.0	0.0
SG-15	DREW WATER							
SG-16	10:42	29.9	0.0	0.0	0.2	20.2	0.0	0.0
SG-17	10:35	29.9	0.0	0.0	0.7	20.0	0.0	0.0
SG-18	10:27	29.9	0.0	0.0	0.9	19.7	0.0	0.0
SG-19	10:20	29.9	0.0	0.0	3.0	18.8	0.0	0.0
SG-20	10:15	29.9	0.0	0.0	0.1	19.9	0.0	0.0
SG-21	10:10	29.9	0.0	0.0	0.4	19.2	0.0	0.0
SG-22	DREW WATER							
SG-23	10:45	29.9	0.0	0.0	0.5	20.0	0.0	0.0
SG-24	10:40	29.9	0.0	0.0	0.1	20.2	0.0	0.0
Ambient	9:35	29.9	0.0	0.0	0.0	19.9	0.0	0.0

NOTES:

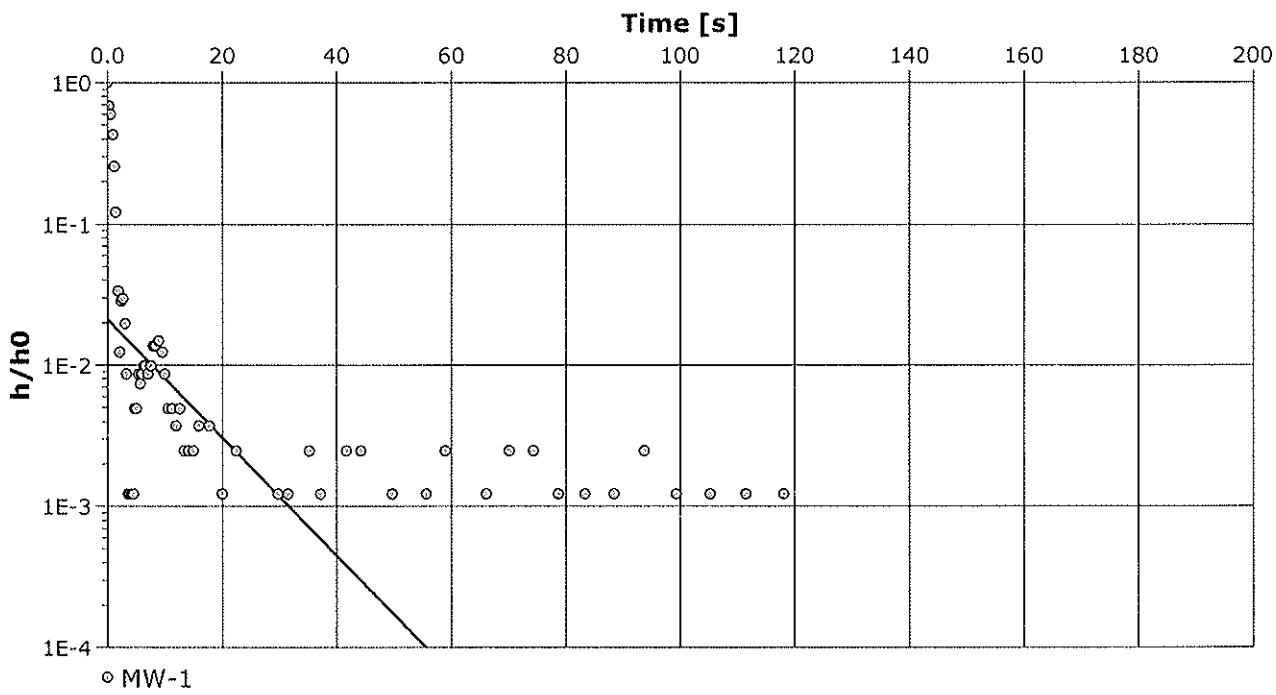
1. Weather: Sunny, 35° F, light wind. Last Precipitation: 0.07 in. on 1/27/08
2. Ambient: Refers to a background air quality sampling collected on the landfill.
3. Equipment: Mini-Rae PID, calibrated by Pine Environmental personnel; 100 ppm Isobutylene at response factor of 1.0
   Landtec Landfill Gas Monitor GEM 2000+, calibrated by Pine Environmental personnel.
   CH_4 50 ppm H2S 25 ppm
   CO_2 35 ppm CO 50 ppm
5. Bold and shaded indicate methane concentrations in excess of 25% LEL.
6. Monitoring performed by MSL

APPENDIX I

Slug Test Data

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report** Project: Hamilton Landfill CSA Number: 2006054.03 Client: Town of Hamilton

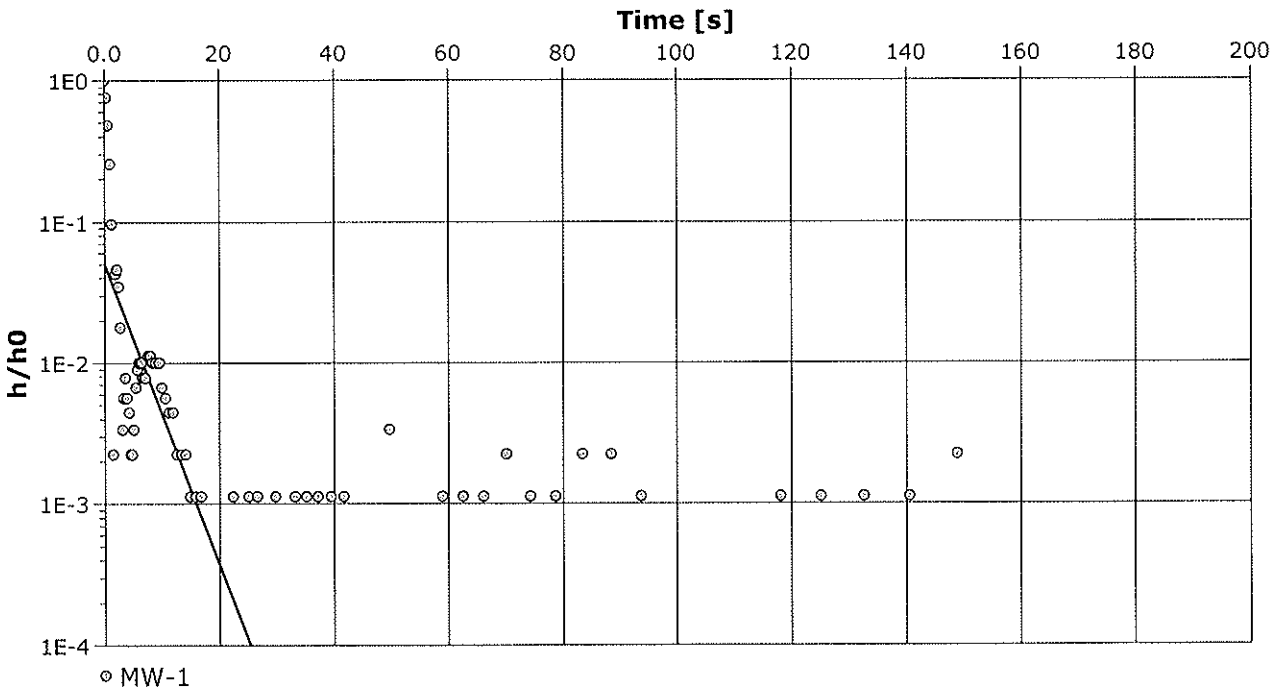
Location: Hamilton MA	Slug Test: mw-1 trial 2	Test Well: MW-1
Test conducted by: KNR / KL		Test date: 1/22/2007
Analysis performed by:	mw1 trial2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-1	9.60×10^{0}	

SEA Consultants Inc 485 Massachusetts Ave Cambridge MA 02139	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw-1 trial3	Test Well: MW-1
Test conducted by: KNR		Test date: 1/22/2007
Analysis performed by: KNR	mw1 trial 3 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

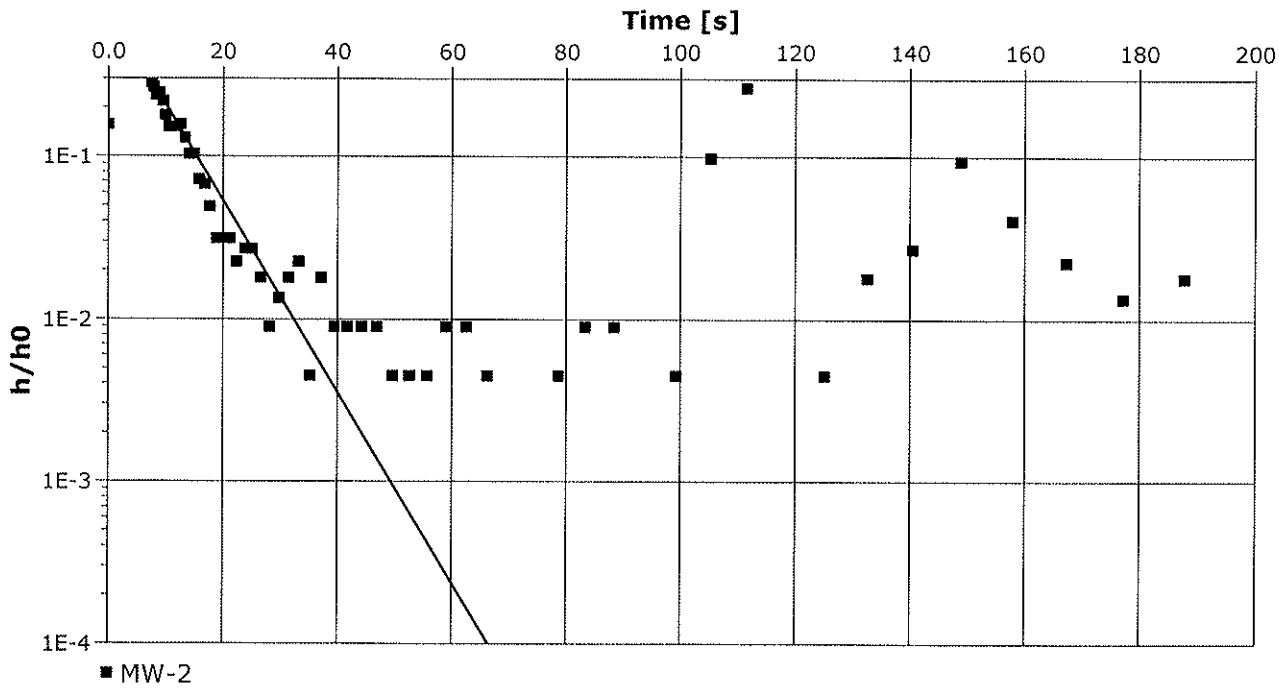


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-1	2.45×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw-2 trial 1	Test Well: MW-2
Test conducted by: KNR / KL		Test date: 1/22/2007
Analysis performed by: KNR	mw2 trial 1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

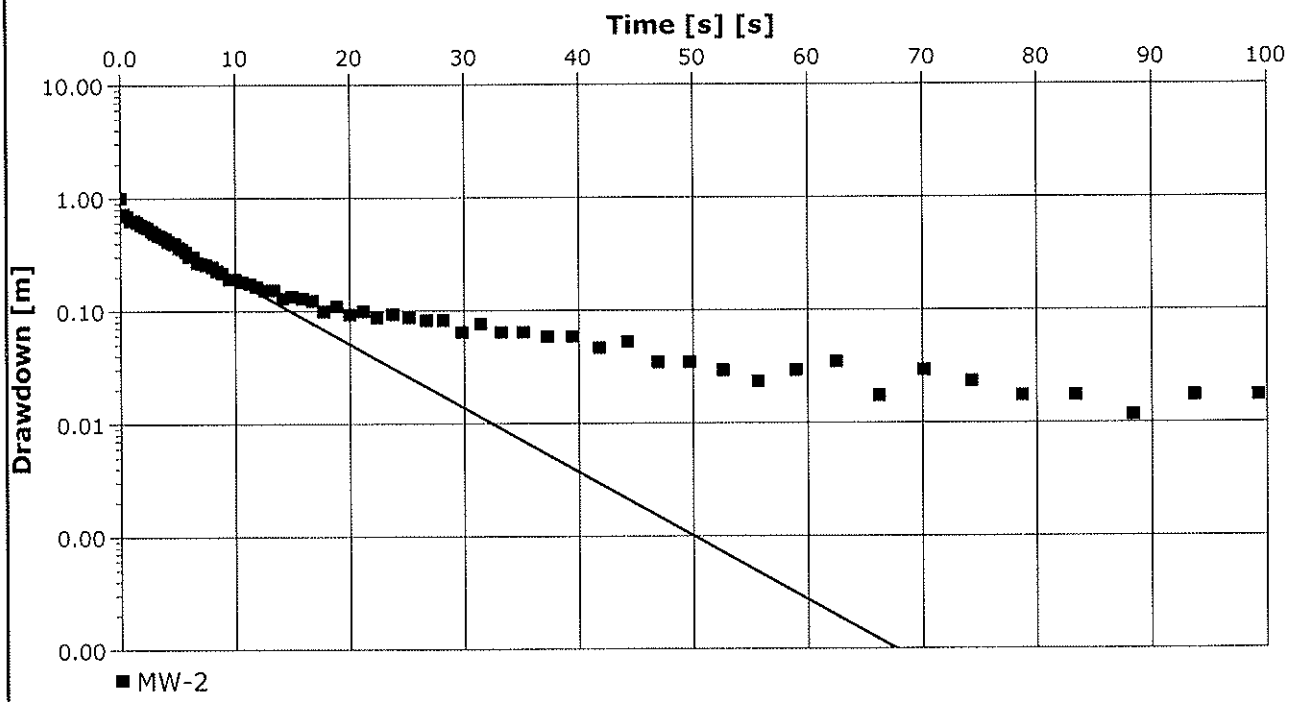


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-2	1.60×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw-2 trial 2	Test Well: MW-2
Test conducted by: KNR/KL		Test date: 1/22/2007
Analysis performed by: KNR	mw2 trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

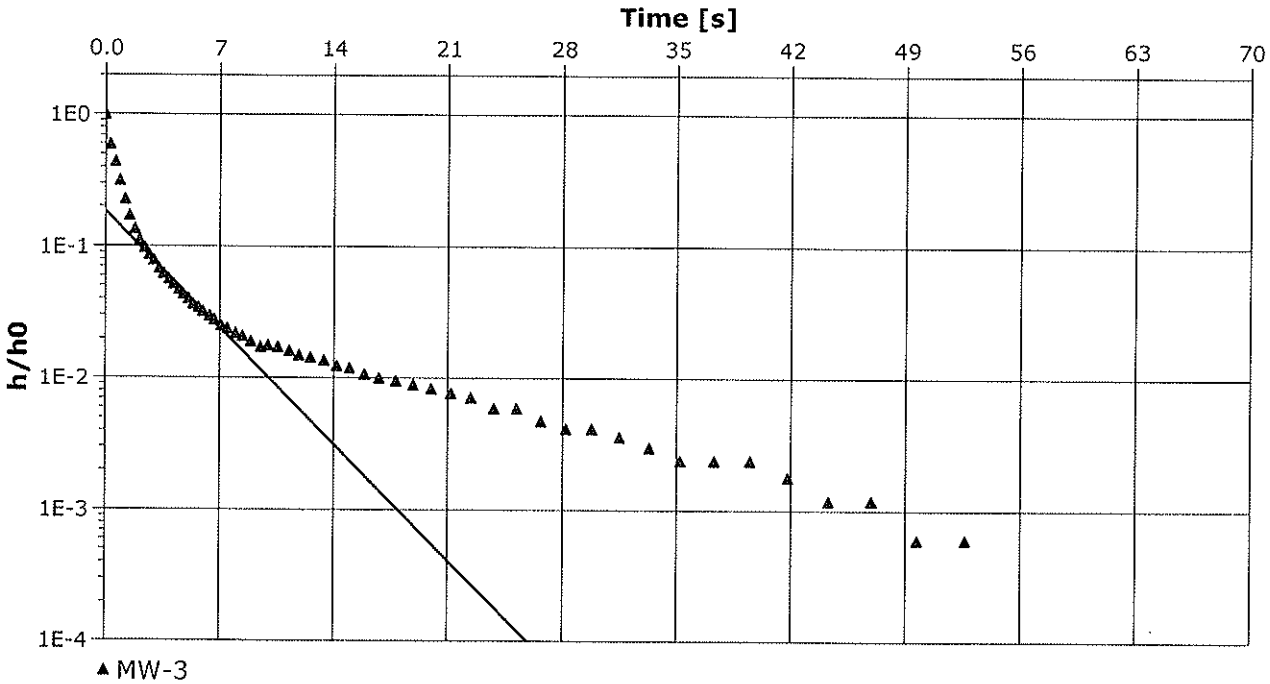


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-2	1.55×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw-3 trial 1	Test Well: MW-3
Test conducted by: KNR/KL		Test date: 2/7/2007
Analysis performed by: KNR	mw 3 trial 1 Hv	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

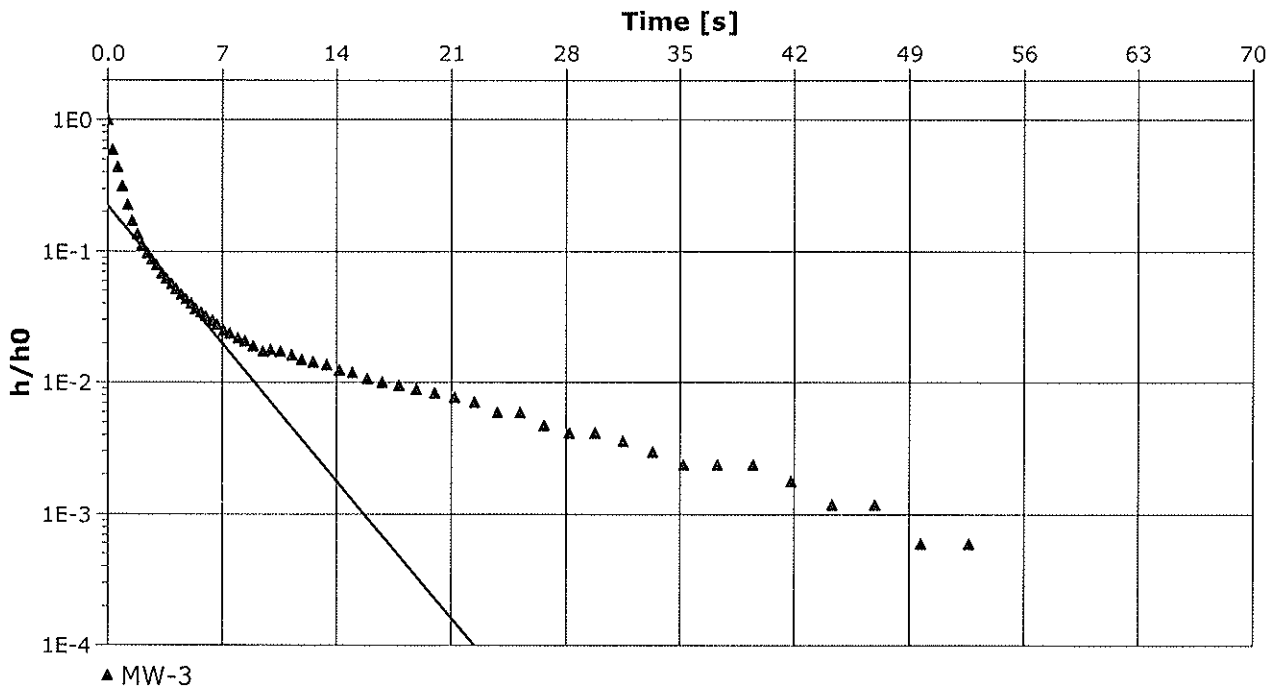


Calculation after Hvorslev

Observation well	K [ft/d]	
MW-3	4.20×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw-3 trial 1	Test Well: MW-3
Test conducted by: KNR/KL		Test date: 2/7/2007
Analysis performed by: KNR	mw3 trial 1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

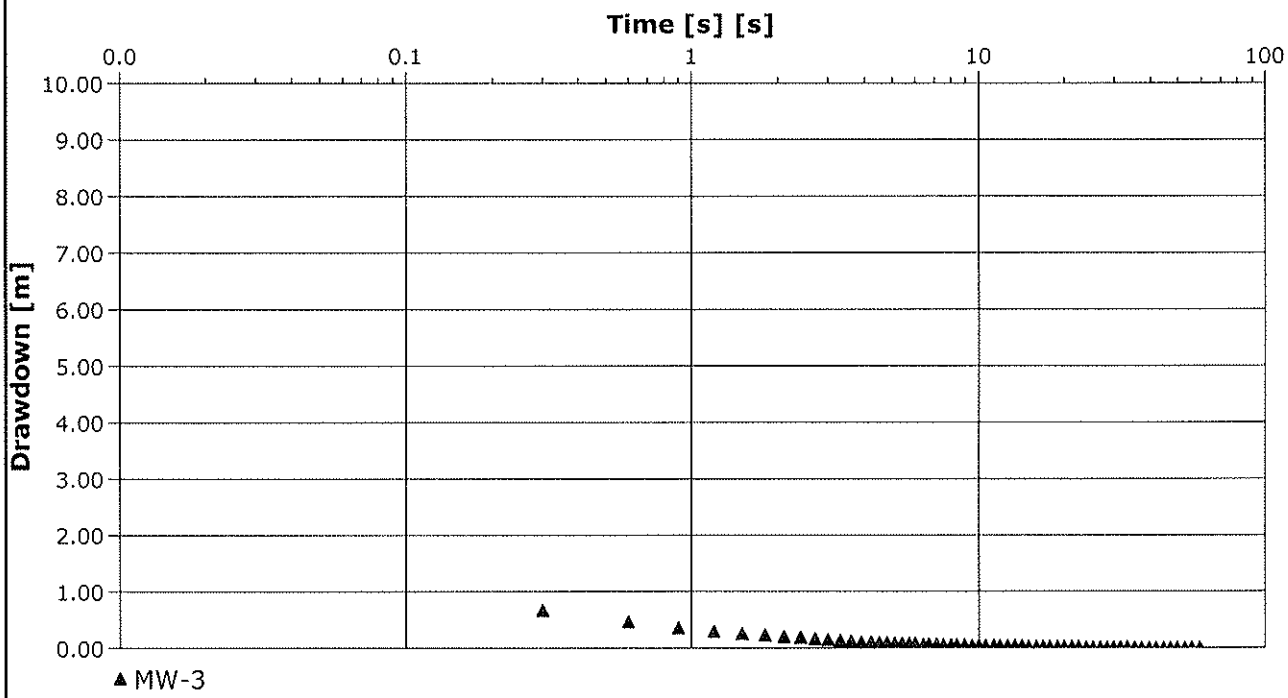


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-3	3.30×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report** Project: Hamilton Landfill CSA Number: 2006054.03 Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw3 trial 2	Test Well: MW-3
Test conducted by: KNR/KL		Test date: 1/22/2007
Analysis performed by: KNR	mw3 trial 2 Hv	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

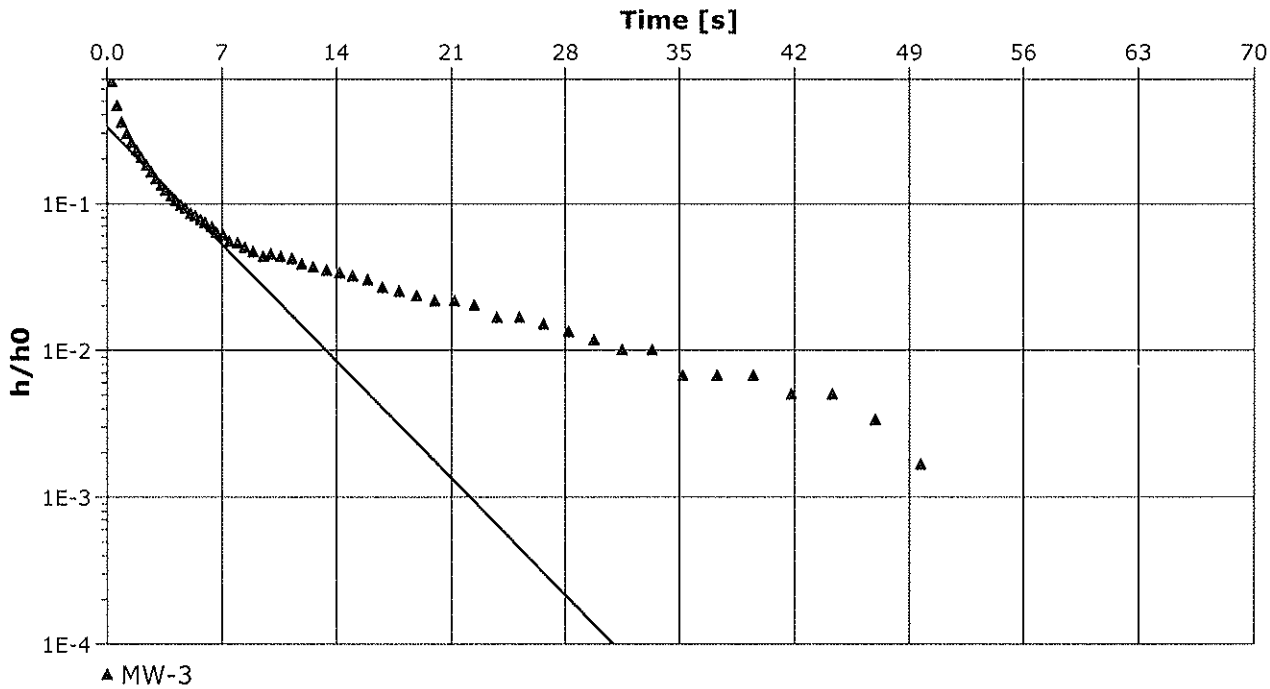


Calculation after Hvorslev

Observation well	K [ft/d]	
MW-3	3.03×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw3 trial 2	Test Well: MW-3
Test conducted by: KNR/KL		Test date: 1/22/2007
Analysis performed by: KNR	mw3 trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

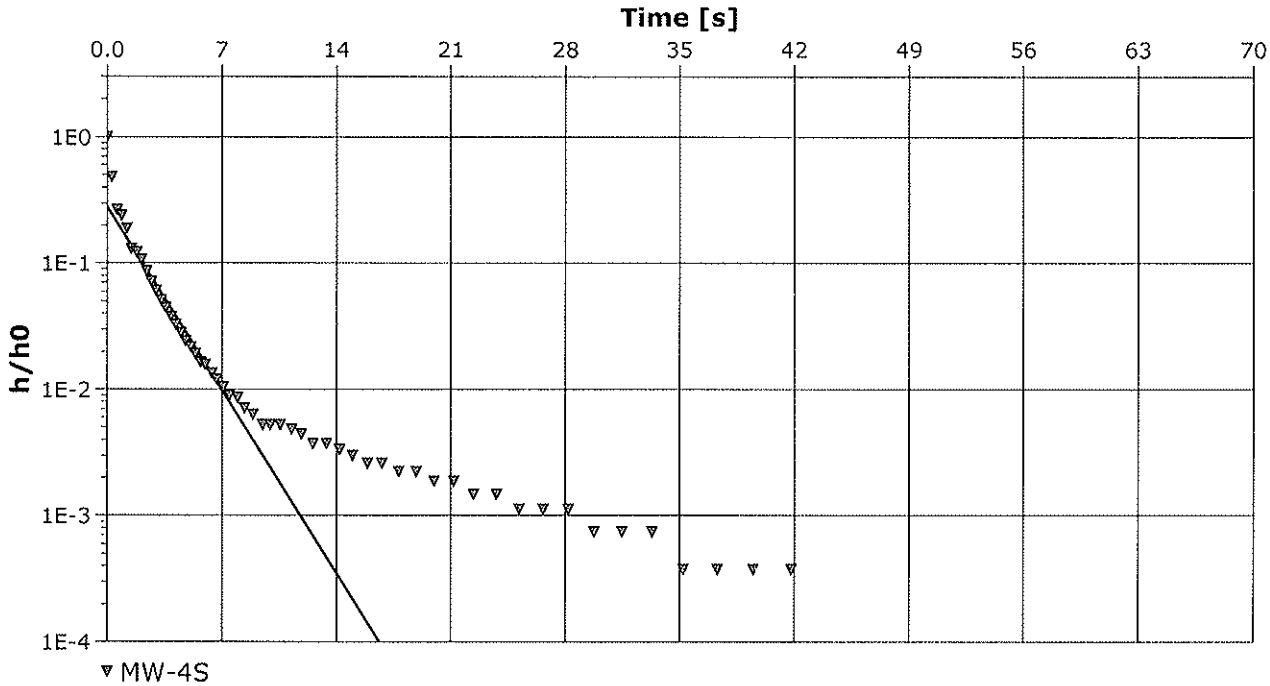


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-3	2.51×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report** Project: Hamilton Landfill CSA Number: 2006054.03 Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw4s trial 1	Test Well: MW-4S
Test conducted by: KNR/KL		Test date: 1/22/2007
Analysis performed by: knr	mw-4s trial 1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

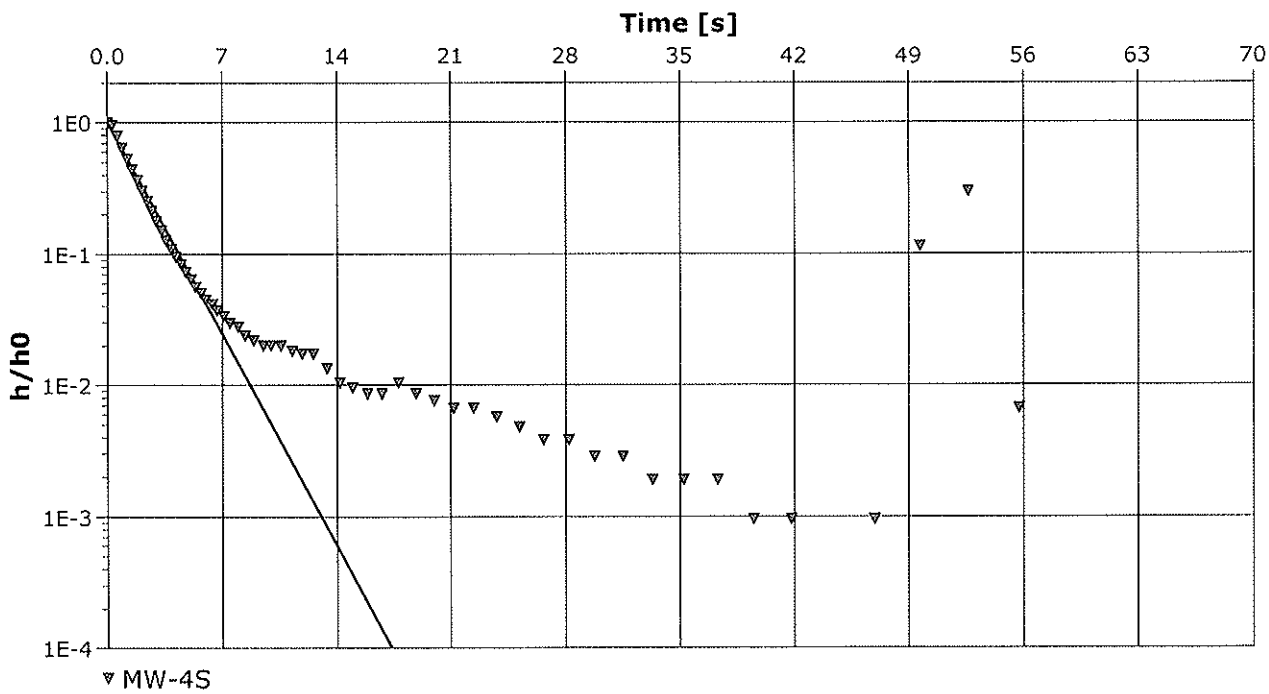


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-4S	4.50×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw4s trial 2	Test Well: MW-4S
Test conducted by: KNR / KL		Test date: 1/22/2007
Analysis performed by:	mw4s trial 2 B+R	Date: 2/16/2007
Aquifer Thickness: 40.00 ft		

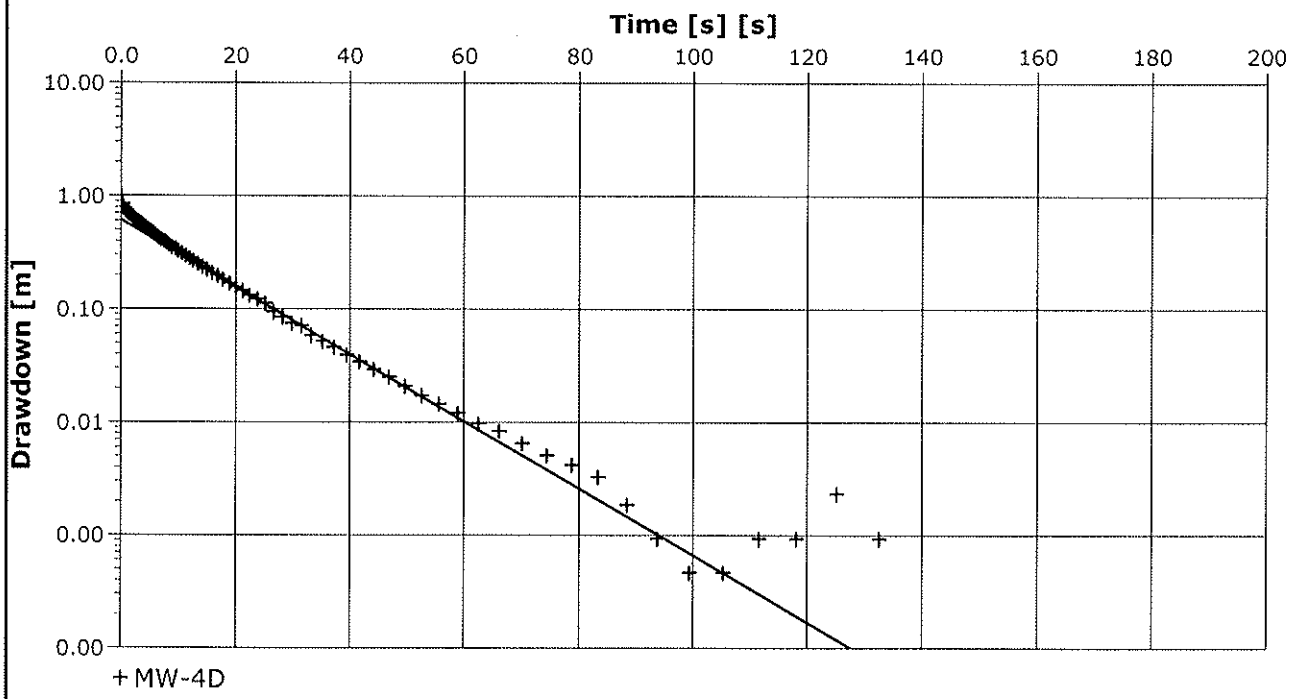


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-4S	5.00×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

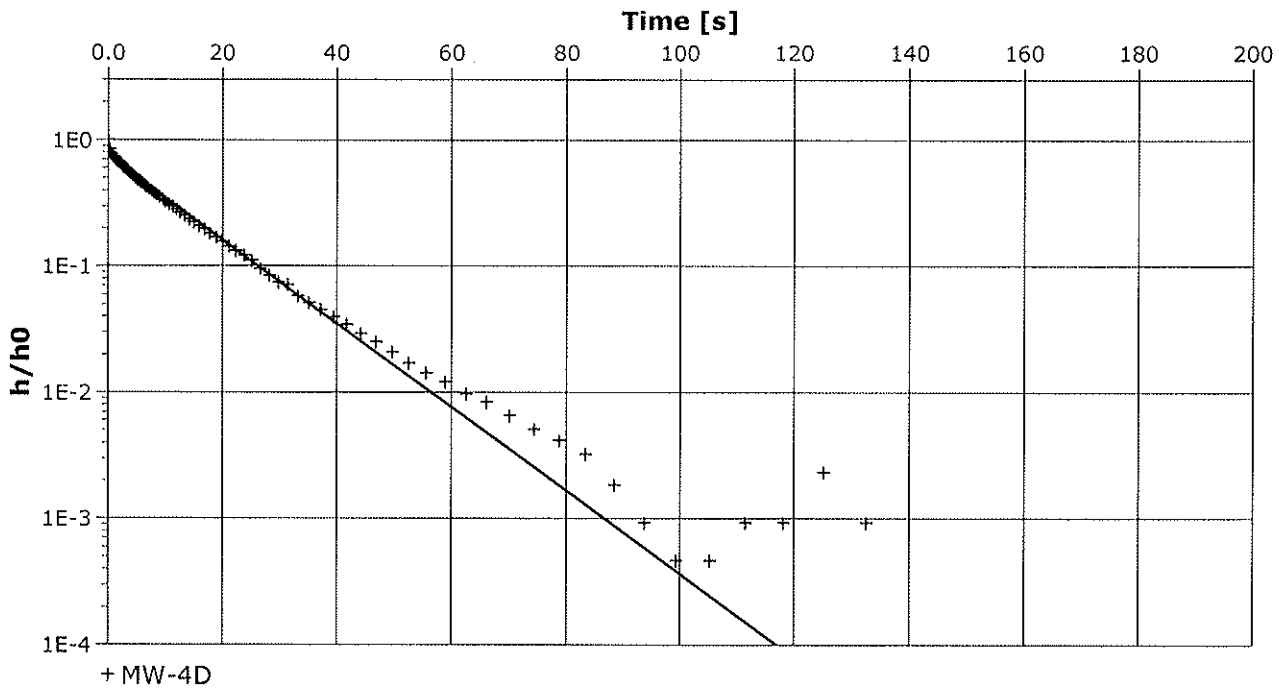
Location: Hamilton MA	Slug Test: mw4d trial 1	Test Well: MW-4D
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: KNR	mw4d trial 1 Hv	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Hvorslev		
Observation well	K [ft/d]	
MW-4D	9.88×10^{0}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw4d trial 1	Test Well: MW-4D
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: knr	mw4d trial 1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

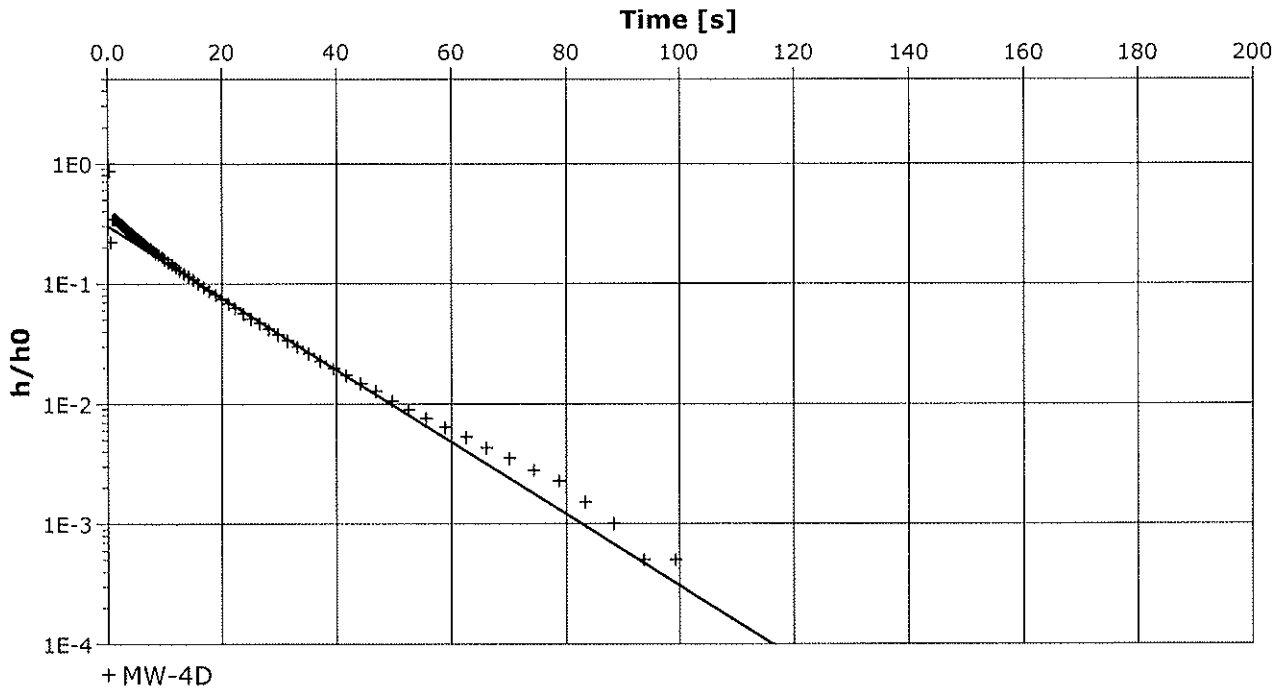


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-4D	8.50×10^{0}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

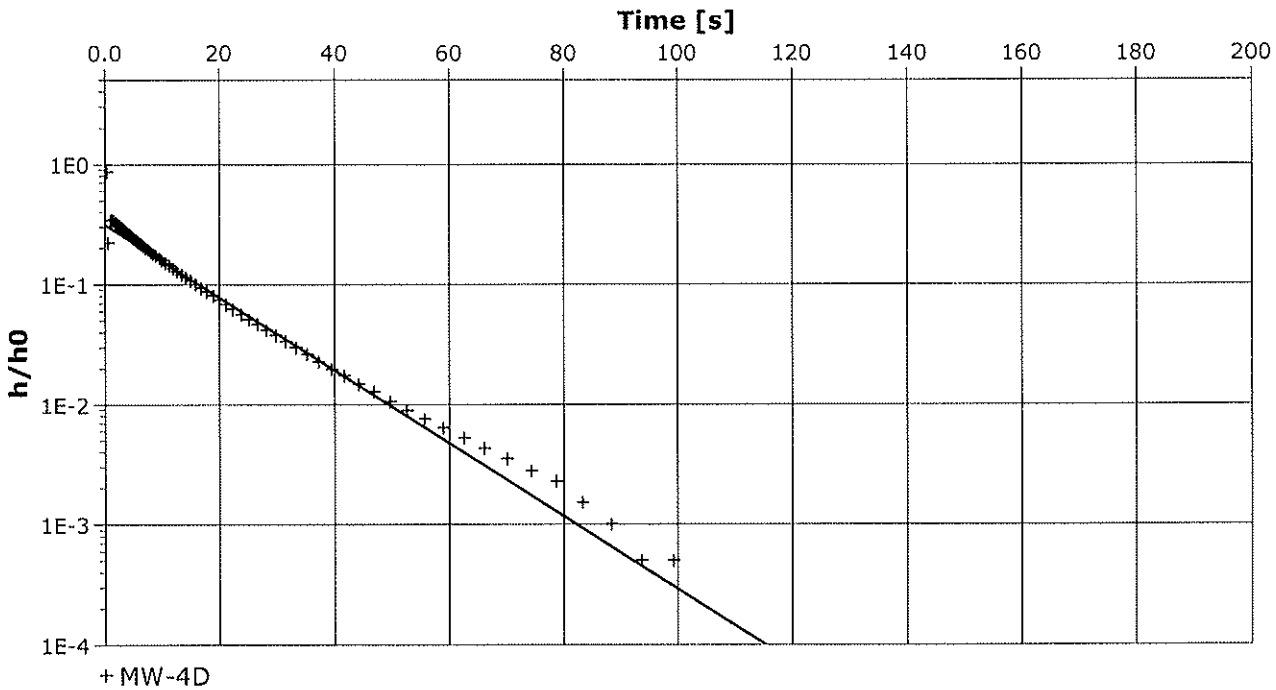
Location: Hamilton MA	Slug Test: mw4d trial 2	Test Well: MW-4D
Test conducted by: knr /kl		Test date: 1/22/2007
Analysis performed by: knr	mw4d trial 2 Hv	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Hvorslev		
Observation well	K [ft/d]	
MW-4D	9.95×10^{0}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

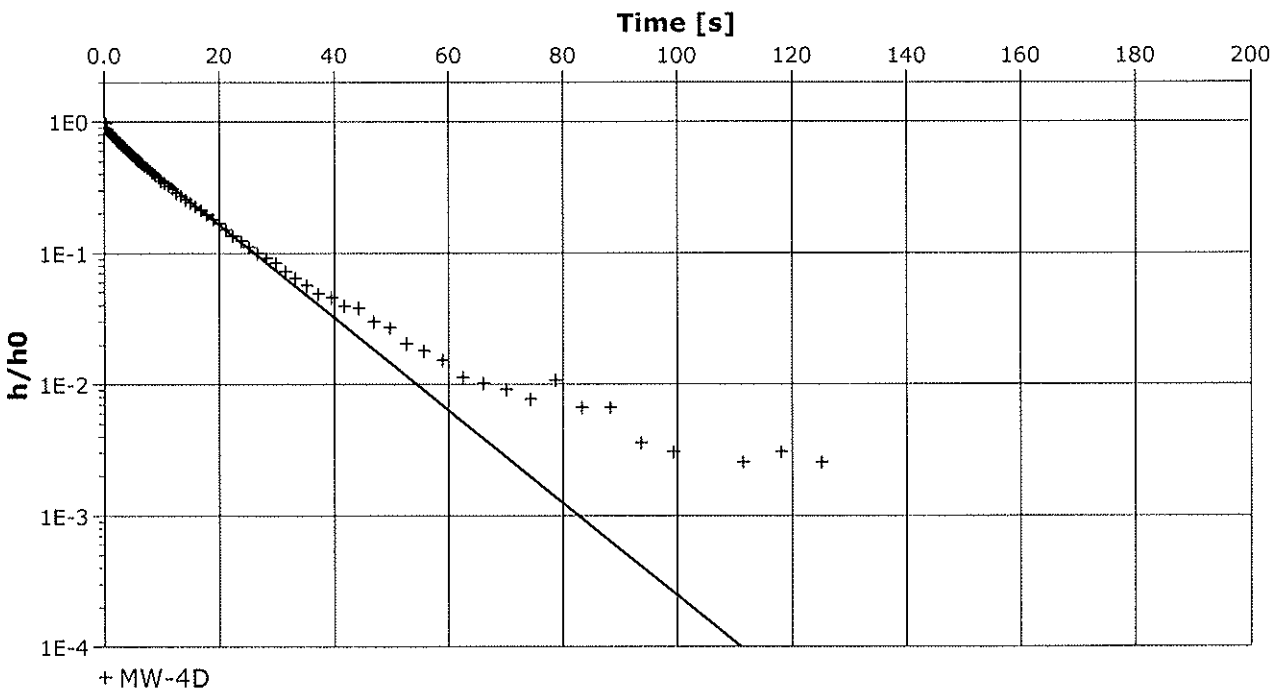
Location: Hamilton MA	Slug Test: mw4d trial 2	Test Well: MW-4D
Test conducted by: knr /kl		Test date: 1/22/2007
Analysis performed by: knr	mw4d trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-4D	7.80×10^{0}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw4d trial 3	Test Well: MW-4D
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: knr	mw4d trial 3 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

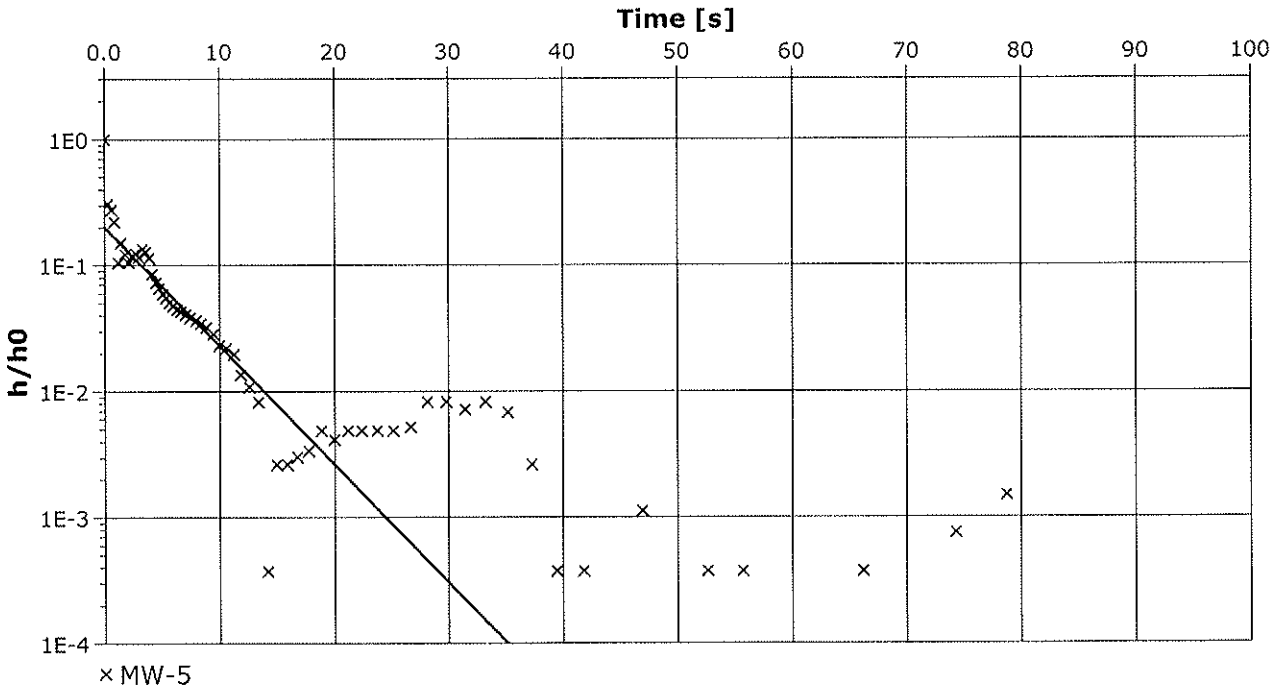


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-4D	9.08×10^{0}	

SEA Consultants Inc 485 Massachusetts Ave Cambridge MA 02139	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

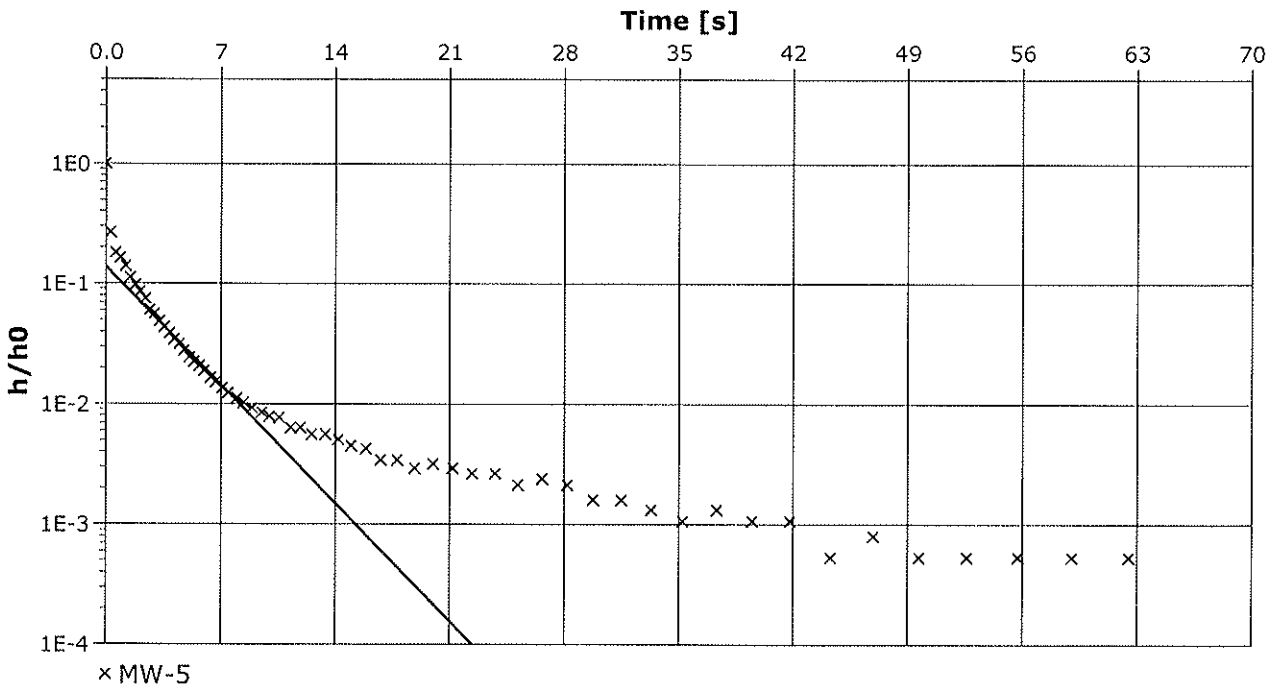
Location: Hamilton MA	Slug Test: mw5 trial 1	Test Well: MW-5
Test conducted by:		Test date: 2/7/2007
Analysis performed by:	mw5 trial 1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-5	2.00×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

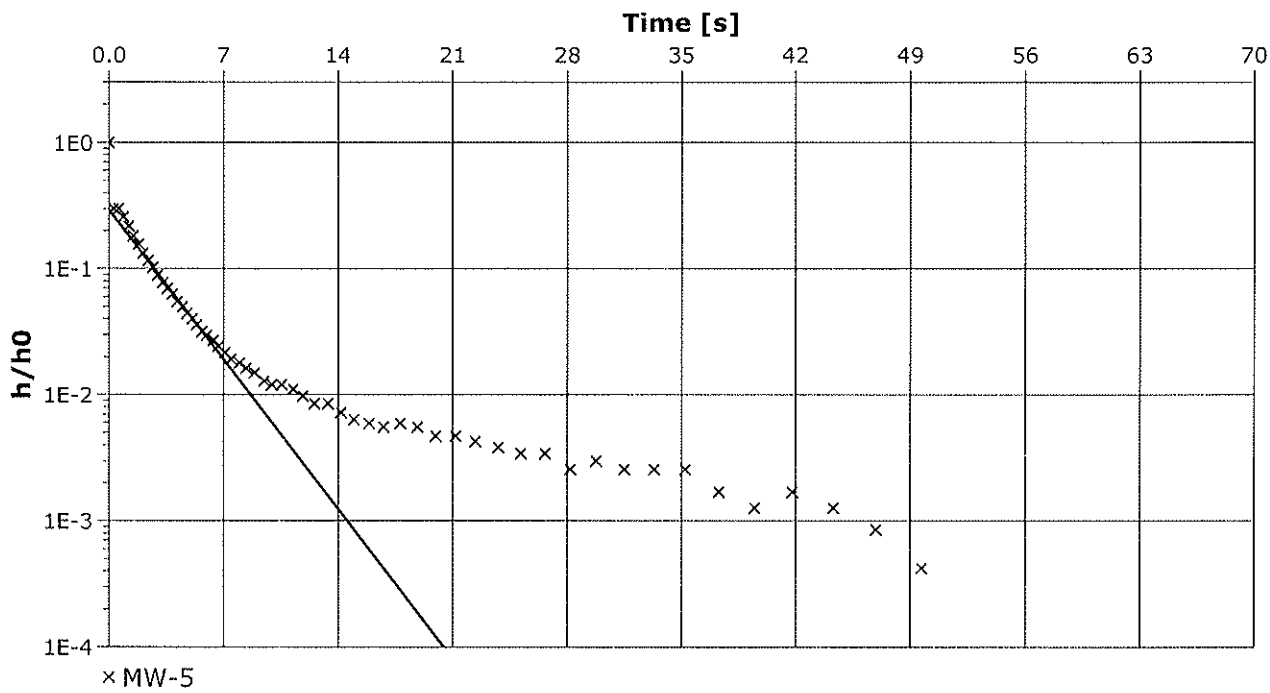
Location: Hamilton MA	Slug Test: mw5 trial 2	Test Well: MW-5
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: knr	mw5 trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-5	2.98×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report** Project: Hamilton Landfill CSA Number: 2006054.03 Client: Town of Hamilton

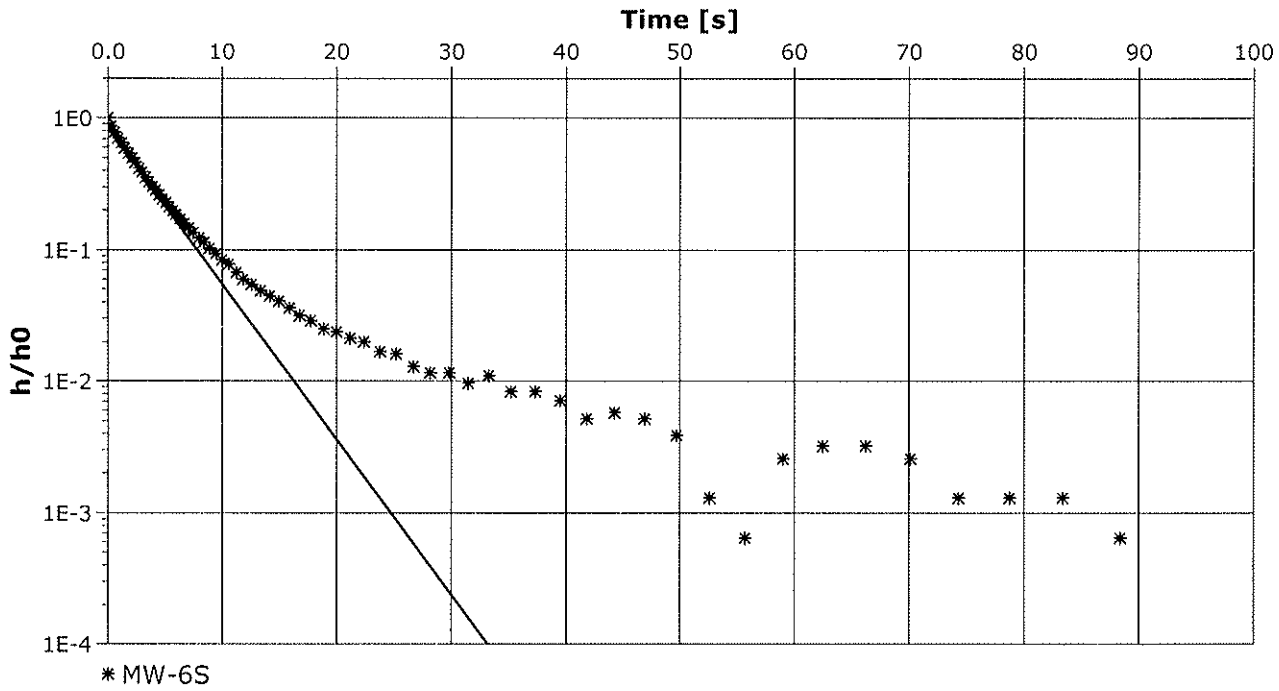
Location: Hamilton MA	Slug Test: mw 5 trial 3	Test Well: MW-5
Test conducted by: knr / KL		Test date: 1/22/2007
Analysis performed by: knr	mw 5 trial 3 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-5	3.60×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw6s trial 1	Test Well: MW-6S
Test conducted by: knr		Test date: 2/7/2007
Analysis performed by: knr	mw6s trial 1 b+r	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

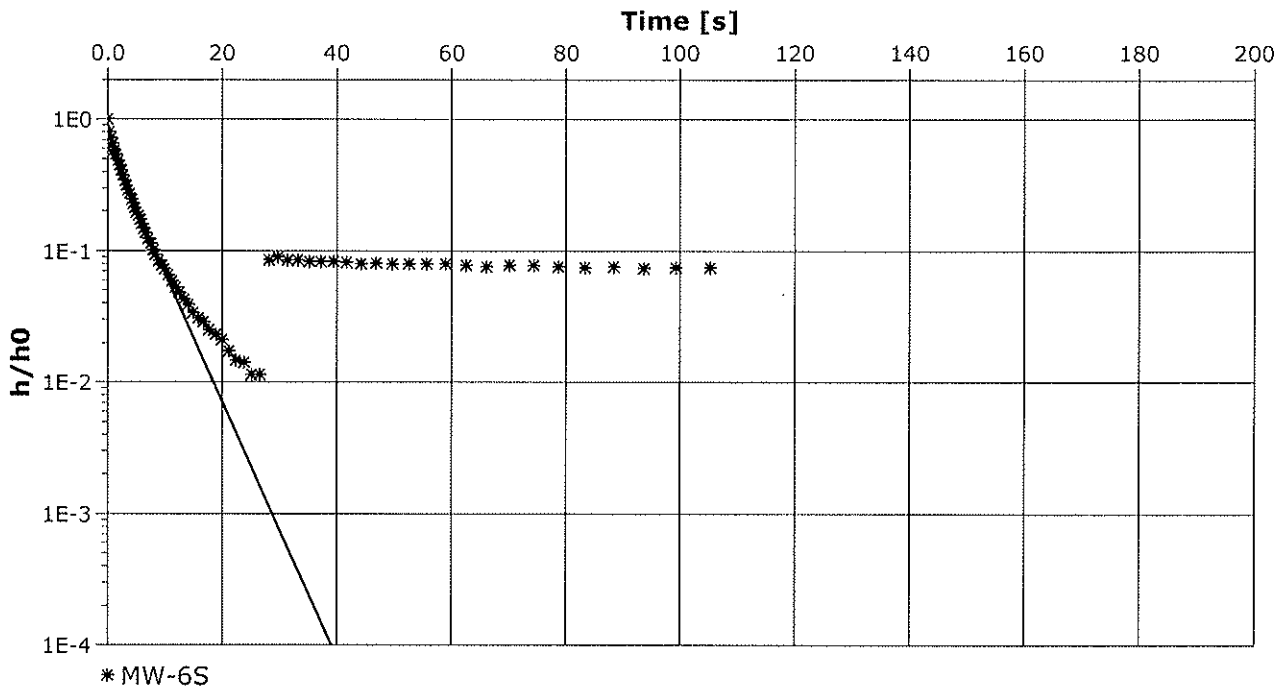


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-6S	3.04×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**	
	Project: Hamilton Landfill CSA	
	Number: 2006054.03	
	Client: Town of Hamilton	

Location: Hamilton MA	Slug Test: mw6s trial 2	Test Well: MW-6S
Test conducted by: knr		Test date: 2/7/2007
Analysis performed by: knr	mw6s trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

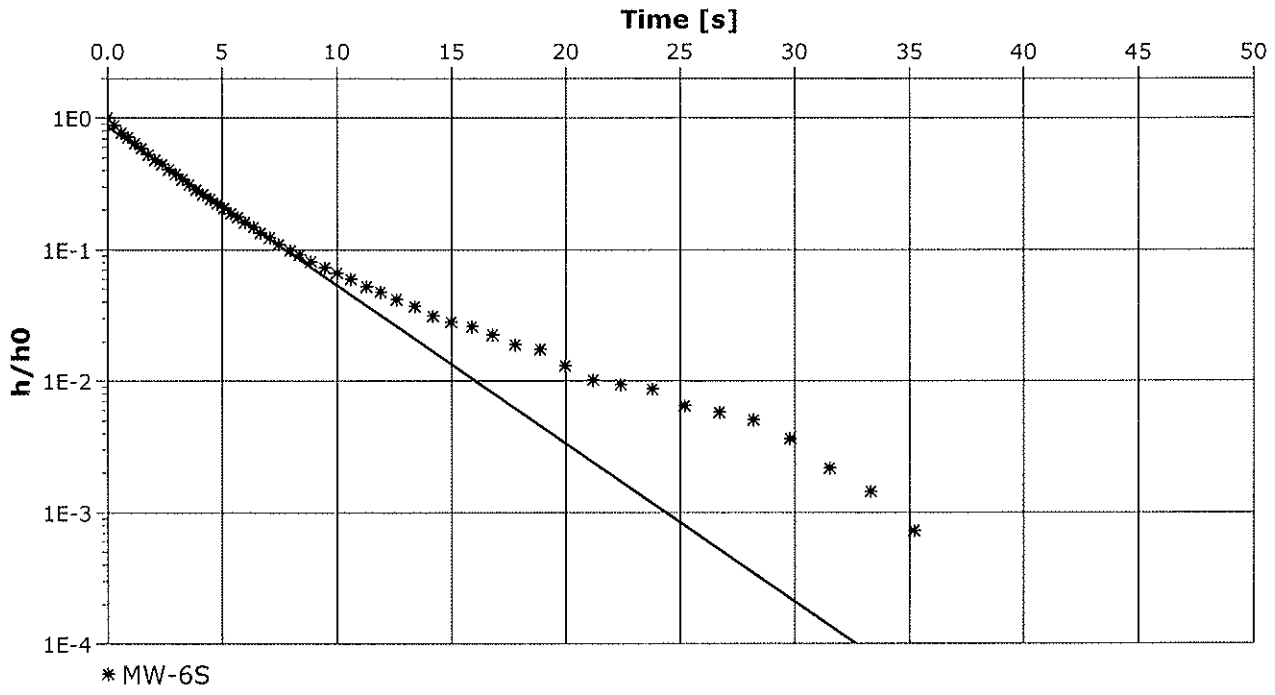


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-6S	2.50×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report**
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw6s trial 3	Test Well: MW-6S
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: knr	mw6s trial 3 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

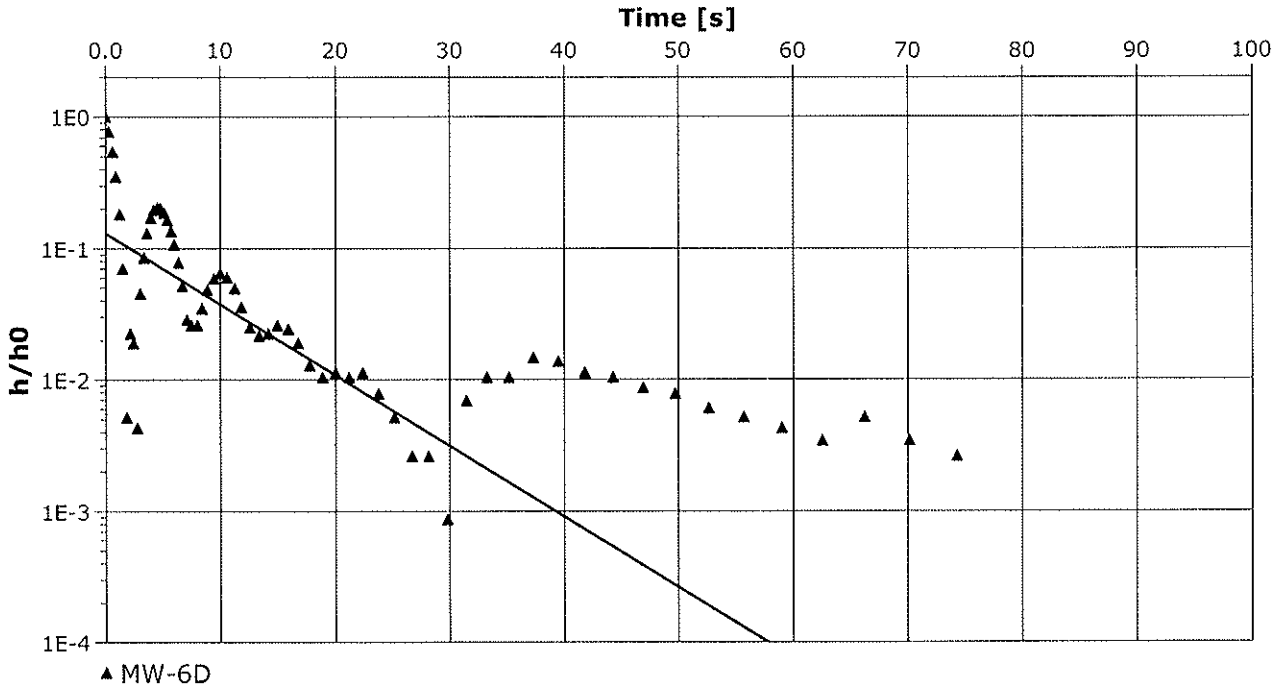


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-6S	3.10×10^{1}	

SEA Consultants Inc 485 Massachusetts Ave Cambridge MA 02139	Slug Test Analysis Report
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw 6d trial 1	Test Well: MW-6D
Test conducted by: knr / kl		Test date: 1/22/2007
Analysis performed by: knr	mw6d trial1 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		

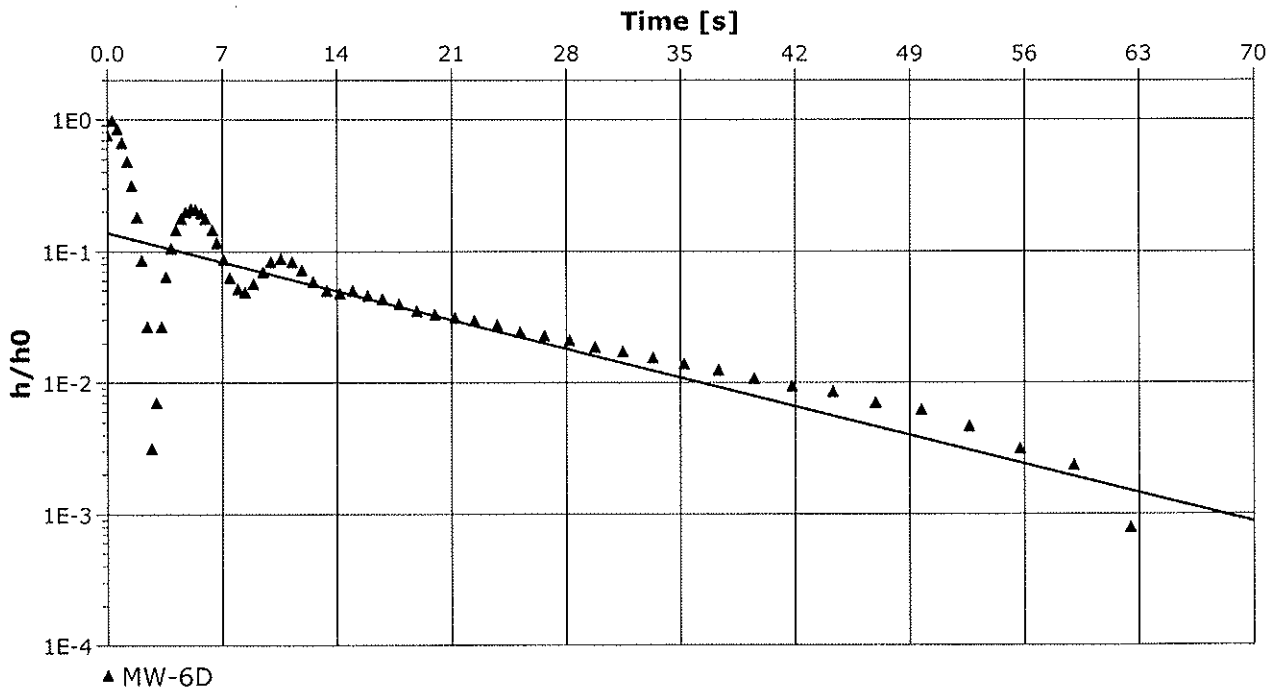


Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-6D	2.58×10^{1}	

SEA Consultants Inc **485 Massachusetts Ave** **Cambridge MA 02139**	**Slug Test Analysis Report** Project: Hamilton Landfill CSA Number: 2006054.03 Client: Town of Hamilton

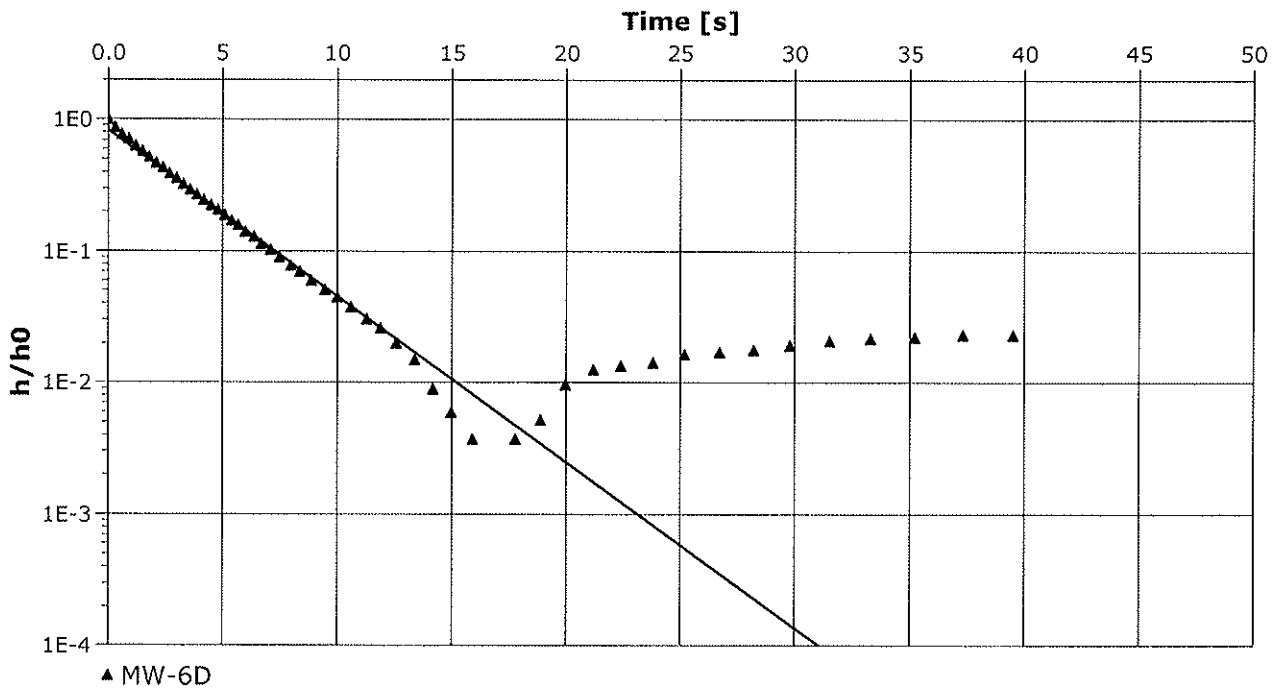
Location: Hamilton MA	Slug Test: mw6d trial 2	Test Well: MW-6D
Test conducted by: knr		Test date: 1/22/2007
Analysis performed by:	mw6 trial 2 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice		
Observation well	K [ft/d]	
MW-6D	1.50×10^{1}	

SEA Consultants Inc 485 Massachusetts Ave Cambridge MA 02139	Slug Test Analysis Report
	Project: Hamilton Landfill CSA
	Number: 2006054.03
	Client: Town of Hamilton

Location: Hamilton MA	Slug Test: mw6 trial 3	Test Well: MW-6D
Test conducted by: knr / KL		Test date: 1/22/2007
Analysis performed by: knr	mw6d trial 3 B+R	Date: 2/7/2007
Aquifer Thickness: 40.00 ft		



Calculation after Bouwer && Rice

Observation well	K [ft/d]	
MW-6D	6.04×10^{1}	