Maryland Department of the Environment

Waste Diversion and Utilization Program

Controlled Hazardous Substance
Post-Closure Permit

MDE

CHS PERMIT A-264
(EPA ID No. MDD000731356)

Permittee:	**Maryland Environmental Service** **259 Najoles Road** **Millersville, MD 21108**
Facility:	**Closed Hawkins Point Landfill** **5501 Quarantine Road** **Baltimore, MD 21226**

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Waste Diversion and Utilization Program

Controlled Hazardous Substance Permit Number A-264

Maryland Environmental Service
Hawkins Point Landfill
5501 Quarantine Road
Baltimore, Maryland 21226

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MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Maryland Environmental Service
Hawkins Point Landfill
5501 Quarantine Road
Baltimore, Maryland 21226

OVERVIEW

This permit is a renewal of a Controlled Hazardous Substance (CHS) permit previously issued to Maryland Environmental Service (MES) on January 28, 2002. The facility, Hawkins Point Landfill, is located at 5501 Quarantine Road, Baltimore, MD 21226. The permit establishes post-closure obligations for MES with respect to the closed Hawkins Point Landfill. MES is required by the permit to conduct the following operations in accordance with the requirements of the Code of Maryland Regulations Title 26, Subtitle 13:

- Post-closure care of the closed land disposal unit known as Area 5. Major activities required include maintenance, regular inspections, repairs and replacement, as necessary, of the security systems, the landfill cap, the leachate collection and removal system and the site groundwater monitoring wells.
- Groundwater monitoring.
- Leachate collection.

MES is also allowed to conduct the following activity:

- Temporary storage of leachate collected from the site in an above-ground tank before shipment off-site for final treatment and disposal.

Maryland Environmental Service has provided secure conditions meeting statutory and regulatory requirements concerning hazardous waste management. Maryland Environmental Service has also demonstrated that it has in place required personnel training programs and contingency plans as well as appropriate safeguards and security measures to meet applicable regulatory requirements.

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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MDE

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Secretary

CONTROLLED HAZARDOUS SUBSTANCE FACILITY PERMIT

Permit Number: **A-264**

EPA ID No.: **MDD000731356**

Effective Date: **December 10, 2012**

Expiration Date: **December 9, 2022**

Pursuant to the Provisions of §7-232 of the Environment Article, Annotated Code of Maryland and regulations promulgated thereunder, the Maryland Department of the Environment ("Department"), Land Management Administration (LMA) hereby issues this Controlled Hazardous Substance (CHS) Facility Permit to:

Maryland Environmental Service (MES)
259 Najoles Road
Millersville, Maryland 21108

for the purposes of requiring post-closure care and monitoring of an inactive CHS land disposal facility known as the Hawkins Point Landfill, located at 5501 Quarantine Road, Baltimore, Maryland 21226 (76° 32' 58" West Longitude and 39° 12' 29" North Latitude[†]). Maryland Environmental Service shall conduct the required post-closure care and monitoring in accordance with the standard, general and special conditions of this permit, the attachments included as part of this permit, and the provisions of Title 26, Subtitle 13 of the Code of Maryland Regulations (COMAR 26.13), Disposal of Controlled Hazardous Substances.

This permit is based on the assumption that the information submitted in the permit renewal application received by the Department on August 3, 2006, and as modified by subsequent amendments dated March 31, 2008, May 19, 2008, March 9, 2009, August 21, 2009, July 1, 2011, January 17, 2012, March 16, 2012, April 4, 2012, May 14, 2012, May 21, 2012, September 13, 2012 and September 19, 2012 (hereafter referred to as the application) is accurate and that the facility will be operated as specified in the application. Any inaccuracies found in this information may be grounds for modification or termination of this permit (COMAR 26.13.07.11 and .12) and potential enforcement action. MES shall inform the LMA of any deviation from or changes in the information submitted in the application which would affect MES' ability to comply with applicable regulations or permit conditions.

[†] These coordinates mark the center of the site.

PART I
STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

MES is required to render post-closure care of the closed facility and allowed to manage hazardous waste in accordance with the conditions of this permit. Any management of hazardous waste not authorized in this permit is prohibited except as otherwise authorized by COMAR 26.13. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Section 7003 of RCRA (42 USC §6973), Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC §9606(a) commonly known as CERCLA), or any other law governing protection of public health or the environment.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in COMAR 26.13.07.11 and .12. The filing of a request for a permit modification, revocation and re-issuance, or termination or the notification of planned changes or anticipated noncompliance on the part of MES, does not stay the applicability or enforceability of any permit conditions.

I.C. SEVERABILITY

The provisions of this permit are severable; and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DEFINITIONS

For the purpose of this permit, terms used herein shall have the same meaning as those in COMAR 26.13 unless this permit specifically states otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the general scientific or industrial meaning of the term.

I.E. SIGNATORY REQUIREMENTS

All permit applications (including requests for permit modifications), reports or other information requested by the LMA shall be signed and certified as required by COMAR 26.13.07.02B, 07.03 and 07.04L.

I.F. DOCUMENTS TO BE MAINTAINED AT THE FACILITY SITE

MES shall maintain at the facility, until closure is completed and certified by an independent registered professional engineer, the following documents and all amendments, revisions, and modifications to these documents:

I.F.1. Waste Analysis Plan (Permit Attachment 1) required by COMAR 26.13.05.02D and this permit;

I.F.2 Site Safety and Health Plan (Permit Attachment 2) required by COMAR 26.13.05.03 and this permit;

I.F.3. Personnel Training Outline (Permit Attachment 3) required by COMAR 26.13.05.02G and this permit, and personnel training records required by COMAR 26.13.05.02G(4) and (5);

I.F.4. Site Security and Contingency Plan (Permit Attachment 4) required by COMAR 26.13.05.04 and this permit;

I.F.5. Groundwater Monitoring Program (Permit Attachment 5) required by COMAR 26.13.05.06 to 26.13.05.06-7 and this permit;

I.F.6. Inspection and maintenance schedules and logs (Permit Attachment 6) required by COMAR 26.13.05.02F(2) and (4), COMAR 26.13.05.07, COMAR 26.13.05.10D and this permit;

I.F.7. Waste Storage Process Information (Permit Attachment 7) required by COMAR 26.13.07.02D(13), COMAR 26.13.05.10 through .10-7, and this permit;

I.F.8. A copy of this permit, including attachments;

I.F.9. A copy of COMAR 26.13 and its updates; and

I.F.10 All other documents required by subsequent parts of this permit.

I.G. DUTIES AND REQUIREMENTS

I.G.1. Duty to Comply. MES shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any other permit noncompliance constitutes a violation of COMAR and is grounds for enforcement action, permit termination, revocation and re-issuance, modifications, or denial of a permit renewal application. (COMAR 26.13.07.04B)

I.G.2. Duty to Reapply. If MES is required to continue activities regulated by this permit after the expiration date of the permit, and/or wishes to continue an activity regulated by this permit after the expiration date of the permit, MES shall submit

a complete application for a new permit at least 180 days before this permit expires. (COMAR 26.13.07.04C)

I.G.3. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date if MES has submitted a timely complete application and, through no fault of MES, the LMA has not issued a new permit. (State Government Article, §10-226(b))

I.G.4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for MES in an enforcement action to argue that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (COMAR 26.13.07.04D)

I.G.5. Duty to Mitigate. MES shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit. (COMAR 26.13.07.04E)

I.G.6. Proper Operation and Maintenance. MES shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by MES to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems to maintain compliance with the conditions of this permit. (COMAR 26.13.07.04F)

I.G.7. Duty to Provide Information. MES shall furnish to the LMA, within a reasonable time, any relevant information which the LMA may request to determine whether cause exists for modifying, revoking or re-issuing, or terminating this permit, or to determine compliance with this permit. MES shall also furnish to the LMA, upon request, copies of records required to be kept by this permit. (COMAR 26.13.07.04I)

I.G.8. Inspection and Entry. MES shall allow the LMA, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter at reasonable times upon MES' premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor substances or parameters at any location, at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Environment Article or COMAR. (COMAR 26.13.07.04J)

I.G.9. Monitoring and Records.

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed shall be the appropriate method from COMAR 26.13.02.20 or an equivalent method approved by the LMA. Laboratory methods shall be those specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846, 3rd ed.) and its updates as incorporated by reference in COMAR 26.13.01.05A(4), Standard Methods for the Examination of Water and Waste Water (22nd ed., 2012) or an equivalent method. (COMAR 26.13.07.04K(1))

b. MES shall retain records of all monitoring information, including all maintenance records and copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report, and record. These periods may be extended by request of the LMA at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. (COMAR 26.13.07.04K(1); COMAR 26.13.05.05.E(2))

c. Records of monitoring information shall specify:

1. The dates, exact place, and times of sampling or measurements;
2. The individuals who performed the sampling or measurements;
3. The dates analyses were performed;
4. The individuals who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses. (COMAR 26.13.07.04K(3))

I.G.10. Reporting Planned Changes. MES shall give notice to the LMA as soon as possible of any planned physical alterations or additions to the permitted facility or any planned alterations to the permitted activity. This notice shall include a description of all incidents of noncompliance reasonably expected to result from the proposed changes. (COMAR 26.13.07.04M(1) and M(2))

I.G.11. Transfer of Permit. This permit may be transferred to a new owner or operator only if it is modified or revoked and re-issued pursuant to COMAR 26.13.07.10.

Before transferring ownership or operation of the facility during its operating life, MES shall notify the new owner or operator in writing of the requirements of COMAR 26.13 and provide the new owner with a copy of this permit. (COMAR 26.13.07.04M(3))

I.G.12. Notification.

a. MES shall report to the LMA any noncompliance, which may endanger health or the environment, orally within 24 hours and in writing within 5 days from the time MES becomes aware of the circumstances. (COMAR 26.13.07.04M(6))

b. Oral and written reports required by Permit Condition I.G.12.a shall include the following:

1. Information concerning release of any hazardous waste that may endanger a public drinking water supply source;

2. Any information of a release or discharge of hazardous waste, or of a fire or explosion at the facility which could threaten human health or the environment outside the facility, with the description of the occurrence and its cause including:

i. The name, address, and telephone number of the owner or operator;
ii. The name, address, and telephone number of the facility;
iii. The date, time, and type of the incident (for example, a release or fire);
iv. The names and quantities of material(s) involved;
v. The extent of injuries, if any;
vi. The assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
vii. The estimated quantity and disposition of recovered material that resulted from the incident. (COMAR 26.13.07.15D)

c. In addition to the information required by Permit Condition I.G.12.b, MES shall include in the written report of noncompliance:

1. A description of the noncompliance and its cause;

2. The period of noncompliance, including exact dates and times, and if the noncompliance has been corrected or the anticipated time it is expected to continue; and

3. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. (COMAR 26.13.07.04M(6))

d. MES may submit the report required by Permit Condition I.G.12.b within 15 days of becoming aware of the circumstances requiring notification, if the LMA approves the later deadline. (COMAR 26.13.07.15D(2)(g))

e. If MES determines that the facility has had a release, fire or explosion which could threaten human health, or the environment, outside the facility, or, if the release exceeds the Reportable Quantities set forth in 40 CFR 302, MES shall immediately notify:

1. The local designated on-scene coordinator, if any;

2. The National Response Center at 1-800-424-8802;

3. The LMA Solid Waste Compliance Division at (410) 537-3315;

4. The 24-hour MDE Emergency Response Division at 1-866-633-4686;

5. The local Fire Department by dialing 911;

6. The Baltimore City Southern District Police Station by dialing 911 or calling (410) 396-2499;

7. Other appropriate local authorities if the facility's Emergency Coordinator determines that evacuation of local areas may be advisable. (COMAR 26.13.05.04G(4))

f. In the oral notification report required by Permit Condition I.G.12.e, MES shall include:

1. Name and telephone number of reporter;

2. Name and address of the facility;

3. Time and type of incident (release, fire or explosion);

4. Name and quantity of materials involved, to the extent known;

5. The extent of injuries, if any; and

6. The possible hazards to human health, or the environment, outside the facility. (COMAR 26.13.05.04G(4)(b))

g. If an incident occurs which requires MES to implement the Emergency Procedures/Contingency Plan of Permit Attachment 4, MES shall make a written submission to the LMA within 15 days of the incident

(COMAR 26.13.05.04G(10)). This submission shall include the items of information specified under (i) through (vii) of Permit Condition I.G.12.b(2).

I.G.13. Other Non-compliance. MES shall report other instances of non-compliance not otherwise required to be reported above at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition I.G.12. (COMAR 26.13.07.04M(7))

I.G.14. Other Information. Whenever MES becomes aware that MES failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the LMA, MES shall promptly submit such facts or information to the LMA and state the reason for the omission or inaccuracy. (COMAR 26.13.07.04M(8))

I.H. CERTIFICATION OF CONSTRUCTION OR MODIFICATION

MES may not manage hazardous waste at a new facility or a modified portion of the facility until:

I.H.1. MES has submitted to the LMA, by certified mail or hand delivery, a letter signed by MES, and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and

I.H.2. Either:

a. The LMA has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of this permit; or

b. Within fifteen (15) days of the date of the submission of the letter required by Permit Condition I.H.1, MES has not received notice from the LMA of the LMA's intent to conduct the inspection described in Permit Condition I.H.2.a. (COMAR 26.13.07.15C)

I.I. PERMIT FEE

Payment of the permit fee for this facility is a prerequisite to issuing this permit. Failure to pay the permit fee in a timely manner constitutes grounds for permit revocation. As specified in COMAR 26.13.07.21 the permit fee is based on the size of the facility, nature and quantity of CHS, and the anticipated costs of regulatory activities such as permit preparation, inspections, monitoring, and program development. During the existence of this permit, the permit fee is $30,883.75 per year, in addition to the cost of public notices.

I.J. COMPLIANCE SCHEDULES

Reports of compliance or non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule. (COMAR 26.13.07.04M(5) and 26.13.07.07D)

PART II
GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY

MES shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, surface water or groundwater which could threaten human health or the environment.

II.B. GENERAL WASTE ANALYSIS

MES shall follow the procedures described in the attached Waste Analysis Plan, Permit Attachment 1. MES shall verify its waste analysis as part of its quality assurance program, in accordance with current EPA practices (Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, 3rd ed.) and its updates as incorporated by reference in COMAR 26.13.01.05A(4) or equivalent methods approved by the LMA; and at a minimum, maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If MES uses a contract laboratory to perform analysis, then MES shall inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this permit.

II.C. SECURITY

MES shall comply with the security provisions of COMAR 26.13.05.02E.

II.D. GENERAL INSPECTION REQUIREMENTS

MES shall follow the inspection schedules in Permit Attachment 6. MES shall remedy any deterioration or malfunction discovered by an inspection as required by COMAR 26.13.05.02F(3). Records of inspections shall be kept as required by COMAR 26.13.05.02F(4).

II.E. PERSONNEL TRAINING

MES shall conduct personnel training as required by COMAR 26.13.05.02G. The training program shall follow Personnel Training Outline, Permit Attachment 3. MES shall maintain documents and records as required by COMAR 26.13.05.02G(4) and (5).

II.F. PREPAREDNESS AND PREVENTION

II.F.1. Required Equipment. At a minimum, MES shall equip the facility with the equipment set forth in Permit Attachment 2, Site Safety and Health Plan (SSHP) (Attachment D, Section 4.2), as required by COMAR 26.13.05.03 and 04.

II.F.2. Testing and Maintenance of Equipment. MES shall test and maintain the equipment specified in the previous permit condition, as necessary, to assure its proper operation in time of an emergency, as required by COMAR 26.13.05.03D.

II.F.3. Access to Communications or Alarm Systems. MES shall maintain access to the communications or alarm systems specified in Permit Attachment 2, SSHP (Attachment D, Section 4.1) as required by COMAR 26.13.05.03E.

II.F.4. Required Aisle Space. At a minimum, MES shall maintain aisle space as required by COMAR 26.13.05.02I and 03F, wherever CHS are stored or treated.

II.F.5. Arrangements with Local Authorities. MES shall maintain arrangements with local authorities as required by COMAR 26.13.05.03H. If local officials refuse to enter into or renew existing preparedness and prevention arrangements with MES, MES must document this refusal in the operating record and immediately notify the LMA in writing of the refusal.

II.G. CONTINGENCY PLAN

II.G.1. Implementation of Plan. MES shall immediately carry out the provisions of the Contingency Plan, Permit Attachment 4, and follow the emergency procedures described by COMAR 26.13.05.04G whenever there is an imminent or actual fire, explosion, or release of hazardous waste or constituents that threatens or could threaten human health or the environment. (COMAR 26.13.05.04B(2))

II.G.2. Amendments to Plan. MES shall review and immediately amend, if necessary, the Contingency Plan as required by COMAR 26.13.05.04E.

II.G.3. Copies of Plan. MES shall comply with the requirements of COMAR 26.13.05.04D.

II.G.4. Emergency Coordinator. MES shall comply with requirements of COMAR 26.13.05.04F.

II.G.5. Emergency Procedures. MES shall comply with the requirements of COMAR 26.13.05.04G.

II.H. RECORDKEEPING AND REPORTING

II.H.1. Operating Record. MES shall maintain a written operating record at the facility in accordance with COMAR 26.13.05.05D.

II.H.2. Biennial Reporting. MES shall comply with all applicable biennial reporting requirements of COMAR 26.13.05.05F.

II.H.3. Availability, retention and Disposition of Records. MES shall retain the required records and make them available in accordance with COMAR 26.13.05.05E.

II.H.4. Additional reports. MES shall submit any required reports in accordance with COMAR 26.13.05.05H.

II.I. CLOSURE REQUIREMENTS

II.I.1. Performance Standard. MES shall close the facility as required by COMAR 26.13.05.07B, and in accordance with the Closure Plan, described under Permit Condition V.H.

II.I.2. Amendments to Closure Plan. MES shall amend the Closure Plan in accordance with COMAR 26.13.05.07C whenever necessary.

II.I.3. Notification of Closure. MES shall notify the LMA at least 45 days prior to the date MES expects to begin closure.

II.I.4. Time Allowed for Closure. After receiving the final volume of hazardous waste at a hazardous waste management unit or facility, MES shall remove from the hazardous waste management unit or facility all hazardous waste and shall complete closure activities in accordance with the closure schedules approved by LMA in accordance with Permit Condition V.H. MES shall implement the post-closure requirements of Permit Condition II.J, below, as amended if necessary, for any wastes that remain on site after completion of closure.

II.I.5. Disposal or Decontamination of Equipment. MES shall decontaminate and/or dispose of all facility equipment, structures and soils as required by COMAR 26.13.05.07E.

II.I.6. Certification of Closure. MES shall certify that the facility has been closed in accordance with the specifications in the approved Closure Plan and as required by COMAR 26.13.05.07F.

II.J. POST-CLOSURE REQUIREMENTS

II.J.1. Post-Closure Plan. MES shall maintain a written Post-Closure Plan for the closed facility as required by COMAR 26.13.05.07H(1).

II.J.2. Post-Closure Care Period. MES shall provide post-closure care of the site in compliance with the requirements of COMAR 26.13.05.07G(1), Part III of this permit, and Permit Attachment 6, Post-Closure Inspections and Maintenance.

II.J.3. Post-Closure Security. MES shall maintain security at the facility during the post-closure care period as required by COMAR 26.13.05.07G(3) and in accordance with Permit Attachment 4, Site Security and Contingency Plan.

II.J.4. Maintenance and Monitoring. Throughout the post-closure care period MES shall maintain and monitor the facility in accordance with COMAR 26.13.05.07G(1)(a), 26.13.05.07G(1)(b) and 26.13.05.14J(2).

II.J.5. Amendments to Post-Closure Plan. MES shall amend the Post-Closure provisions in Permit Attachments 4, 5 and 6, in accordance with COMAR 26.13.05.07H(4), whenever necessary.

II.J 6. Post-Closure Notices:

a. Within 60 days of the effective date of this permit, MES shall:

1. Record a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, in accordance with COMAR 26.13.05.07I(2)(a).

2. Submit a certification that a notation, in accordance with Permit Condition II.J.6.a.1, above, has been recorded, including a copy of the document in which the notation has been placed. (MES has complied with 1 and 2 above)

(Note: MES has previously satisfied the requirements of Permit Condition II.J.6.a. No further action is required by MES under this Permit Condition.)

b. MES shall request and obtain a permit modification prior to post-closure removal of hazardous wastes, hazardous waste residues, liners, or contaminated soils, in accordance with COMAR 26.13.05.07I(3).

II.J.7. Certification of Completion of Post-Closure Care Upon completion of the post-closure care period, MES shall provide the certification required by COMAR 26.13.05.07J.

II.K. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES

MES shall comply with the requirements of COMAR 26.13.05.02H.

II.L. MANIFEST SYSTEM

MES shall comply with the manifest requirements of COMAR 26.13.05.05B, C, and G.

II.M. FLOODPLAIN STANDARD

MES shall comply with the requirements of COMAR 26.13.05.02-1B.

II.N. WASTE MINIMIZATION/SOURCE REDUCTION

MES shall develop and conduct a Waste Minimization/Source Reduction Program. At a minimum, the program should evaluate the waste minimization/source reduction potential

for all hazardous waste streams on a yearly basis. MES shall report waste reduction efforts in the facility biennial report.

II.O. GROUNDWATER PROTECTION

II.O.1. Required Program. MES shall comply with the requirements of the monitoring and response program of COMAR 26.13.05.06 through 26.13.05.06-7, and the conditions specified in this permit.

II.O.2. General Groundwater Monitoring Requirements. MES shall comply with the requirements of COMAR 26.13.05.06-2 for any groundwater monitoring program specified in this permit or developed to satisfy COMAR 26.13.05.06-4, 26.13.05.06-5 or 26.13.05.06-6.

II.P. SURVEYED BENCHMARKS

MES shall protect and maintain all surveyed benchmarks at the facility as required by COMAR 26.13.05.14J(2)(e).

PART III
POST-CLOSURE CARE

III.A. GENERAL DESCRIPTION

Area 5 of the Hawkins Point Landfill is a closed land disposal unit that is currently undergoing post-closure care. The landfill was used solely for the disposal of chrome ore tailings and chromium contaminated debris generated from Allied Signal's Baltimore Works Plant. The waste was designated hazardous for Toxicity (D007) and Corrosivity (D002). The amount of waste contained in the Area 5 landfill is estimated at 462,900‡ tons disposed of in 10 cells‡. Historically, Area 5 has generated an annual amount of leachate ranging between 200,000 and 400,000 gallons.

III.B. UNIT IDENTIFICATION

This section of the permit applies to the following hazardous waste management units:

Type of Facility	Designation and Number of Units	Maximum Waste Inventory	Description of Wastes Contained	Hazardous Waste No.
Landfill	Area 5, Cells 1-3 and 5-11‡	462,900 tons	Chrome ore tailings and chromium contaminated debris	D007, D002

Area 5 is shown in Figure 1.1 included in Permit Attachment 1.

III.C. POST-CLOSURE PROCEDURES AND USE OF PROPERTY

III.C.1. Post-Closure Obligation – General Requirements and Duration.

a. MES shall conduct post-closure care as specified in this permit for each of the hazardous waste management units listed in Permit Condition III.B.

b. Unless the LMA shortens the post-closure care period as provided in COMAR 26.13.05.07G(2)(a), MES shall be subject to the post-closure requirements referenced in Permit Condition III.C.1.a for, at a minimum, 20 years after the effective date of this permit.

‡ The amount of waste contained, number of cells and designated cell numbers are based on a letter from the Office of the Attorney General at MES dated March 14, 1995, and a Survey Plat and Deed Notation attached thereto.

III.C.2. During the term of post-closure care, MES shall:

a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, and other events;

b. Continue to operate the leachate collection and removal system;

c. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of COMAR 26.13.05.06 – .06-7;

d. Prevent run-on and run-off from eroding or otherwise damaging the final cover;

e. Protect and maintain surveyed benchmarks used in complying with the surveying and record keeping requirements of COMAR 26.13.05.14I;

f. Maintain a vegetative cover sufficient to minimize the effects of erosion on the final cover; and

g. Protect the integrity of the cap from damage by plants with deeply penetrating root systems by mowing the vegetative cover during the growing season at an appropriate frequency and, as necessary, removing plants from the vegetative cover before their roots may damage the cap.

III.C.3. MES shall comply with all security requirements specified in Permit Attachment 4, Site Security and Contingency Plan.

III.C.4. MES shall not allow any use of the units designated in Permit Condition III.B that will:

a. Disturb the integrity of the final cover, liners, or any components of the containment system; or

b. Impair the functioning of the facility's monitoring systems.

III.C.5. MES shall implement post-closure requirements in Post-Closure Inspections and Maintenance. All post-closure care activities must be conducted in accordance with the provisions of Permit Attachment 6, or as otherwise required by this permit.

III.D. INSPECTIONS

MES shall inspect the components, structures, and equipment at the site in accordance with the Inspection Schedule, included in Permit Attachment 6.

III.E. NOTICES AND CERTIFICATION

III.E.1. If MES or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove the hazardous wastes

and hazardous waste residues, the liner, if any, or contaminated soils, then the owner/operator shall request a modification to this post closure permit in accordance with the applicable requirements in COMAR 26.13.07 (Permits for CHS Facilities). MES or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of COMAR 26.13.05.07G (4) (Post-Closure Care and Use of Property).

III.E.2. No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, MES shall submit to the LMA, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by MES and an independent, registered professional engineer. Documentation supporting the independent, registered professional engineer's certification must be furnished to the LMA upon request.

III.F. POST-CLOSURE PERMIT MODIFICATIONS

III.F.1. Before making any modifications to the approved Post-Closure Plan, MES shall request a permit modification to authorize the change. This request shall be in accordance with applicable requirements of COMAR 26.13.07 and shall include a copy of the proposed amended Post-Closure Plan for approval by the LMA.

III.F.2. MES shall request a permit modification whenever changes in operating plans or facility design affect the approved Post-Closure Plan, there is a change in the expected year of final closure, or other events occur during the active life of the facility that affect the approved Post-Closure Plan.

III.F.3. MES shall submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the Post-Closure Plan. (COMAR 26.13.05.07H(4))

III.G. RESPONSE TO SEEPAGE OR OTHER EVIDENCE OF RELEASES

If there is evidence of seepage of leachate from Area 5 to surface features beyond the area provided with a final cover, or other evidence that indicates that the post-closure containment features constructed at Area 5 are not performing as designed, MES shall:

III.G.1. Notify the LMA in accordance with the requirements of Permit Conditions I.G.12.a – I.G.12.d;

III.G.2. Take actions necessary to mitigate any immediate hazards caused by the situation by implementing measures such as isolating released material, characterizing released materials to allow evaluation of potential impacts and determination of applicable management standards, determining the extent of the area obviously affected by the release, capturing continuing releases,

limiting the spread of contamination, and eliminating, to the extent practicable, the continuing release of material;

III.G.3. Within 30 days after the discovery of a release or of other circumstances indicating that post-closure containment features are not performing as designed, or by a later deadline acceptable to the LMA, submit to the LMA a work plan for review and approval that proposes:

a. specific actions to remediate any contamination caused by the situation;

b. modifications to the facility to eliminate the release or otherwise address the situation;

c. modifications to the facility or other actions to be taken to prevent recurrence of the situation; and

d. a schedule for performing the actions specified in Permit Condition III.G.3.a through c; and

III.G.4. Initiate and complete actions in the work plan described in Permit Condition III.G.3 on a schedule acceptable to the LMA following approval by the LMA of the work plan.

III.H. INSTITUTIONAL CONTROL REQUIREMENTS FOR SITE-WIDE CORRECTIVE ACTION

III.H.1. The Facility shall not be used for residential purposes unless it is demonstrated to MDE and the U.S. Environmental Protection Agency (EPA) that such use will not pose a threat to human health or the environment and MDE and EPA provide prior written approval for such use.

III.H.2. The Facility shall not be used in any way that will adversely affect or interfere with the integrity and protectiveness of the landfill caps; the leachate collection and removal system, and groundwater monitoring wells unless it is demonstrated to MDE and EPA that such use will not pose a threat to human health or the environment, and MDE and EPA provide prior written approval for such disturbance.

III.H.3. The groundwater from the Facility shall not be used for any purpose other than to conduct the operation and maintenance and monitoring activities required by MDE, unless it is demonstrated to MDE and EPA that such use will not pose a threat to human health or the environment, and MDE and EPA provide written approval for such use.

III.H.4. For the purposes of Permit Conditions III.H.1 – III.H.3 and III.I, "Facility" means Areas 2, 3, 4 and 5, as depicted in Figure 1.1 in Attachment 1 of this permit.

III.I. RELATION OF THIS PERMIT TO FEDERAL CORRECTIVE ACTION OBLIGATIONS

Currently, the U.S. Environmental Protection Agency (EPA) is the implementing authority in Maryland for the site-wide corrective action requirements established under Section 3004(u) of the Resource Conservation and Recovery Act (RCRA). EPA is currently developing, through an appropriate administrative process, the site-wide corrective action requirements for the facility under federal law. Once that process has been completed, this section of the permit will be amended, through a minor modification, to explain the relationship between this permit and the EPA-specified site-wide corrective action responsibilities and obligations imposed on the permittee.

PART IV
GROUNDWATER DETECTION MONITORING

IV.A. GENERAL PROVISIONS

Area 5 of the Hawkins Point Landfill is currently monitored for releases from the waste management units with two sets of groundwater monitoring wells. Each set consists of one background and two compliance point wells as specified in Permit Condition IV.B. MES shall monitor these wells to determine the groundwater quality of the uppermost aquifer underlying the waste management area in accordance with the requirements of Permit Conditions IV.B - IV.E.

IV.B. WELL LOCATIONS AND SPECIFICATIONS

IV.B.1. MES shall maintain the groundwater monitoring system consisting of the wells specified below:

Well Set	Well No.	Well Function	Total Depth (ft.)	Screened Interval (ft.)
1	2B-1	Upgradient (Background)	45	35 – 45
	2D–2	Downgradient (Compliance)	36	26 – 36
	2F	Downgradient (Compliance)	30	20 – 30
2	2H	Upgradient (Background)	30	20 – 30
	2E	Downgradient (Compliance)	39	29 – 39
	2G	Downgradient (Compliance)	35	25 – 35

Well 2B-1 is located on the southwestern boundary of Area 5. Wells 2D and 2F are located on the eastern and northern boundaries of Area 5, respectively. In the second set, well 2H is designated as the upgradient monitoring well for the area west of Area 5 known as the "Trough Area". Wells 2G and 2E are located on the eastern boundary of Area 5. The well locations are shown in Figure 2.2 included in Permit Attachment 5.

IV.B.2. MES shall maintain the monitoring wells identified in Permit Condition IV.B.1, in accordance with the detailed plans and specifications presented in Permit Attachment 5.

IV.B.3. MES shall redevelop any one of the monitoring wells listed in Permit Condition IV.B.1 whenever 20 % of the screened interval of the well is silted or when the well does not recharge within 24 hours of bailing.

IV.C. INDICATOR PARAMETERS AND MONITORING CONSTITUENTS

IV.C.1. MES shall monitor the wells described in Permit Condition IV.B.1 for the following indicator parameters and constituents:

Indicator Parameters	Constituents
Specific Conductivity	Chromium
Total Organic Carbon	Hexavalent Chromium
Total Organic Halogens	Chloride
	Iron
	Manganese
	Phenols
	Sodium
	Sulfate

IV.C.2. MES shall also monitor the wells for Barium and pH only for the purpose of trend analysis.

IV.D. SAMPLING AND ANALYSIS PROCEDURES

MES shall conduct the following actions in accordance with the procedures specified in Permit Attachment 5, when obtaining and analyzing samples from the groundwater monitoring wells described in Permit Condition IV.B:

IV.D.1. Collect a sequence of at least four samples from each well at an interval that assures an independent sample;

IV.D.2 Assure that the sampling method used maintains integrity of the sample, and, in particular, either assure that the sampling process described in Attachment 5, Section 2.1.4 does not affect volatile organic constituents of the sample, or use an alternative sampling procedure acceptable to the LMA;

IV.D.3. Preserve integrity of the collected samples during storage and shipment before analysis;

IV.D.4. Conduct sample analysis; and

IV.D.5 Track and control the process of sampling, shipment and analysis by using appropriate chain-of-custody procedures.

IV.E. GROUNDWATER SURFACE ELEVATION

MES shall determine the elevation of the groundwater surface at each well each time the groundwater is sampled, in accordance with Permit Condition IV.G.2.

IV.F. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Permit Condition IV.G, MES shall use the following procedures:

IV.F.1 A Parametric Analysis of Variance (ANOVA) shall be used to statistically evaluate the monitoring results, provided the following conditions are met:

a. The number of data points below the Practical Quantification Limit (PQL) for a particular parameter or constituent, as defined in Permit Attachment 5, is less than or equal to fifteen (15) percent of the total number of data points to be evaluated;

b. The distribution of the data, as defined by the Shapiro-Wilk Test, is normal; and

c. The variance between the wells, as defined by Levene's Test, is equal.

IV.F.2. If the conditions in Permit Condition IV.F.1 are not met, MES shall use a non-parametric Analysis of Variance to statistically evaluate the monitoring results.

IV.F.3. MES shall determine the background groundwater quality for a monitoring parameter or constituent based on data from the current sampling event and the previous three quarterly sampling events of the background upgradient well.

IV.F.4. MES shall conduct the statistical procedures described in Permit Conditions IV.F.1, 2 and 3 and in Permit Attachment 5 in accordance with the procedures set forth in the U.S. EPA Document "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance", March 2009 (EPA 530-R-09-007).

IV.F.5. In performing statistical analyses of groundwater monitoring data, MES shall:

a. Handle data points below the PQL ("nondetect data") in a manner consistent with the recommendations provided in the guidance document referenced in Permit Condition IV.F.4; and

b. In the report of results required by Permit Condition IV.H.2, identify the method used for handling nondetect data and provide a justification for why the method was chosen.

IV.F.6. MES may use an alternative statistical method instead of the method described under Permit Conditions IV.F.1 through 4 provided that:

a. The new method meets the requirements of COMAR 26.13.05.06-3, and

b. MES proposes the method, together with the reason for change, to the LMA for review and approval before it is used, and the LMA approves use of the alternative method.

IV.G. MONITORING PROGRAM AND DATA EVALUATION

IV.G.1. MES shall collect, preserve, and analyze samples pursuant to Permit Condition IV.D.

IV.G.2. MES shall determine groundwater quality at each monitoring well at the compliance point semi-annually during the post-closure care period. MES shall express the groundwater quality at each monitoring well in a form appropriate for the determination of statistically significant increases (i.e., means and variances).

IV.G.3. MES shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

IV.G.4. MES shall determine whether there is a statistically significant increase over the background value for each parameter or constituent identified in Permit Condition IV.C each time groundwater quality is determined at the compliance point wells. In determining whether such an increase has occurred, MES shall compare the groundwater quality at each monitoring well specified in Permit Condition IV.B.1 with the background, in accordance with the statistical procedures specified in Permit Condition IV.F.

IV.G.5. MES shall perform the evaluations described in Permit Condition IV.G.4 within 30 days after completion of sampling and laboratory analysis from the last replicate taken for that semi-annual event.

IV.H. RECORD KEEPING AND REPORTING

IV.H.1. MES shall enter into the facility operating record all monitoring, testing, and analytical data obtained in accordance with Permit Condition IV.G. MES shall include in the data all computations, calculated means, variances, Shapiro-Wilk Test results, Levene's test results and parametric and non-parametric Analysis of Variance results, and any similar critical information for an alternative statistical method employed in accordance with Permit Condition IV.F.5.

IV.H.2. MES shall perform the groundwater monitoring required by Permit Conditions IV.G.2 and IV.G.3 and submit the analytical results from the monitoring and the

results of the initial statistical analyses required by Permit Condition IV.G.4 to the LMA in accordance with the following schedule:

First Semi-Annual Monitoring Event – MES shall:

- Collect replicate 1 in January;
- Collect replicate 2 in February;
- Collect replicate 3 in March;
- Collect replicate 4 in April;
- Obtain analytical results no later than May 31; and
- Submit Groundwater Monitoring Report to LMA by the first business day on or after June 18.

Second Semi-Annual Monitoring Event – MES shall:

- Collect replicate 1 in July;
- Collect replicate 2 in August;
- Collect replicate 3 in September;
- Collect replicate 4 in October;
- Obtain analytical results no later than November 30; and
- Submit Groundwater Monitoring Report to LMA by the first business day on or after December 18.

IV.H.3. If MES determines, pursuant to Permit Condition IV.G, that there is a statistically significant increase above the background values for chromium or hexavalent chromium in a well designated as a downgradient well, MES shall either:

a. Attempt to demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation in accordance with the requirements of Permit Condition IV.H.4, or
b. Comply with the requirements of Permit Condition IV.H.6.

IV.H.4. If MES intends to make the demonstration authorized by Permit Condition IV.H.3.a, MES shall:

a. Within seven (7) days of determining that there is a statistically significant increase, notify the LMA in writing that MES intends to make such a demonstration;

b. Within 90 days of determining that there is a statistically significant increase:
   i. submit a report to the LMA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation, or from natural variation in the groundwater; or

ii. notify LMA that MES was unable to make this demonstration;

c. Within 90 days of determining that there is a statistically significant increase, submit to the LMA an application for a permit modification to make any appropriate changes to the detection monitoring program at the facility; and

d. Continue to monitor in accordance with the detection monitoring program at the facility.

IV.H.5. If MES attempts to make the demonstration authorized by Permit Condition IV.H.3.a but is unsuccessful in doing so, MES shall take the actions required by Permit Condition IV.H.6, except that the deadline for the requirement of Permit Condition IV.H.6.e shall be within 90 days of the date that MES notifies the LMA that MES was unable to make the attempted demonstration.

IV.H.6. If MES determines, pursuant to Permit Condition IV.G, that there is a statistically significant increase above the background values for any of the parameters or constituents specified in Permit Condition IV.C, and MES has not elected to follow the requirements of Permit Condition IV.H.4, MES shall:

a. Within seven (7) days of determining that there is a significantly significant increase, notify the LMA in writing of that fact, and include in the notification an indication of what parameters or constituents have shown statistically significant increases;

b. Immediately sample the groundwater in all wells and determine the concentration of all constituents identified in Appendix IX of 40 CFR 264;

c. Establish the background values for each Appendix IX constituent found in the groundwater;

d. Determine constituents that will form the basis for compliance monitoring in accordance with the requirements of COMAR 26.13.05.06-4H(3);

e. Unless exempted under COMAR 26.13.05.06-4H(6), within 90 days of determining that there is a significantly significant increase, submit to the LMA an application for a permit modification to establish a compliance monitoring program, with the following information being included in the application:

i. An identification of the concentration of each Appendix IX constituent found in the groundwater at each monitoring well at the compliance point;

ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of compliance monitoring as described in COMAR 26.13.05.06-5;

iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of compliance monitoring as described in COMAR 26.13.05.06-5; and

iv. For each hazardous constituent found at the compliance point, a proposed concentration limit, or notice of intent to seek an alternate concentration limit for a hazardous constituent; and

f. Submit a corrective action feasibility plan to the LMA within 180 days, unless not required to do so under COMAR 26.13.05.06-4H(5)(b).

IV.H.7. If there is a statistically significant increase in the concentration in downgradient wells of constituents or indicator parameters identified in Permit Condition IV.C.1, other than chromium or hexavalent chromium, the LMA may require MES to take the actions required under Permit Condition IV.H.3 with respect to those constituents or parameters if the LMA concludes that the increase presents a significant risk to human health or the environment.

IV.I. ASSURANCE OF COMPLIANCE

MES shall ensure that necessary groundwater monitoring and corrective action measures are taken during the term of the permit to achieve compliance with the groundwater protection standard under COMAR 26.13.05.06-1A.

IV.J. REQUEST FOR PERMIT MODIFICATION

If MES or the LMA determines that the detection monitoring program no longer satisfies the requirements of the regulations, MES shall, within 90 days of the determination, submit an application for a permit modification to make any appropriate changes to the program which will satisfy the regulations.

PART V
STORAGE IN TANKS

V.A. GENERAL PROVISIONS

V.A.1. MES may store chromium contaminated liquids generated on-site for periods of time in excess of 90 days in the above-ground tank described in Permit Condition V.A.3 before the waste is shipped off-site for final treatment and disposal, subject to the terms of this permit.

V.A.2. MES shall not store more than 20,000 gallons of hazardous waste in the tank described in Permit Condition V.A.3.

V.A.3. This permit authorizes storage of hazardous waste in the above-ground tank at the facility meeting the following description:

Tank Characteristics:

Facility tank designation: Influent storage tank, Tank T-101.

Tank manufacturer and model: Xerxes Model No. 1221F.

Date of manufacture: March, 1998.

Manufacturer's stated tank capacity: 21,573 gallons.

Material of construction: Fiberglass reinforced plastic (isophthalic resin).

Nominal tank dimensions (interior): 12' diameter x 25.5' high.

Secondary containment: In excess of 22,000 gallons, provided by a concrete containment dike 22'x30'x4.5' high, coated with coal tar epoxy and provided with an additional collection sump.

Tank Location:

The tank is located in the eastern part of the Hawkins Point Landfill property, near the leachate storage and transfer area, as shown in Figure 1.1 included in Permit Attachment 1.

V.B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION

V.B.1. MES may use the tank system described in Permit Condition V.A to store landfill leachate and wastewaters that are hazardous only due to the characteristics of corrosivity (D002) and chromium toxicity (D007).

V.B.2. The generation sources of the waste identified in Permit Condition V.B.1 shall be limited to leachate from Hawkins Point Areas 2, 3 and 5, and wash water generated at the Hawkins Point Landfill (EPA ID No. MDD 000731356).

V.B.3. MES is prohibited from storing hazardous waste that is not identified in Permit Conditions V.B.1-V.B.2, except as otherwise authorized by COMAR 26.13.

V.C. SECONDARY CONTAINMENT

V.C.1. MES shall operate and maintain the secondary containment system of the tank described in Permit Condition V.A.3 in accordance with the requirements of COMAR 26.13.05.10-4B.

V.C.2. MES shall remove spilled or leaked waste and accumulated precipitation from the secondary containment system within 24 hours, or as otherwise provided in COMAR 26.13.05.10-4C.

V.D. OPERATING REQUIREMENTS

V.D.1. MES shall not place hazardous wastes or treatment reagents in the tank systems if they could cause a tank, its ancillary equipment, or a containment system to rupture, corrode, leak, or otherwise fail. (COMAR 26.13.05.10C(1))

V.D.2. MES shall:

a. prevent spills and overflows from the tank or containment systems as required by COMAR 26.13.05.10C(2);

b. maintain the tank high-level alarm in an operational condition at all times;

c. conduct transfers into or out of the tank manually to enable the operator to stop the flow of waste in the event of a spill or leak; and

d. begin transferring waste into the tank only after verifying that the tank has adequate remaining capacity to accommodate the waste, through evaluation of inventory records or other appropriate means.

V.E RESPONSE TO LEAKS OR SPILLS

In the event of a leak or spill from the tank system or secondary containment system, or if the tank system or secondary containment system becomes unfit for continued use, MES shall remove the system from service immediately and complete the following actions: (COMAR 26.13.05.10-6)

V.E.1 Stop the flow of hazardous waste into the system and inspect the system to determine the cause of the release.

V.E.2 Remove waste from the system within 24 hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If MES finds that it will be impossible to meet this time period, MES shall notify the LMA, demonstrate that a longer time period is required, and remove at the earliest practicable time as much.of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the

system. If the collected waste is a hazardous waste, it must be managed in accordance with all applicable requirements of COMAR 26.13.

V.E.3. Contain visible releases to the environment. MES shall immediately conduct a visual inspection of all releases to the environment and based on that inspection:

V.E.3.a. Prevent further migration of the leak or spill to soils or surface water; and

V.E.3.b. Remove and properly dispose of any visible contamination of the soil or surface water.

V.E.4. Close the system in accordance with COMAR 26.13.05.10-7, unless the following actions are taken:

V.E.4.a. For a release caused by a spill that has not damaged the integrity of the system, MES shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.

V.E.4.b. For a release caused by a leak from the primary tank system to the secondary containment system, MES shall repair the primary system prior to returning it to service.

V.E.4.c. For a release to the environment caused by a leak from a component of the tank system that is below ground, is not readily available for visual inspection, or does not have secondary containment, MES shall provide this component with secondary containment that meets the requirements of COMAR 26.13.05.10-4 before the component is returned to service.

V.E.4.d. If MES replaces a component of the tank system to eliminate a leak, that component shall satisfy all applicable requirements for new tank systems or components in COMAR 26.13.05.10-3 and .10-4.

V.E.5. For all major repairs to eliminate leaks to restore the integrity of the tank system, MES shall obtain a certification by an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system, and submit the certification to LMA as required by Permit Condition V.G.3, before returning the system to service. Some examples of major repairs are installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment system,

V.F. INSPECTION SCHEDULES AND PROCEDURES

V.F.1 MES shall inspect the tank systems, in accordance with the Inspection Schedule, included in Permit Attachment 6, and shall complete the items in Permit Conditions V.F.2 and V.F.3 as part of those inspections.

V.F.2. MES shall inspect overfill controls for the tank at least once per week, with no more than 8 days elapsing between inspections. (COMAR 26.13.05.10D(1))

V.F.3. MES shall inspect the following components of the tank systems once each operating day: (COMAR 26.13.05.10D(2))

V.F.3.a. Aboveground portions of the tank system to detect corrosion or releases of waste;

V.F.3.b. Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges) to ensure that the tank system is being operated according to its design;

V.F.3.c. Level of waste in the tank; and

V.F.3.d. Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

V.F.4. MES shall assess the condition of the tank systems, in accordance with the schedule and procedures described in Permit Attachment 6, Post-Closure Inspections and Maintenance. (COMAR 26.13.05.10D)

V.F.5. MES shall document compliance with Permit Conditions V.F.2, V.F.3, and V.F.4 and place this documentation in the operating record for the facility. (COMAR 26.13.05.10D(5))

V.F.6. MES shall ensure that the tank maintains sufficient structural integrity to contain the waste it is used to manage.

V.F.7. MES shall conduct a periodic assessment of the tank system in accordance with the following requirements:

V.F.7.a. The tank assessment shall determine whether cracks, leaks, corrosion, erosion or other problems may prevent compliance with Permit Condition V.F.6;

V.F.7.b. The periodic assessment shall be conducted at least once every two years;

V.F.7.c. No more than 25 months shall elapse between assessments;

V.F.7.d. The tank assessment shall be conducted sometime during February of each odd-numbered year, unless an alternate schedule is approved by the LMA;

V.F.7.e. A report of the results from each tank system assessment shall be compiled and maintained as part of the facility operating record for at least three years; and

V.F.7.f. MES shall submit a copy of the tank assessment report to the LMA no later than 60 days after the date that field work associated with the tank assessment begins, unless a later deadline is agreed to by the LMA.

V.G. RECORD KEEPING AND REPORTING

V.G.1. MES shall report to the LMA, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment. (COMAR 26.13.05.10-6A(6)) A leak or spill of one pound or less of waste, that is immediately contained and cleaned up, need not be reported.

V.G.2. Within 30 days of detecting a release to the environment from the tank system or secondary containment system, MES shall report the following information to the LMA: (COMAR 26.13.05.10-6A(6)(b))

V.G.2.a. Likely route of migration of the release;

V.G.2.b. Characteristics of the surrounding area, including soil type and composition, geology, and hydrogeology;

V.G.2.c Results of any monitoring or sampling conducted in connection with the release, or, if such results will not be available by the 30-day deadline, a schedule of when the results will be available;

V.G.2.d. Proximity to downgradient drinking water, surface water, and populated areas; and

V.G.2.e. A description of response actions taken or planned.

V.G.3. MES shall submit to the LMA all certifications required under Permit Condition V.E.5 not later than five days before returning the tank system to use. (COMAR 26.13.05.10-6A(9))

V.G.4. MES shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system. (COMAR 26.13.05.10-3B(11))

V.G.5. MES shall maintain at the facility a record of the results of all leak tests and integrity tests conducted.

V.H. TANK SYSTEM CLOSURE AND POST-CLOSURE REQUIREMENTS

V.H.1. At closure of the tank system, MES shall remove all hazardous waste and hazardous waste residues from the system, and close the tank system in accordance with a detailed closure plan to be submitted by MES and approved by LMA in accordance with Permit Conditions V.H.2 through V.H.4 (COMAR 26.13.05.10-7A)

V.H.2. At least 180 days before the date MES intends to begin closure of the tank system, MES shall submit a detailed Closure Plan for the LMA's review and approval, including a sampling and analysis plan to verify effectiveness of closure activities.

V.H.3. MES shall ensure that the detailed closure plan required by Permit Condition V.H.2 includes at least the following elements:

V.H.3.a. The steps necessary to perform partial and/or final closure of the tank system;

V.H.3.b. A description of how each component of the tank system will be closed;

V.H.3.c. A description of how final closure of the tank system will be conducted, identifying the maximum extent of operations during the active life of the tank system;

V.H.3.d. An estimate of the maximum inventory of hazardous wastes ever onsite over the active life of the tank system and a description of the methods used to remove, transport, treat, store, or dispose of all hazardous wastes;

V.H.3.e. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils;

V.H.3.f. A description of methods employed to decontaminate structures and equipment that will remain on site after closure;

V.H.3.g. Identification of decontamination agents to be used, including chemical and physical specifications of the agents;

V.H.3.h. Specific safety measures to be taken to control spread of contamination during the closure activity and to protect human health and the environment;

V.H.3.i. A detailed description of other activities necessary during the closure period to ensure that the closure satisfies the closure performance standard of COMAR 26.13.05.07B; and

V.H.3.j. A schedule for closure of each part of the tank system and for the final closure of the tank system.

V.H.4. MES shall ensure that the sampling and analysis plan required by Permit Condition V.H.2 is adequate to verify the effectiveness of decontamination activities, and includes, at a minimum, the following components:

V.H.4.a. A listing and justification of the sampling and analytical methods to be employed, with MES either selecting and proposing appropriate methods from the EPA Publication Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846, latest edition), or proposing and employing equivalent methods acceptable to the LMA;

V.H.4.b. A description of quality assurance and quality control procedures associated with the selected sampling and analysis methods;

V.H.4.c. A definition and justification of a Target Compound List (TCL) for which the verification samples will be analyzed;

V.H.4.d. Identification and justification of a threshold level for each compound on the TCL list that determines a "clean" or "contaminated" condition; and

V.H.4.e. Number of samples to be taken, and location, media and substances to be sampled.

V.H.5. MES shall decontaminate all waste handling areas and the equipment that is to remain onsite after closure, in accordance with the detailed closure plan submitted by MES and approved by the LMA in accordance with Permit Conditions V.H.2 through V.H.4.

V.H.6. Within 60 days of the completion of the closure activities, MES shall submit to the LMA:

V.H.6.a. A closure report containing results of the activities conducted in compliance with each component of the approved closure plan, including, but not limited to, the verification results demonstrating a clean closure of the tank system and a certification of closure as required by COMAR 26.13.05.07F, or

V.H.6.b. A written request to extend the 60-day deadline, including with the request the reason for the request and a proposed timeline for completion and submission of the closure report.

V.H.7. If MES cannot demonstrate that all contaminated soils and groundwater can be practically removed or decontaminated in accordance with the Closure Plan, MES shall inform the LMA within 60 days of the completion of the closure activities and, within 90 days of

completion of closure, submit a Post-Closure Plan to the LMA for review and approval, to perform post-closure care in accordance with the closure and post-closure care requirements of COMAR 26.13.05.14J. (COMAR 26.13.05.07H and .10-7C).

V.I. SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

V.I.1. MES shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless one of the three conditions specified in COMAR 26.13.05.10-1A(1)(a)-(c) are met.

V.I.2. MES shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be build upon, as required in Tables 2-1 to 2-7 of the National Fire Protection Association's "Flammable and Combustible Liquids Code 30" (1990) (COMAR 26.13.05.10-1A(2))

V.J. SPECIAL TANK PROVISIONS FOR INCOMPATIBLE WASTES

V.J.1. MES may not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system unless the conditions specified in COMAR 26.13.05.10-1B(1) are met.

V.J.2. MES may not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material unless the conditions specified in COMAR 26.13.05.10-1B(2) are met.

PART VI
PERMIT ATTACHMENTS

Permit Attachments, numbered 1 through 8, include sections of the MES permit application that carry their own number or letter designations. Permit Attachments are enforceable parts of this permit. However, if there is a discrepancy between a permit condition and contents of a permit attachment, the permit condition will prevail.

Permit Attachment Number and Title	Number of Pages	Application Date, Section (§) & Page Numbers
1. Waste Analysis Plan	16	May 2012 § 1, pp. 1-1 to 1-16
2. Site Safety and Health Plan	224	January 2012 § 6.0, (see Note below)
3. Personnel Training Outline	12	January 2012 § 5.0, pp. 5-1 to 5-12
4. Site Security and Contingency Plan	14	May 2012 § 4.0, pp. 4-1 to 4-14
5. Groundwater Monitoring Program	20	March 2012 § 2.0, pp. 2-1 to 2-20
6. Post-Closure Inspections and Maintenance	9	May 2012 § 3.0, pp. 3-1 to 3-9
7. Waste Storage Process Information	3	May2012 § 7.0, pp. 7-1 to 7-3
8. Permit Application Part A	10	May 2012 Part A forms in 10 pages

Note: Due to the size, the Site Safety and Health Plan is not attached here. It is kept with MES' January 2012 Application in LMA's offices in Baltimore. MES is also required to keep a copy of the Plan at the site with the copy of this permit. (Permit Condition I.F)

Horacio Tablada, Director
Land Management Administration

Dec. 10, 2012
Date Signed

ATTACHMENT 1

WASTE ANALYSIS PLAN

CHS PERMIT APPLICATION SECTION 1

WASTE ANALYSIS PLAN

1.1 INTRODUCTION/EXECUTIVE SUMMARY

The Hawkins Point Hazardous Waste Facility, located at 5501 Quarantine Road, Baltimore, MD 21226, is owned by the Maryland Port Administration (MPA) and is permitted by the Maryland Department of the Environment (MDE) and the U.S. Environmental Protection Agency (USEPA). Maryland Environmental Service (MES) performs post-closure care of landfills located in Areas 2, 3, and 5 at the facility, which contain Chromium Ore Processing Residue (COPR). Chromium-contaminated leachate generated in cells in these Areas is collected by MES and hauled offsite by a licensed hazardous waste company to a licensed disposal facility. Area 4 at the facility is also maintained by MES, but it was never used for landfilling operations and does not include any hazardous materials.

This permit application is for the reissuance of the existing CHS permit dated January 28, 2002, through January 27, 2007, as defined below:

1. Areas 2 and 3: Continue post-closure care activities, including inspections, leachate management, and groundwater monitoring.

2. Area 4 and 5 Landfill: No change in authorization requested. The area will continued to be maintained per post-closure care requirements of this CHS permit as outlined in Sections 2 and 3.

3. Waste Water Treatment Unit: The onsite wastewater treatment plant (WWTP) ceased operation and was dismantled in 2000. MES uses the aboveground storage tank associated with the former WWTP for the collection of landfill leachate, which is transported offsite for disposal at a permitted treatment and disposal facility. These leachate management practices will continue under the existing CHS permit.

4. Following cessation of the WWTP operation, the National Pollutant Discharge Elimination (NPDES) permit was terminated on January 28, 2004. The Hawkins Point facility currently operates under a General Discharge Permit for Storm Water Associated with Industrial Activities, dated December 1, 2002, which addresses the discharge of non-impacted surface water runoff from the site.

1.2 GENERAL INFORMATION

For a detail of solid and hazardous waste management units, see Figure 1.1, below. Photographic documentation of the landfill and all associated buildings can be found in Figure 1.2, below.

1.2.1 Area 2 and Area 3

From 1975 to 1979, COPR materials were disposed of in three clay-lined cells located in Areas 2 and 3. These cells were closed in 1980.

Areas 2 and 3 contain COPR cells constructed by MPA that are managed by MES in post-closure care status. Leachate generated from Areas 2 and 3 is managed by a leachate collection system constructed in the late 1970s and rehabilitated in 2002. The collected leachate is conveyed to a belowground leachate collection system, which transfers the leachate to an underground collection vault before it is pumped to and temporarily stored in the aboveground tank. The stored leachate is then transported offsite for disposal at a permitted facility.

Since February 28, 1983, MES has performed groundwater monitoring using perimeter wells installed in Areas 2 and 3 and has managed overland surface water flow with a surface water collection swale. This non-impacted surface water is discharged to Thomas Cove.

During January 1983, Cell 40, located within the Area 3 disposal cell, received COPR. The cell was operated by MES for a short period of time and, due to economic reasons, was then closed. COPR materials placed within Cell 40 were removed and transported to Fondessy, Ohio, for disposal at a permitted facility. Cell 40 has not been used for material disposal since it was taken out of service. In 2011, as a component of a capital improvement project at Hawkins Point, the area of Cell 40 was regraded, and the berm surrounding Cell 40 was removed.

There are no documented spills or releases from these areas.

1.2.2 Area 4

During construction of Area 5, two temporary leachate-holding lagoons were located in Area 4. These temporary lagoons were lined basins used for storing surface water collected during landfill construction. They were removed when landfill construction was completed in 1993.

Area 4 has also been identified as a location where a "paint sludge" material had been observed, as reported in a June 27, 1985, Assessment of Continuing Releases Report. This sludge storage area pre-dates landfill closure, and there no indication that the sludge remains onsite. It was likely removed during Area 5 construction activities.

There are no documented spills or releases from these former lined stormwater basins.

1.2.3 Area 5

Area 5 was used for the disposal of COPR and demolition debris from AlliedSignal, Inc. (now Honeywell). Area 5 comprises 10 waste cells (numbered 1–3 and 5–11; there is no Cell 4) containing COPR and chromium-contaminated soil, trash, and construction debris from demolition of the former AlliedSignal Baltimore Works Plant.

MES operated Area 5 while it was active, from approximately 1980 to 1994. In January 1983, MES began accepting COPR from the Baltimore Works facility owned by AlliedSignal. In 1985, the Baltimore Works facility closed. As part of closure, portions of the Baltimore Works facility were dismantled, yielding chromium-contaminated debris consisting of structural beams, concrete, brick, asbestos, soil (up until May 8, 1980), and other chromium-contaminated debris which was disposed in Area 5 until 1993. An estimated 451,450 tons of COPR and demolition materials were disposed of in Area 5.

MES completed closure activities for Area 5 on May 20, 1994, and has since managed the closed landfill in post-closure care status. MDE issued Post-Closure Permit A-264 to MES on October 15, 1995. The permit had an expiration date of 1998; however, the permit remained in effect until a new permit was issued by MDE to MES on January 28, 2002. A condition of the permit is the performance of quadruplicate compliance monitoring of seven wells conducted on a quarterly basis for Area 5. There have been no violations of the permit since it was first issued in 1995. Presently, the only waste handled from Area 5 is collecting leachate from the landfill through the belowground leachate collection system, which conveys the leachate to an underground collection vault before it is pumped to and temporarily stored in an aboveground tank. The stored leachate is then transported offsite for disposal at a permitted facility.

Since 1999, MES has been permitted to store the landfill leachate in a 21,573-gallon aboveground tank, where all of the leachate collected at the Hawkins Point Landfill is combined, including leachate from Areas 2, 3, and 5. The leachate is conveyed via underground lines to an underground collection vault, from where it is then pumped into the 21,573-gallon aboveground storage tank. The leachate is transported offsite by a licensed hauler for treatment and disposal at a permitted facility.

MES is permitted to store chromium-containing leachate in the aboveground storage tank and installed a treatment system in 1999 that was operated on a pilot basis for a one-year period. This system was removed from service because treatment of the leachate did not consistently achieve the chromium reduction required to meet effluent discharge limitations. There are no plans to return the treatment system into service.

1.3 LEACHATE CHARACTERIZATION

The leachate collected at Hawkins Point is derived from water moving through COPR, which contains five main elements—calcium, iron, aluminum, magnesium, and chromium—plus the balance of oxygen. Four of these elements (aluminum, chromium,

iron, and magnesium) originate from the raw chromite ore as (Mg^{2+}, Fe^{2+}) O $(Cr^{3+}, Al^{3+}, Fe^{3+})_2 O_3$; the calcium originates from calcined lime that was added during processing and roasting of the ore. The major components of the chrome ore tailings are listed in Table 1.1.

The COPR is classified as a hazardous waste under Federal Regulation 40 CFR Part 261 and State of Maryland Regulations COMAR 26.13 because the material exhibits the characteristic of corrosivity (D002), and Toxicity Characteristic Leaching Procedure (TCLP) test results contain concentrations of chromium (D007) that exceed the regulatory limit. The landfill leachate collected from Areas 2, 3, and 5 is also classified as hazardous waste due to corrosivity and TCLP toxicity characterization for chromium. Representative TCLP analytical data from analysis of leachate samples are detailed in Table 1.1 and Figure 1.3 (below).

Characterization of the landfill leachate was performed by The Environmental Quality Company (EQ) following Standard Methods and EPA Approved Test Methods.

1.3.1 Waste Characterization

Onsite soils are periodically excavated as a result of specific operation and maintenance (O&M) activities. The composition of the excavated materials typically includes sand, small stones, rocks, silty clay, and sediments. Samples of excavated materials are analyzed at an approved and certified contract laboratory to determine if they contain chromium at concentrations that would result in them being classified as a hazardous waste under 40 CFR Part 261 or COMAR 26.13. Any materials proved to be hazardous waste will be handled by a certified hazardous waste hauler and shipped to a treatment, storage, and disposal facility.

1.4 WWTP CLOSURE AND LEACHATE CONTAINMENT TANK

The former WWTP was closed and dismantled with the exception of the 21,573-gallon aboveground fiberglass tank that is currently used for the storage of leachate and wash-water collected from Areas 2, 3, and 5 (EPA ID # MDD 000731356). As required under COMAR 26.13.05.10, the leachate collection and tank system is equipment with controls to prevent spills and overflows (e.g., level-sensing devices, high-level alarms, and automatic feed cutoff) and with secondary containment. The tank is inspected every operating day to detect visible corrosion or visible releases of leachate from the tank. As required under COMAR 26.13.07.02–3; the tank has an inspection completed each odd-numbered year under the supervision of a licensed and registered Professional Engineer. Copies of the inspection reports are maintained in the Hawkins Point office trailer. When necessary, MES may use temporary storage tanks to contain leachate. When in use these temporary tanks will be equipped with the required spill control and secondary containment, and all liquid within the temporary tanks will be emptied and cleaned every ninety (90) days.

Figure 1.1—Hawkins Point Waste Management Units

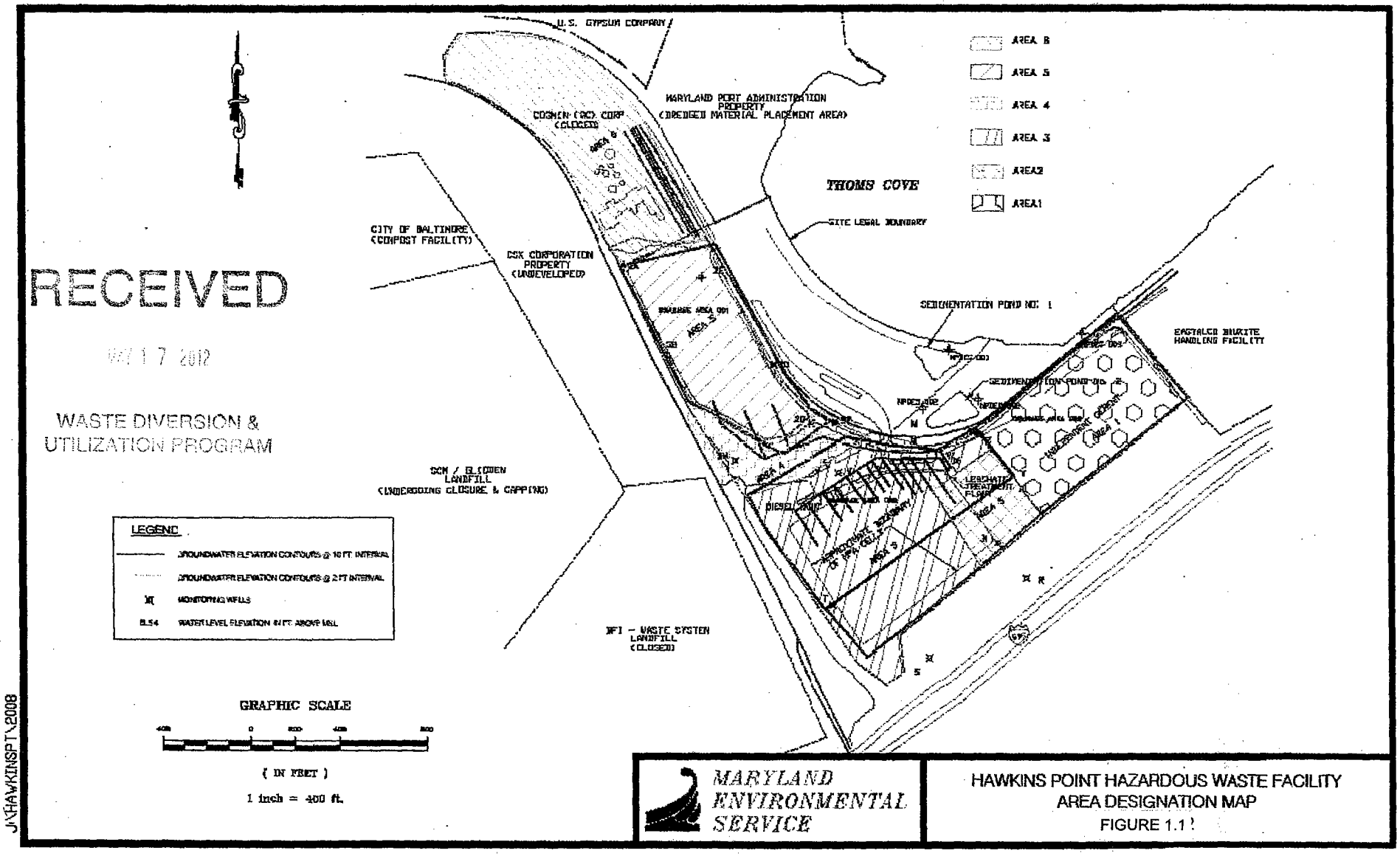

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Table 1.1—COPR Constituents

Constituent	Average Percent by Dry Weight
Calcium Oxide	38.8
Ferric Oxide	23.5
Aluminum Oxide	15.5
Magnesium Oxide	9.8
Total Chromium	4.8
Silicon Mono-Oxides	3.2
Sodium Peroxide	2.0
Hexavalent Chromium (Acid Soluble)	1.2
Hexavalent Chromium (Water Soluble)	0.2
Vanadium	0.2
Titanium	0.2
Manganese	0.2
Non-hazardous Undefined	0.4
	100.0

Figure 1.2a— Area 2

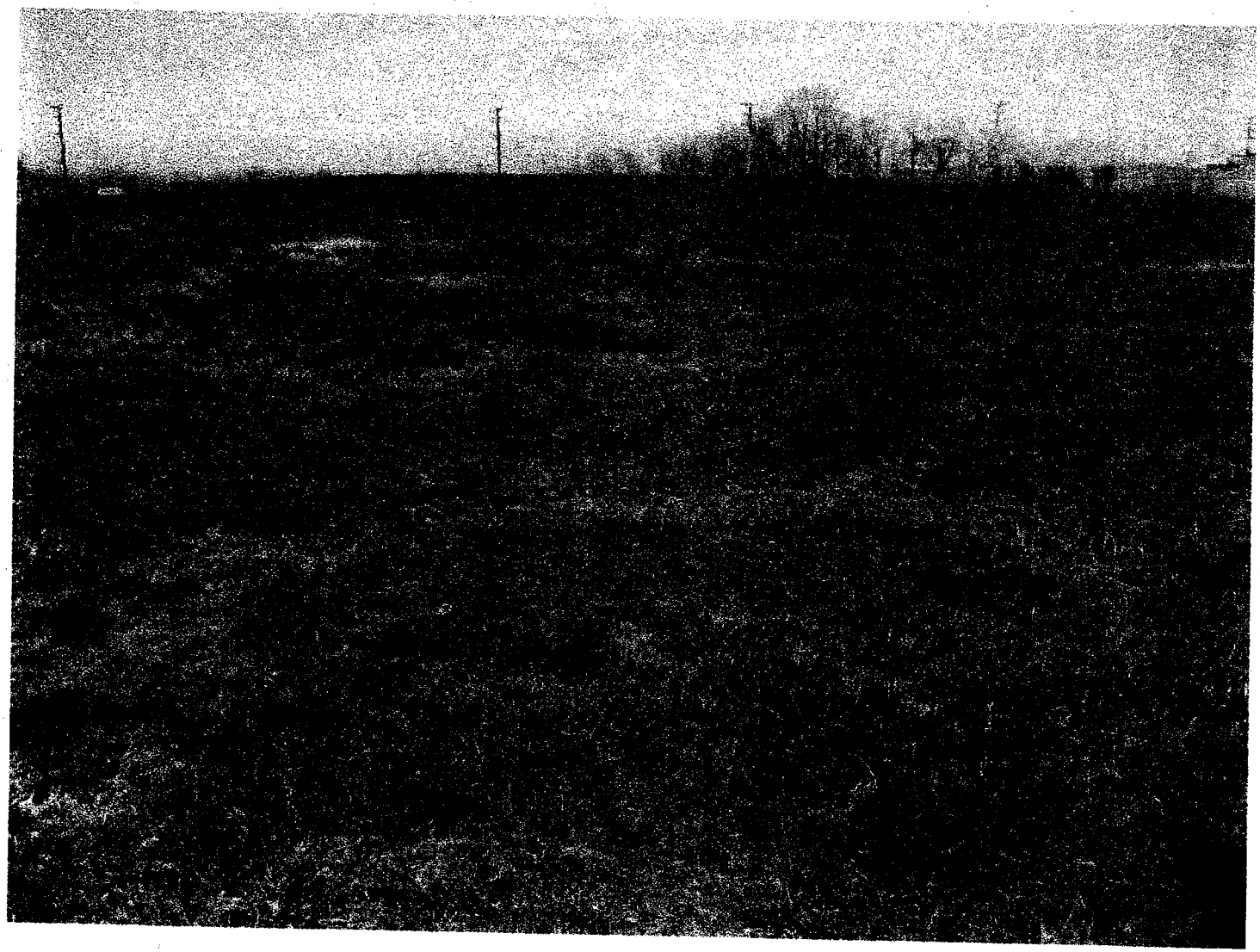


Figure 1.2b— Area 2

Figure 1.2c— Area 2 (center) & Area 3 (right)

Figure 1.2d— Area 4

Figure 1.2e— Area 5

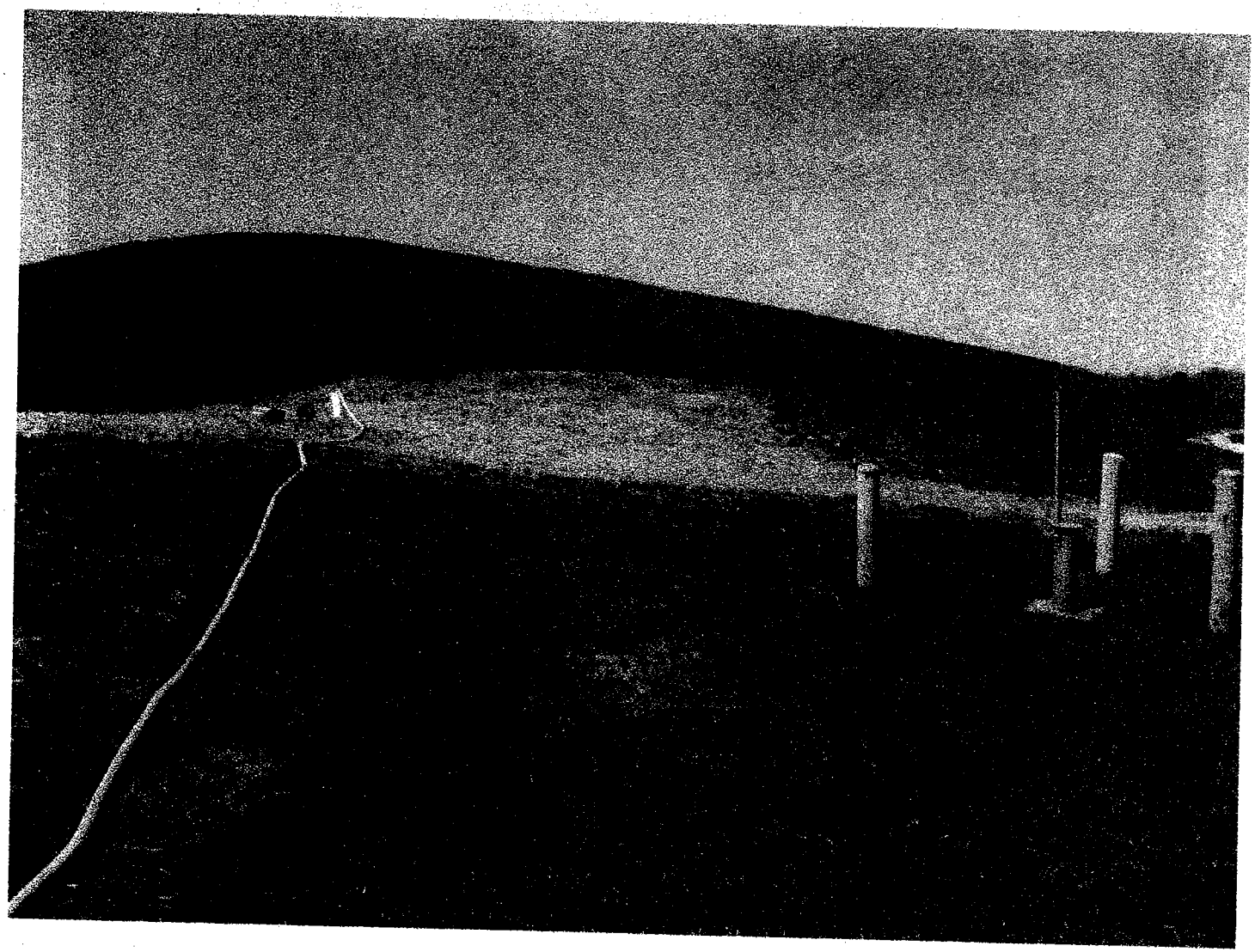


Figure 1.2f— Leachate Management & Collection Area (foreground), Former WWTP Building/Warehouse (left)

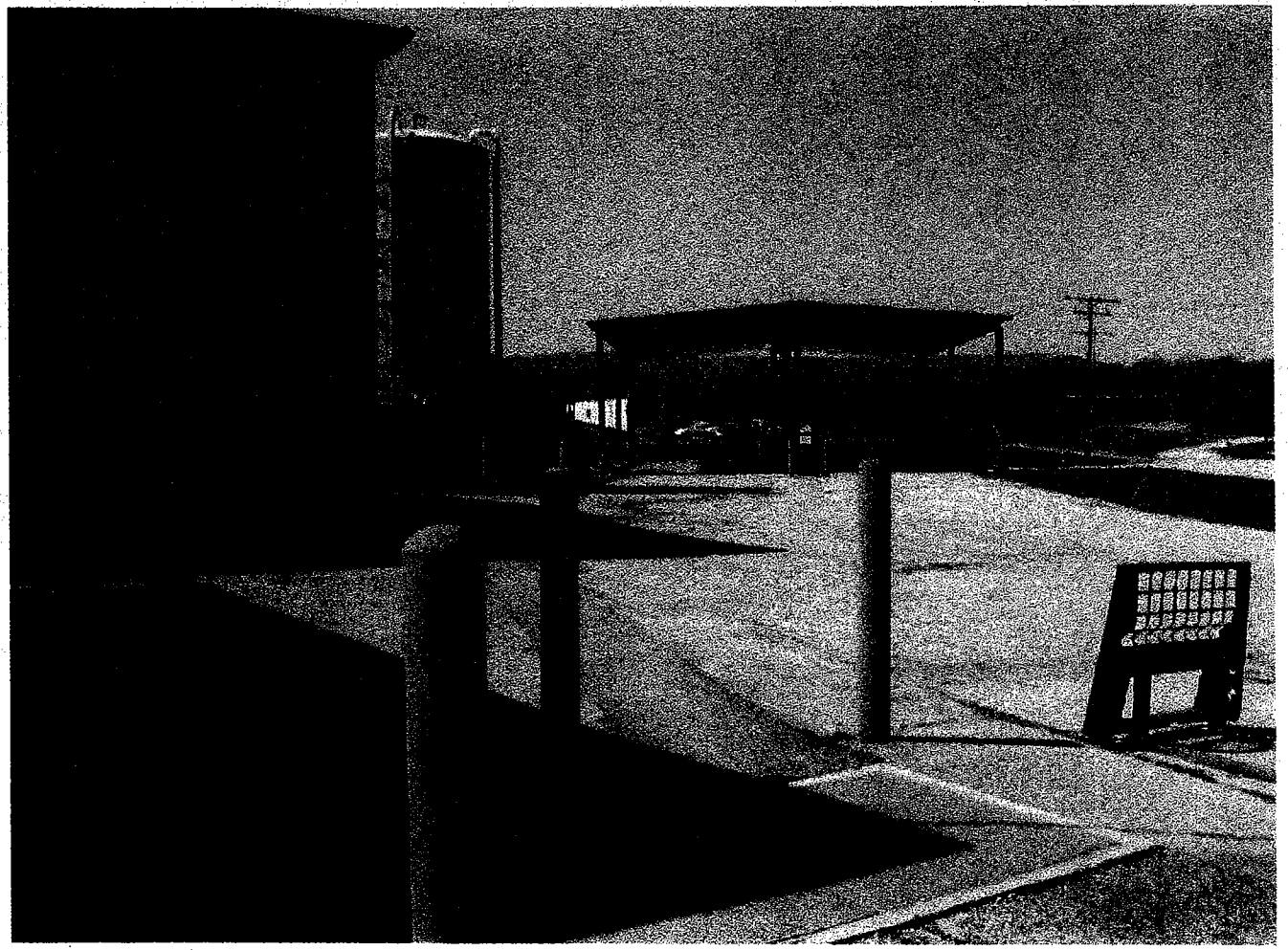


Figure 1.2g— Warehouse Inside

Figure 1.3—Certificate of Analysis Report

ENVIRITE OF OHIO, INC

CERTIFICATION ANALYSIS REPORT

Hawkinspoint Landfill
5501 Quarrantine Road
Baltimore, MD 21226

Report date: 4/5/05
Waste Stream#: Y2189r5
Sample Collection Date: 3/24/05
Date analysis complete: 4/5/05

Waste Description: Chromium Leachate.

Parameter	Results	
pH (as received)	12.8	S.U.
Total CN (as received)	<0.53	mg/Kg
TCLP Arsenic	<0.25	mg/l
TCLP Barium	<1.0	mg/l
TCLP Cadmium	<0.050	mg/l
TCLP Chromium	170	mg/l
TCLP Lead	<0.25	mg/l
TCLP Mercury	<0.0008	mg/l
TCLP Nickel	<0.50	mg/l
TCLP Selenium	0.22	mg/l
TCLP Silver	<0.080	mg/l

This analysis was performed for the sole and exclusive purpose of determining the acceptability of the waste treatment at Envirite, Inc. Envirite, Inc. makes no warranty, express or implied, as to the suitability of this analysis for any other use.

Analysis Approved by: _____
Laboratory Manager

cc: File

Addendum

The following Addendum to this permit application includes the references listed below, also detailed within Table 1.2:

1. Hawkins Point Hazardous Waste Landfill, Controlled Hazardous Substance (CHS) A-264 Permits. (1982-2002).

2. November 21, 2002 Correspondence from MDE to MES, RE: Summary of Hawkins Point Groundwater Monitoring Data.

3. July 31, 2002 Correspondence from MES to MDE, RE: Summary of Hawkins Point Groundwater Monitoring Data.

4. United States Environmental Protection Agency, Region III, Corrective Action Program, Final RCRA Site Visit Report, Maryland Environmental Service Hawkins Point Controlled Hazardous Substance Landfill (April 17, 2010).

5. Atlantic Coast Laboratories, Incorporated. (2006). Report of Analysis.

6. Maryland Environment Service. (2006). First Quarter Event Analytical Summary.

7. Maryland Environment Service. (1994). Hawkins Point Proposed NPDES Sample locations.

8. Maryland Environmental Service (1990). Statistical Analysis of Detection Monitoring Data of Quarantine Road Landfill

9. EBA Engineering, Inc. (1991). Soil Samples#2-4 Collected.

10. EBA Engineering, Inc. (1991). Field Report Job #1589.

11. Department of Health and Mental Hygiene. (1984). National Pollutant Discharge Elimination System Receipt.

12. Maryland Department of the Environment. (2003). Hawkins Point Discontinue NPDES Permit.

13. Maryland Environmental Service. (2004). Termination of MPA State Discharge Permit at Hawkins Point.

14. Penniman & Browne, Inc. (1980). Soil Descriptions.

15. Black & Veatch. (1985). Hydro-geologic Assessment Appendix O Area (Area 3 Hawkins Point Hazardous Waste Landfill).

16. Maryland Environmental Service Department of Natural Resource. (1980). Operation Manual for Hazardous Material Facility Hawkins Point Disposal Site No. 2.

17. Maryland Environmental Service Department of Natural Resource. (1982). Hawkins Point CHS Disposal Facility Operating Plan and Procedures.

18. Maryland Environmental Service. (1980). MES Operations Manual for Hazardous Material Facility Hawkins Point Disposal Site No. 2.

19. AlliedSignal, Inc. (1990). Airborne Chromium: Personal Sampling of MES Personnel for Total Chromium Exposure at Area 5 of Hawkins Point Landfill.

20. Black & Veatch. (1985). Hydro-geologic Assessment Appendix O Area (Area 5 Hawkins Point Hazardous Waste Landfill).

21. Penniman & Browne, Inc. (1980). Field Density Tests Hawkins Point.

22. (1997). CST Pilot Study Results: Hawkins Point.

23. The Hardin Group. (1983). Soil Exploration Boring #B-2A.

24. Hardin-Kight Associates. (1982). Soils Testing No. 11182.

25. Penniman & Browne, Inc. (1981). Field Density Tests Hawkins Point.

26. Penniman & Browne, Inc. (1981). Field Density Tests Hawkins Point Cell #3

27. Penniman & Browne, Inc. (1981). Field Density Tests Hawkins Point/ Md. Environmental.

28. Penniman & Browne, Inc. (1981).Field Density Tests Hawkins Point Hazardous Disposal Site 2.

29. Black & Veatch. (1983). Observation Well and Piezometer Location Plan.

30. Maryland Department of Natural Resources. (1990). Response to Events that Caused Crack on North End Area 5.

31. Maryland Department of Natural Resources. (1990). Area 5 Berm Repair on North End of Area 5.

ATTACHMENT 2

SITE SAFETY AND HEALTH PLAN

Note: Due to the size, the Site Safety and Health Plan is not attached here. It is kept with MES' January 2012 Application in LMA's offices in Baltimore. MES is also required to keep a copy of the Plan at the site with the copy of this permit. (Permit Condition I.F)

ATTACHMENT 3

PERSONNEL TRAINING OUTLINE

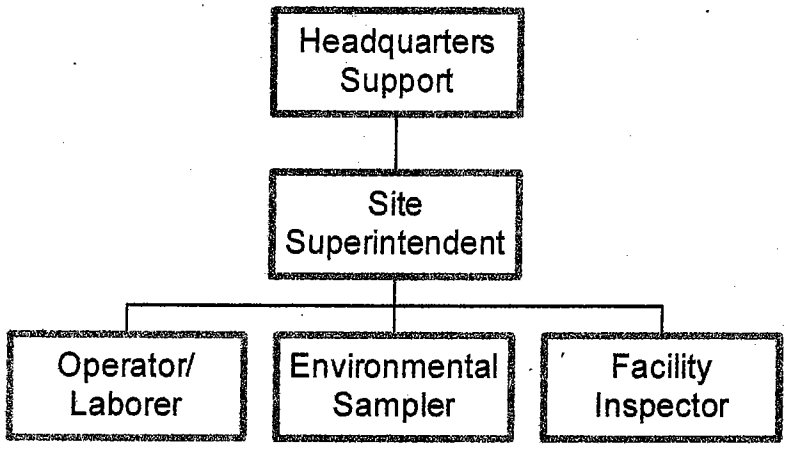
CHS PERMIT APPLICATION SECTION 5

PERSONNEL TRAINING OUTLINE

5.1 JOB TITLES AND DUTIES

The organization of supervisory personnel responsible for operations at the facility is shown in Figure 5.1. Job positions are described and the duties, qualifications, and responsibilities of each position are outlined in Section 5.5. Environmental-monitoring personnel, facility inspectors, and operators who are assigned to the Hawkins Point facility to perform jobs as required or needed will be trained and qualified according to the facility-training program.

Figure 5.1—Organization Chart



5.2 OUTLINE OF TRAINING PROGRAM

In order to provide the full range of training necessary for employees to safely perform their duties at the Hawkins Point Hazardous Waste Landfill, the training program includes classroom as well as on-the-job training. On-the-job training is conducted as the opportunities for the instruction arise and is conducted by the employee's immediate supervisor or the Site Supervisor. A list of the instructional items covered in the on-the-job training phase of the program is included in the job description summaries in Section 5.5.

For the classroom instruction, all facility employees are required to attend a 40-hour hazardous waste operator certification course and all supervisors are required to attend an 8-hour hazardous waste supervisor course both of which fulfill the OSHA 29 CFR 1910.120 training requirement. Each employee is required to maintain this certification by attending an 8-hour refresher course annually.

In addition to the OSHA hazardous waste operators training, each employee is required to become familiar with the Health and Safety Plan for Hawkins Point (see Section 6) and attend site safety training classes conducted by the MES Safety Division.

5.3 TRAINING CONTENT, FREQUENCY, AND TECHNIQUES

The initial MES site safety training of employees involves an intensive lecture and discussion presentation of the full content of the training material. The annual review course will follow a less formal approach and will primarily re-emphasize the information necessary for worker safety under normal and emergency conditions. Operational improvements developed during the ensuing year of experience will be presented at the annual training review courses.

The following material is included in MES site safety training:

Confined space entry
Standard first aid
Hazard communications standard
Material handling
Personnel protection equipment
Lifting safely
Hazardous materials
Employee safety standard
Fire extinguishers and fire safety
Electrical hazards
Adult CPR
Ventilation
Respiratory protection
Machinery hazards
Housekeeping
Car emergency repair
Power tools

5.4 IMPLEMENTATION SCHEDULE

All current employees have completed the classroom-training program. New employees and employees assigned to new positions requiring additional training must receive this training within six months of assignment. New and reassigned employees will not be permitted to work unsupervised until after the completion of training. All training records will be maintained at the MES headquarters by the Site Supervisor for a minimum of three years.

In order to guarantee that such employee receives the required annual review training, the Site Supervisor will establish a specific time of year for this purpose.

5.5 JOB DESCRIPTION SUMMARIES

5.5.1 Site Supervisor

Job Description:

1. Serve as the MES agent of responsibility of site.

2. Create a standard of excellence and professionalism at site.

3. Provide for the training of all facility personnel.

4. Ensure the health and safety of all facility personnel.

5. Direct any reasonable action necessary to protect the environment.

Responsibilities: Responsible for all operations and action of personnel at the facility including:

a. Recordkeeping.

b. Maintenance, inventory, and operation of equipment.

c. Upkeep and maintenance of grounds at and surrounding the facility.

d. Public relations at the facility, which includes conducting tours and providing information to citizens groups and organizations as needed.

e. Facilitate coordination and communication between design engineers, technicians, and regulators.

f. Facilitate coordination and communication between MES headquarters and Hawkins Point.

g. Conduct and review regular and thorough site inspections.

h. Implement the provisions of the HASP, the Contingency Plan, and the Post-Closure Plan and update and revise the plans as needed to improve the facility.

Training:

1. 40-Hour Health and Safety Training for Hazardous Waste and Emergency Response satisfying OSHA 29 CFR 1910.120.

2. Annual 8-Hour Refresher Training satisfying OSHA 29 CFR 1910.120.

3. 8-Hour Supervisor Training satisfying OSHA 29 CFR 1910.120.

4. Office Procedures:

   - General

- Personnel Management
- Budget Management
- Purchasing/ Inventory
- MES Site Safety Classes
- Hazardous Waste Manifest System
- Records

5. Operations Procedures:

- Facility operation/control
- Security
- Leachate management
- Facility Inspection
- Contingency plan implementation
- Decontamination

6. Maintenance Procedures:

- General Maintenance
- Sedimentation and Erosion Control
- Leachate Collection System

7. Equipment Operation and Maintenance Procedures:

- Decontamination/truck wash equipment
- Leachate-handling equipment
- Facility support equipment
- Safety equipment
- Spill control equipment
- Heavy equipment

8. Environmental Protection Program:

- Groundwater/surface water monitoring
- Contamination control

5.5.2 Environmental Sampler

Job Description:

The environmental samplers must be able to sample groundwater according with Section 2, inspect and evaluate the monitoring wells and outfalls as required, and record and report all findings to the Site Supervisor.

Responsibilities:

a. Sampling required wells and leachate. Recording all data.

b. Conducting all required well inspections.

c. Complying with the provisions of the HASP, the Contingency Plan, and the Post-Closure Plan.

Training:

1. 40-Hour Health and Safety Training for Hazardous Waste and Emergency Response satisfying OSHA 29 CFR 1910.120.

2. Annual 8-Hour Refresher Training satisfying OSHA 29 CFR 1910.120.

3. Office Procedures:

- General
- Inventory
- MES site safety classes
- Records

4. Operations Procedures:

- Security
- Well sampling
- Outfall sampling
- Sampling equipment inspection
- Contingency plan implementation
- Decontamination

5. Maintenance Procedures:

- Sampling equipment maintenance

6. Environmental Protection Program:

- Groundwater/surface water monitoring
- Contamination control

5.5.3 Facility Inspector

Job Description:

The facility inspector must be able to inspect and evaluate the entire facility for any discrepancies, or inadequacies. All findings shall be recorded and reported to the Site Supervisor.

Responsibilities:

a. Recordkeeping and Inventory.

b. Conducting all required facility inspections.

c. Complying with the provisions of the HASP, the Contingency Plan, and the Post-Closure Plan.

Training:

1. 40-Hour Health and Safety Training for Hazardous Waste and Emergency Response satisfying OSHA 29 CFR 1910.120.

2. Annual 8-Hour Refresher Training satisfying OSHA 29 CFR 1910.120.

3. Office Procedures:

- General
- Inventory
- MES site safety classes
- Records

4. Operations Procedures:

- Facility operation/control
- Security
- Facility inspection
- Contingency plan implementation
- Decontamination

5. Maintenance Procedures:

- General maintenance
- Sedimentation and erosion control
- Leachate collection system

6. Environmental Protection Program:

- Groundwater/surface water monitoring
- Contamination control

5.5.4 Operator

Job Description:

Operators must be able to operate all equipment at the facility to handle leachate collection and other required tasks. Operators must comply with HASP.

Responsibilities:

a. Maintenance, inventory, and operation of equipment assigned.

b. Upkeep and maintenance of grounds at and surrounding the facility.

c. Follow the HASP, the Contingency Plan, and the Post-Closure Plan as directed.

Training:

1. 40-Hour Health and Safety Training for Hazardous Waste and Emergency Response satisfying OSHA 29 CFR 1910.120.

2. Annual 8-Hour Refresher Training satisfying OSHA 29 CFR 1910.120.

3. Office Procedures:

- General
- MES site safety classes
- Hazardous waste manifest system

4. Operations Procedures:

- Facility operation/control
- Security
- Leachate management
- Contingency plan
- Decontamination

5. Maintenance Procedures:

- General maintenance
- Sedimentation and erosion control
- Leachate collection system
- Roadways

6. Equipment Operation and Maintenance Procedures:

- Decontamination/truck wash equipment
- Leachate handling equipment
- Facility support equipment
- Safety equipment
- Spill control equipment
- Heavy equipment

7. Environmental Protection Program:

- Contamination control

HAWKINS POINT HAZARDOUS WASTE FACILITY TRAINING PROGRAM

BASIC TRAINING PROGRAM (Page 1 of 2)

Topic	Key Points
History of Environmental Law	Provides an overview of the progress of government toward the control of hazardous waste
	Summarizes the effect of each law
RCRA—The Law	Describes the purpose, function and two primary subtitles of the law
	Provides a summarized presentation of the prior sections of Subtitle C
RCRA—The Regulations	Outlines the history and future of the regulations
	Describes the objective of the regulations
RCRA and Hawkins Point	Explains the RCRA regulations as they apply to Hawkins Point
Facility Standards	Lists and explains the facility requirements of operation under the RCRA regulations
Safety Procedures	Outlines general personal and operational safety rules
	Defines the characteristics and hazards of the types of wastes to be disposed

BASIC TRAINING PROGRAM (Page 2 of 2)

Topic	Key Points
Health & Safety Plan	Review and sign acknowledgment sheet
Contingency Plan/Evacuation Plan	Explains the plan contents
	Defines the plan requirements
	Details evacuation routes
	Implementation
	Use of local response units
Transportation/Manifest	Description and listing of regulatory authorities and Acts
	Summary of emergency response requirements
	Details shipping system
	Includes examples of required documentation and information
	Systematic outline of the manifest system
Emergency Response	Describes equipment and its use for emergency procedures
	Includes a discussion of the available emergency equipment and its use
	Procedures to respond to spills or fires
Personnel Safety Equipment	Instructs function of crew facilities, use of "clean room" and "dirty room"
	Daily personnel protective equipment procedures
	Personnel safety equipment

INTERMEDIATE TRAINING PROGRAM (Page 1 of 1)

Topic	Key Points
Storage Techniques	Describe leachate collection system
	Review unloading from storage tank
Inspection Techniques	RCRA requirements
	Inspection techniques
	Review of inspection forms
	Discussion of remedial action procedures
Contingency Plan	Detailed presentation on specific employee tasks
Decontamination	Procedures for personnel
	Procedures for equipment
	Disposal of decontaminated residue and materials

ADVANCED TRAINING PROGRAM (Page 1 of 1)

Topic	Key Points
Monitoring	Groundwater monitoring
Emergency Equipment	Use
	Inspection
	Maintenance
Inspection Techniques	Maintaining an adequate program
	Explanation of the inspection procedures
	Review of forms
Handling/Storage Techniques	Traffic flow and control
	Loading off-site transport vehicles
Contingency and Health & Safety Plans	Details of plans
	Discussion of plans

ATTACHMENT 4

SITE SECURITY AND CONTINGENCY PLAN

CHS PERMIT APPLICATION SECTION 4

SITE SECURITY AND CONTINGENCY PLAN

4.1 GENERAL

This Security and Contingency Plan applies to the Hawkins Point Hazardous Waste Landfill site. The plan provides the necessary measures to minimize the potential effect should an uncontrolled discharge or release of hazardous waste, fire, explosion, or other emergency event occur at the site that poses a potential hazard to human health or the environment. Responsibility for implementing the plan lies with MES as the emergency coordinator.

Distribution and document control procedures for the Security and Contingency Plan or future amendments will be the responsibility of the Hawkins Point Site Supervisor. A copy of the Contingency Plan will be kept in the office trailer at the Hawkins Point facility. The Site Supervisor, MES's Chief of Safety, MES's Environmental Dredging and Restoration Group, and all offsite, on-call MES emergency personnel will be knowledgeable of the plan and be prepared to implement it, as needed.

4.1.1 Surveillance

MES will perform monthly inspections of the security fencing, gates, locks, and warning signs for damage, corrosion, or missing items. MES will escort unauthorized personnel from the site, as needed. MES will contact appropriate state and local authorities as needed for assistance with trespassers, vandalism, or theft.

Site security during normal working hours is provided by onsite operating staff. During all non-working hours, site security is provided by the 24-hour surveillance security camera system, which covers the maintenance building and the leachate loading area. The purpose of this camera system is to:

1. Deter and monitor unauthorized entrance into the facility during non-operating hours.

2. Provide the Site Superintendent with physical documentation identifying any vehicles attempting to enter the facility during non-operating hours.

3. Alert the Emergency Coordinator of any problems or unusual conditions encountered at the site during non-operating hours.

4.1.2 Entry Control

The active portion of the facility is completely enclosed by fencing, including a 6-foot-high chain-link fence with a barbed-wire top, three-strand barbed-wire fence, and a total

of two access gates. The entrance road access gate will be open and controlled by the facility operator during operating hours and will be locked during non-operating hours.

4.1.3 Warning Signs

Warning signs are posted at each gate stating: "Danger—Unauthorized Personnel Keep Out." The message will be stated in English, with 4-inch-high boldface letters, making the sign easily legible at a distance of 25 feet. Additional signs will be attached to the perimeter chain-link fence facing outward at a lateral spacing of approximately 400 feet.

4.2 EMERGENCY COORDINATOR

4.2.1 Emergency Coordination

The Site Supervisor will serve as the Emergency Coordinator during facility operating hours and will have the authority to designate an acting Emergency Coordinator in the event of his absence. The following MES personnel will be the designated emergency coordinators:

Primary Emergency Coordinator

Name: Susan McCauley, MES Chief of Safety

Telephone: 410-729-8226 (Office)
443-223-0027 (Mobile)

Emergency Coordinator #2

Name: Aimee Warner, Senior Engineer

Telephone: (410) 729-8309 (Office)
(410) 507-2824 (Mobile)

Emergency Coordinator #3

Name: Richard Foxx, Environmental Specialist

Telephone: (410) 633-1146 (Office)
(443) 458-8019 (Mobile)

The names of MES's emergency coordinators will be posted on the emergency coordination bulletin board located in the office trailer at the Hawkins Point facility.

During non-operating hours, one of the above MES Emergency Coordinators will be on call to coordinate a response action, if required. The names and telephone numbers of

the MES equipment operators will be posted in the Hawkins Point office trailer along with the emergency coordinators listed above. The on-call Emergency Coordinators will be available via mobile phone at all times while on call.

4.2.2 Limit of Authority

The Emergency Coordinator will be authorized to expend, using emergency procurement procedures, the resources necessary to prevent or mitigate fires, spills, explosions, or other incidents or conditions that may threaten life, property, or the environment.

4.3 EMERGENCY PERSONNEL

The emergency procedures outlined in this Contingency Plan are to be implemented in the event of a fire, spill, explosion, or other incident that threatens life, property, or the environment.

The personnel responsible for responding in an emergency and their responsibilities are as follows:

1. **Site Personnel**. All MES personnel working at the site shall be trained to respond to emergencies and represent the first line responders to emergency situations. In the case of an emergency at the site, employees will immediately:

   - Notify the Site Supervisor and onsite Emergency Coordinator
   - Notify the Chief of Safety
   - Evaluate the severity of the emergency to determine if the site should be evacuated or if requisite action can be taken to mitigate the situation without posing significant risk to themselves or other site personnel
   - Respond to the emergency as the situation dictates or evacuate the area, as required

2. **Onsite Emergency Coordinator**. The onsite Emergency Coordinator, who is trained to respond to emergency situations, will take action to mitigate the incident, evaluate the situation, and call for assistance as needed. In the event of an emergency, the Coordinator will immediately:

   - Evacuate the area except for emergency personnel
   - Notify the Site Supervisor
   - Direct the personnel involved in performing emergency functions until the arrival of the Site Supervisor or other emergency responders

4.4 IMPLEMENTATION

Whenever there is a release, fire, or explosion, the Emergency Coordinator must immediately identify the character, exact source, amount, material, and location of the

release by a review of facility records, or if necessary, by chemical analysis. Concurrently, the Emergency Coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions.)

The decision to implement the Contingency Plan depends upon the extent to which there is a threat to human health or the environment. The purpose of this section is to provide decision-making guidance to the emergency coordinator personnel.

The Contingency Plan will be implemented in response to the following situations:

1. Fire and/or Explosion (Excluding Fires Contained with Extinguisher):

a. A fire that causes the release of toxic fumes;

b. A fire that has the potential to spread to off-site areas;

c. A fire that has the potential to ignite materials at other on-site locations resulting in heat induced explosions;

d. The use of water or water and chemical fire suppressant could result in surface water run-off;

e. An imminent danger of an explosion with the potential of having flying debris or shock waves;

f. An imminent danger of an explosion that could ignite other wastes at the facility; or

g. An imminent danger of an explosion that could potentially result in the release of hazardous materials.

2. Hazardous Spills or Hazardous Material Release:

a. A spill could result in the release of hazardous liquids or vapors;

b. A spill could cause the release of toxic liquids or fumes;

c. A spill that can be contained onsite, but for which the potential exists for groundwater contamination; or

d. A spill that cannot be contained onsite, resulting in the potential for offsite contamination.

4.5 EMERGENCY RESPONSE PROCEDURES

4.5.1 Emergency Coordinator

In the event of an emergency situation, as defined in Section 4.4, the Emergency Coordinator must immediately perform the following duties:

1. Activate the internal facility alarms and communications systems (air horn and/or radios), where applicable, to notify all personnel onsite of a potential emergency;

2. As needed, notify the state or local emergency responders of the emergency by dialing 911; and

3. Notify on-call Site Supervisor of an emergency situation.

Other actions to be taken may include:

a. Identifying any materials and/or wastes released which pose a potential threat to human health or to the environment.

b. Assessing possible direct and indirect hazards to human health or the environment from released materials.

c. Notifying the fire department, MDE, the Baltimore City Health Department, or the National Response Center as necessary, by dialing 911, in the event of a spill of leachate and in the event of a fire and/or explosion.

d. Submitting "post-incident" reports, as requested and/or required by the emergency response authorities, the MDE, and/or the USEPA.

If personnel sustain injuries, the Emergency Coordinator must determine the number of persons injured and the need for emergency medical assistance to assess those injured personnel and determine if further medical treatment is needed.

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health or the environment, or, if the release is of a quantity which would exceed the Reportable Quantities listed in 40 CFR 302, as promulgated effective July 1, 1990, these findings must be reported as follows:

1. If the assessment by the city and state police departments indicates that the MDE and the City Health Department need to be contacted, then they shall immediately be notified to assist in the evaluation of the risk potential and to determine if evacuation of local areas should be initiated.

2. The Emergency Coordinator must immediately notify either the government official designated as the on-scene emergency response coordinator for the area or the National Response Center at 1-800-424-8802. This report must include:

   - Name and telephone number of MES responder filing the notification.
   - Name and address of the Hawkins Point Hazardous Waste Landfill.
   - Time and type of incident (e.g., release, fire).
   - Type and quantity of material(s) involved in the release incident, to the extent known.
   - The existence of personnel injuries, if any.
   - The potential for release posing a hazard to human health or the environment.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous wastes at the facility. These measures must include, where applicable, a cessation of activities and operations, collecting and containing released waste, and removing or isolating containers.

4.5.2 Specific Emergency Actions

4.5.2.1 General

To respond to specific emergencies, the Hawkins Point Hazardous Waste Landfill has adopted a series of emergency procedures, including:

- Spill procedure for onsite liquids;
- Spill procedure for onsite solids;
- Spill response procedure for offsite
- Fire response procedures; and
- Explosion response procedures;

These procedures are outlined in the subsequent sections.

4.5.2.2 Spill Procedure for Onsite Liquids

1. Upon discovery, report to MES's Emergency Coordinator.
2. The Emergency Coordinator will review information including but not limited to the size of the spill, the materials spilled, and the potential for these materials to reach waterways and/or negatively impact human health or the environment. This information will allow the Coordinator to decide whether to implement the Spill Contingency Plan; if so, the Coordinator will sound the alarm using short,

repeated blasts and, if applicable, contact on-call emergency response personnel.

3. Onsite personnel will report to the facility office trailer;

4. As directed by the Emergency Coordinator, site personnel will:

   a. Attempt to stop the leak or spill using earth, sand bags, heavy equipment, berms, absorbent, or other means or methods;
   b. Assess the extent of the release or spill;
   c. Construct dikes, if necessary, or absorb with Speedi-Dri;
   d. Place contaminated soil and absorbents in properly labeled storage containers to be transported to a permitted TSD facility by a certified hazardous waste hauler;
   e. Collected samples, as required, for analysis to determine if contamination is present; and
   f. Replace, repair, and/or clean spill equipment.

4.5.2.3 Spill Procedure for Onsite Solids

1. Upon discovery of a spill that cannot be easily and quickly contained, onsite staff must notify the Emergency Coordinator.

2. The Emergency Coordinator will decide whether to implement the Contingency Plan.

3. Personnel will report to the onsite office trailer.

4. Upon the direction of the Emergency Coordinator, onsite MES personnel will:

   a. Through visual examination, check the extent of the spill;
   b. In the event of rain or solids contacting water, MES personnel are to implement spill procedures for liquids;
   c. Remove the spilled waste and contaminated soil and place in properly labeled storage container to be transported to a permitted TSD facility by a certified hazardous waste hauler;
   d. Collect samples as necessary for laboratory analysis to determine if contamination is present.

4.5.2.4 Spill Response Procedure for Underground Releases

This procedure addresses the release of liquids from the leachate collection system, leachate-holding tanks, or from any landfill cell. When leaks are detected or suspected based on material volumes being unaccounted for the following tasks will be initiated:

1. Determine the source of the leak and initiate measures disconnect the source of the leak (cut-off values);

2. Determine the extent of the release based on investigations to be undertaken by MES; and

3. Assess potential remedial measures to mitigate the release and perform emergency response measures.

4.5.2.5 Fire and/or Explosion Procedures

1. Upon discovery of a fire, onsite personnel are to notify the MES Emergency Coordinator.

2. The Emergency Coordinator will determine on an incident by incident basis when it is necessary to implement the Contingency Plan; if so, the Coordinator will sound the alarm in short, repeated blasts, and if applicable, contact on-call emergency response personnel and notify emergency personnel by contacting 911.

3. All onsite MES personnel will move to the rally points and remain there until accounted for and instructions are received from the onsite Emergency Coordinator.

4. Emergency medical responders should be notified if there are injured persons at the site, and qualified medical personnel should evaluate injured personnel, unless there is imminent further risk to the personnel, in which case they should then be removed immediately from the facility.

5. MES personnel should attempt to contain or put out only small fires that can be controlled with the fire extinguishers located onsite and then immediately notify the fire department.

4.5.2.6 High-Water Alarms

In an effort to prevent leachate spills onsite, MES has installed two Siemens Instruwatch remote monitors within the below-grade leachate collection sumps. These monitors are equipped with high level detectors to trigger alarms if collected leachate volumes approach overflow levels. These monitors are powered by a solar source, and MES performs routine calibrations to ensure accuracy and dependability. The alarms are also equipped with a lead acid battery, which is reverted to by the system as needed. The backup lead acid batteries are to be replaced by Hawkins Point maintenance staff when they reach a level below 12 volts. Alarm notifications and flow levels are automatically transmitted via satellite to an existing cellular alarm network. All alarm information, including status and records of previous transmissions can be accessed 24 hours a day at www.instrumentwatch.com.

When an alarm is tripped, MES operational personnel receive a text message on their cellular phones, in sequential order, alerting them of the location of elevated water level within the leachate system. The alarms are set to provide early notice so that personnel can respond before the sumps overflow. The contacts on the alarm action list are Richard Foxx, William Kight, and Aimee Warner. Their contact information is listed below. It is important to note that such an alarm notification does not always necessitate the initiation of the contingency plan.

Contact Information:

Order	Name	Number
#1	Richard Foxx	443-458-8019
#2	William Kight	443-250-6604
#3	Aimee Warner	410-507-2824

4.5.3 Post-Incident Actions

Immediately after an emergency, the Emergency Coordinator must provide for treatment, storage, or disposal of all recovered wastes, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility within 90 days in accordance with COMAR 26.13.

The Emergency Coordinator must ensure that two conditions exist in the affected area of the facility:

1. Waste from spill response measures is properly stored in a designated secure area onsite in DOT Certified drums, pending characterization and offsite disposal.

2. Containerized spill wastes are segregated in storage from other wastes or materials that may be incompatible.

Spill response equipment used by MES or their emergency response contractor are to be decontaminated within a secondary containment area before the equipment is demobilized from the site.

The Emergency Coordinator or the Site Supervisor must investigate the facility for any damage that may have been caused to containment systems and conduct the appropriate repairs.

4.6 EMERGENCY EQUIPMENT

Figure 4.1—Locations of Fire Hydrants

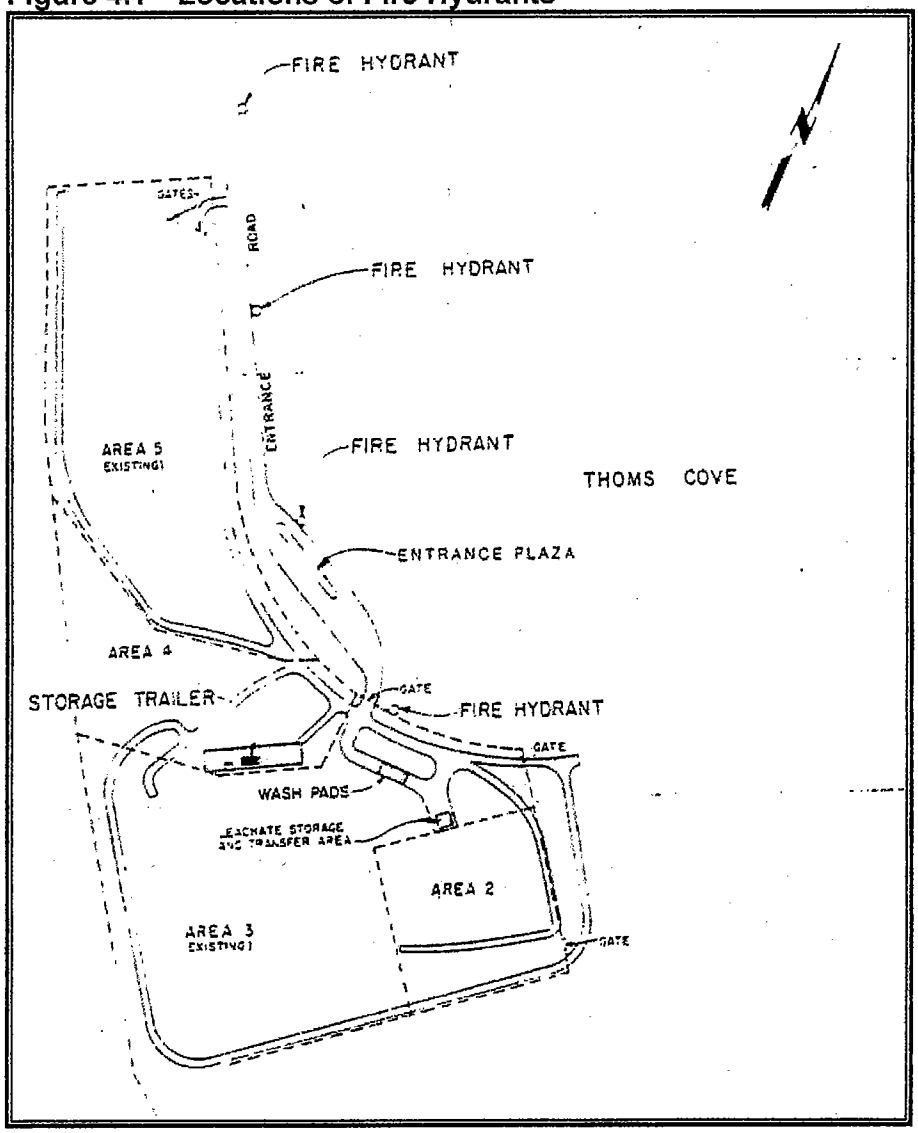


Figure 4.1 shows the location of fire hydrants and the onsite storage trailer where emergency materials are maintained, including Speedi-Dri industrial absorbent, electrical generator, electric pump, diesel pump, hoses, pipe stoppers, absorbents pads, and sand bags. ABC 15-pound fire extinguishers rated for extinguishing fires associated with ordinary combustible materials, flammable liquids, and electrical fires are located at multiple locations including in the office and storage trailers, the leachate storage, and leachate transfer area. ABC 5-pound fire extinguishers are also installed in each vehicle and heavy equipment maintained at the site. ABC 20-pound fire extinguishers rated to extinguish fires associated with ordinary combustible materials, flammable liquids and electrical fires are located in the storage trailer. For additional equipment needs or

assistance, a list of equipment suppliers is posted on the emergency coordination bulletin board within the office trailer. The emergency equipment is inspected in accordance with the specifications in the site HASP (Section 6 of this permit application).

4.7 COORDINATION AGREEMENTS

The agencies listed below are the primary emergency response parties to be contacted in the event of an emergency at the Hawkins Point facility. In addition, the local police department is available for traffic and crowd control as well as security services. These forces will assist the MES facility personnel on an as needed basis. The Baltimore City Fire Department will be the primary emergency authority and will respond to fires, rescue efforts, and other emergency incidents.

• Baltimore City Police	911
• Southern District	(410) 396-2499
• Maryland State Police	(410) 761-5130
• Baltimore City Fire Department	911
• Hazardous Materials Task Force	(410) 396-5616
• Ambulance	911
• Baltimore City, Harbor Hospital	(410) 350-3200
• Transportation Authority	(410) 288-8400
• MDE Solid Waste Compliance Division	(410) 537-3315 (day)
• MDE Emergency Response Office	(410) 537-3975 (office)
• MDE 24-Hour Spill Reporting	1-866-633-4686

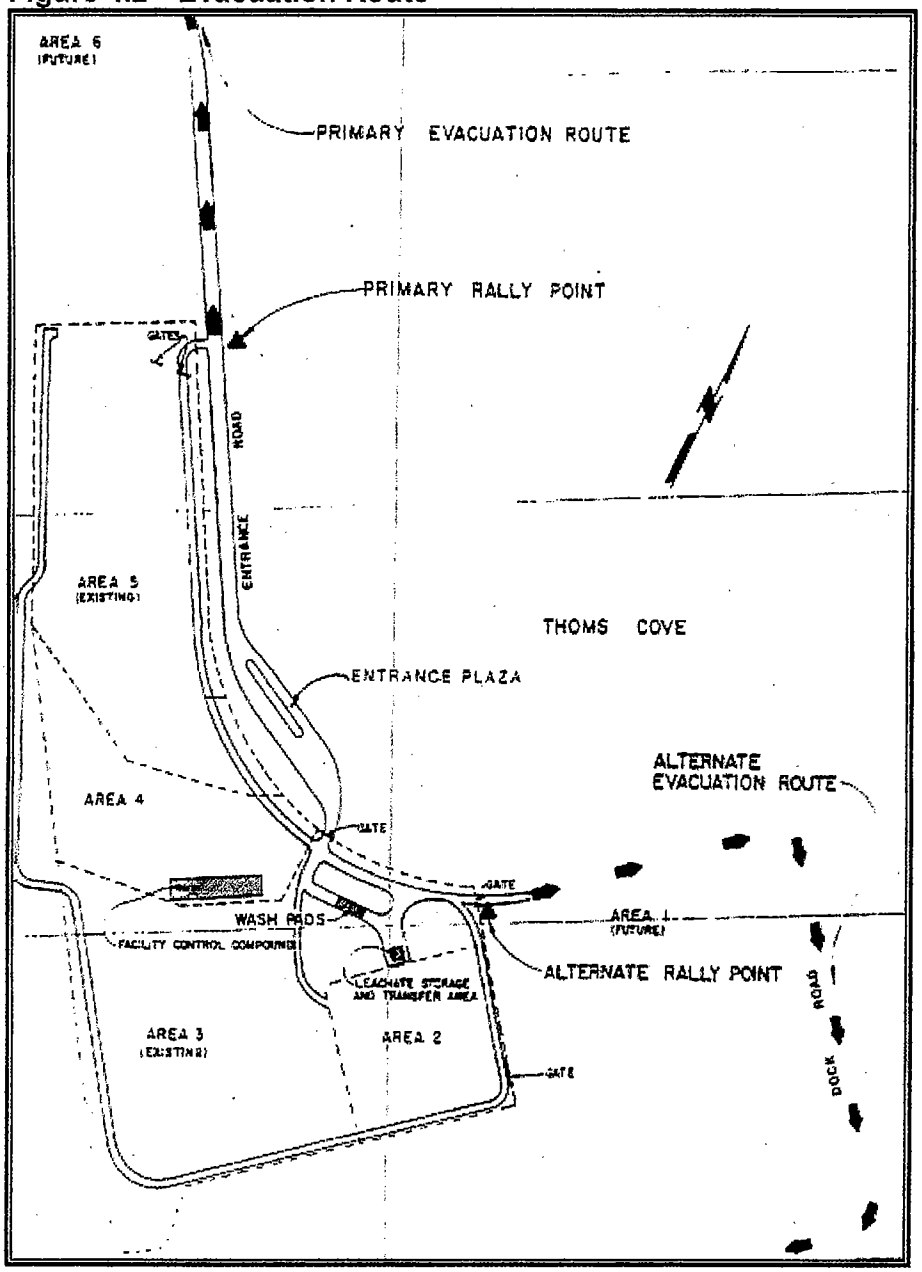
The National Response Center does not have a copy of the facility contingency plan but is available for oil and chemical spill emergencies.

- National Response Center 1-800-424-8802

4.8 EVACUATION PLAN

The evacuation plan will be instituted in the event that the emergency coordinator determines that an actual or impending event poses a threat to human health or has a potential for severe environmental degradation.

Figure 4.2—Evacuation Route



When the alarm sounds, each person onsite will work to ensure that other staff members in the area are alerted and aware of the evacuation situation. Personnel will proceed immediately to the primary rally point on the entrance road near the north side of Area 5, then exit via the entrance road. If the primary rally point is inaccessible, personnel are to proceed to the alternate rally point at the Dock Road gate, then exit by way of Dock Road. Refer to Figure 4.2 (above) for the locations of the rally points and evacuation routes.

All employees will gather at the designated rally point, where the Emergency Coordinator will account for all personnel and visitors on the site sign-in log. Radio communication between points will be used to determine if all personnel have been evacuated.

4.9 REQUIRED REPORTS

The Site Supervisor must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after any incident that requires implementation of the contingency plan the incident, a written report of the incident must be submitted to the Secretary of the MDE and the USEPA Regional Administrator. This report is completed only when the contingency plan is required to be placed into effect.

The report must include:

1. Name, address, and telephone number of MES.
2. Name, address, and telephone number of the Hawkins Point Hazardous Waste Landfill.
3. Date, time, and type of incident (e.g., explosion, fire, spill).
4. Name, type, and quantity of materials involved.
5. The extent of injuries, if any.
6. An assessment of the actual or potential hazards to human health or the environment, where applicable.
7. Estimated quantity and disposition of recovered materials that resulted from the incident.

The Site Supervisor must provide written notification to the USEPA Regional Administrator, MDE, and appropriate local authorities that the facility is clean and able to resume operations before activities in the affected area(s) of the facility commence.

4.10 AMENDMENTS TO THE PLAN

This plan will be revised and immediately amended, if necessary, whenever:

1. Applicable regulations are revised.
2. The plan fails in an emergency.

3. The facility changes operation, maintenance or other circumstances in a way that substantially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes in the responses necessary in an emergency.

4. The list of emergency coordinators changes.

5. The list of emergency equipment changes.

This review and amendment task is the responsibility of the Site Supervisor. For changes to items 4 or 5 above, defined as "minor modifications," notification to the USEPA Regional Administrator and the Secretary of the MDE is required. All other changes must be processed as a RCRA permit modification as prescribed in 40 CFR 270. The Site Supervisor will ensure that all facility personnel are made aware of emergency procedures and amendments. To ensure all copies of the contingency plan are updated as appropriate, the Site Supervisor will maintain a list of all contingency plan holders and locations. Any modification to the plan will require the Site Supervisor to update all existing copies.

ATTACHMENT 5

GROUNDWATER MONITORING PROGRAM

CHS PERMIT APPLICATION SECTION 2

GROUNDWATER MONITORING PROGRAM

2.1 GENERAL SAMPLING AND ANALYSES PROTOCOL

Maryland Environmental Service (MES) continues to carry out the groundwater-monitoring plan for the Hawkins Point Landfill. It is important to note that groundwater is not used for drinking water or for onsite activities at Hawkins Point, nor is groundwater used at sites downgradient within ½ mile. MES has been sampling all compliance wells in Areas 2 and 3 since 1983 and in Areas 4 and 5 since the fourth quarter of 1994 and has subsequently produced voluminous amounts of data on the selected indicator and groundwater quality parameters. The Maryland Department of the Environment (MDE) has approved MES's August 21, 2009, request to initiate sampling permitted wells on a semi-annual basis in accordance with COMAR 26.13.05.06-5A(8). The following sections will outline this sampling and analysis protocol.

2.1.1 Laboratory Capabilities and Certification

The laboratory contracted to carry out the sampling and analysis will be a full-service wet chemistry, organic, and metals analysis laboratory equipped with all of the equipment necessary to perform analyses as required by the EPA and MDE.

2.1.2 Well Installation and Maintenance

The installation of all wells was completed in accordance with 40 CFR Part 264.98, and all monitoring wells are cased in such a manner that the integrity of the well borehole is maintained. (See Figure 2.1 for well details.) Each well is provided with casings and locking caps for security, and is set in concrete. The well casings are screened and packed at a minimum of 10 feet with sand. The space between the borehole and well casing above the sampling depth has been sealed with hydrated bentonite clay pellets ("bentonite plug"). Above the bentonite plug is a mixture of 10 percent bentonite clay by weight and 90 percent cement. The depth of this mixture varies with the length of the casing. Each monitoring well will be thoroughly inspected during each sampling period and repaired as necessary. The protective standpipe, locking cap mechanism and well pipe will be inspected for damage. If damaged, the standpipe will be re-aligned and re-grouted or replaced. The well pipe will be inspected for vertical alignment and replaced if misalignment is sufficiently severe to inhibit proper sampling. Current well locations are shown in Figure 2.2, and well construction details are summarized in Table 2.1, below.

Figure 2.1—Diagram of Hawkins Point Groundwater Monitoring Well

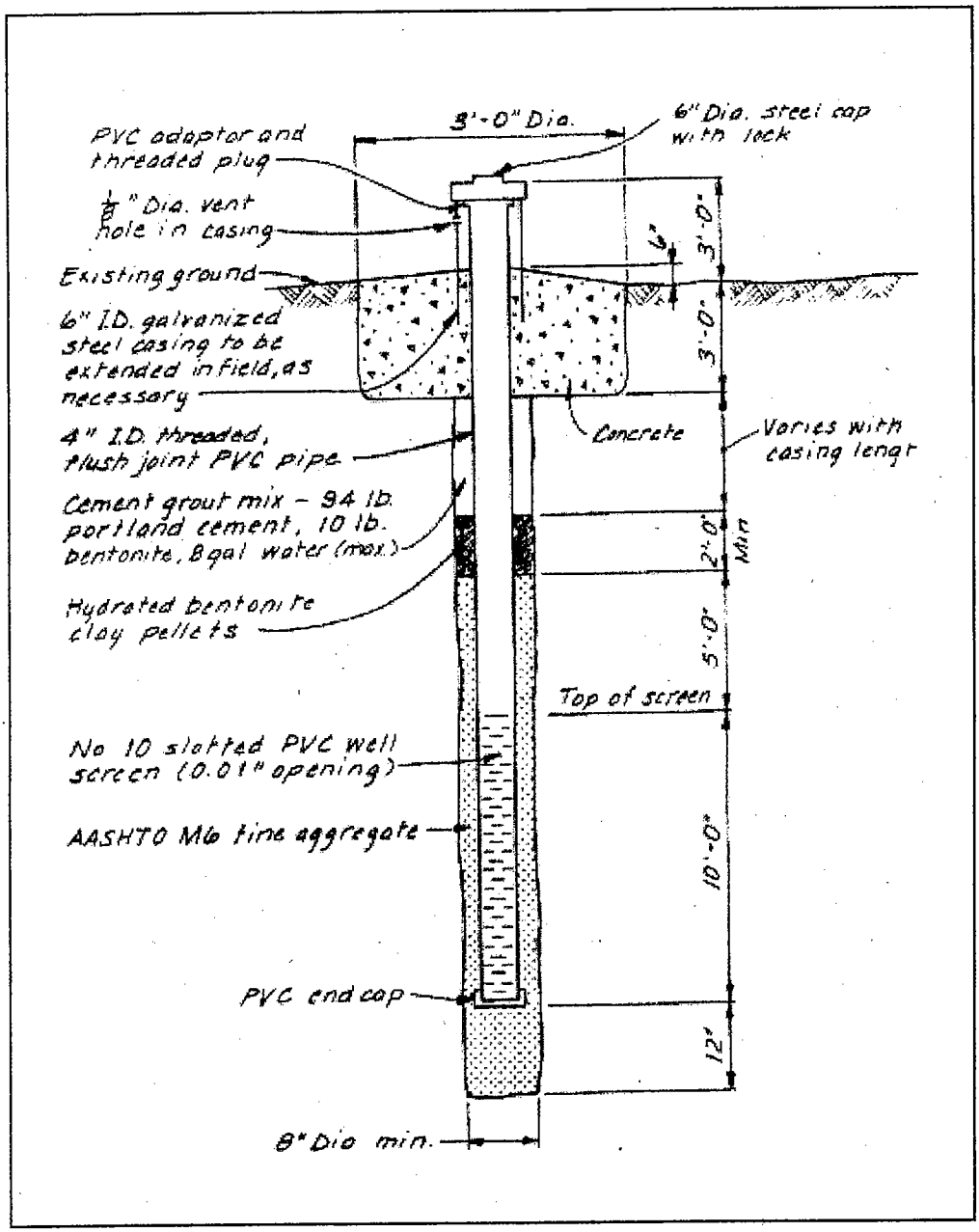


Figure 2.2—Hawkins Point Groundwater Monitoring Well Locations

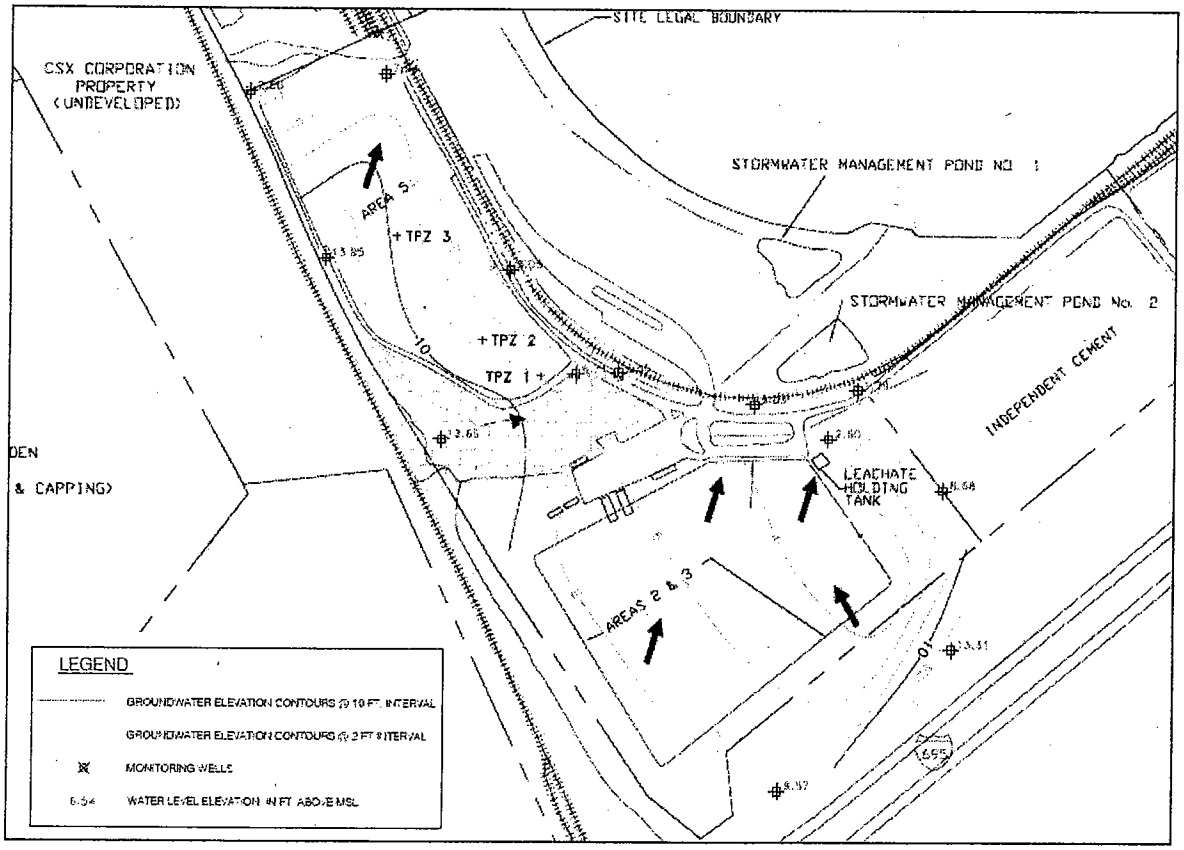


Table 2.1—Summary Table of Well Construction Details

HAWKINS POINT HAZARDOUS WASTE LANDFILL						
Summary Table of Well Construction Details						
Well Number	Top Of Casing Elevation	Screened Interval	Depth to Bottom	Well Installation Date	Well Diameters	Casing/Screening Material
2A	44.48	54-64	64.0	03/18/83	4"	Plastic/Plastic
2B	41.61	35-45	45.0	08/30/90	4"	Plastic/Plastic
2D	27.38	26-36	36.0	12/20/11	4"	Plastic/Plastic
2E	24.07	29-39	39.0	12/08/83	4"	Plastic/Plastic
2F	30.07	20-30	30.0	11/01/95	4"	Plastic/Plastic
2G	26.38	25-35	35.0	08/03/84	4"	Plastic/Plastic
2H	22.76	20-30	30.0	09/04/84	4"	Plastic/Plastic
M	19.90	29-39	39.0	02/10/83	4"	Plastic/Plastic
R	29.66	60-70	70.0	02/16/83	4"	Plastic/Plastic
S	40.28	50-60	60.0	02/15/83	4"	Plastic/Plastic
W	24.01	25-35	35.0	12/19/84	4"	Plastic/Plastic
Y	27.09	30-41	43.3	12/14/84	4"	Plastic/Plastic
Z	18.54	20-29	31.2	12/18/84	4"	Plastic/Plastic

2.1.3 Measurement of Static Water Level in Well

Before sampling begins, the depth to water in the wells is measured using electronic water level indicators, marked to 0.01 foot. All of this information is recorded in the Hawkins Point field logbooks. Groundwater elevations are then calculated by subtracting the measured depth to water from the known top of well casing elevation. These data are detailed in both a table and groundwater contour map submitted with each semi-annual report. The most recent top-of-casing elevation survey of the wells was conducted on May 19, 2011. Prior to collecting the depth to water measurement, the sampling staff will record in the Hawkins Point field logbook the identification number of the water level indicator selected.

Water level indicators will be decontaminated before initial use and before use in any other well in order to avoid cross-contamination between wells. The meters will be decontaminated through the following procedure:

1. Triple rinse the equipment with deionized water
2. Wash the equipment with a Liquinox solution and follow by a deionized water rinse
3. Place the equipment on clean plastic sheet to air dry prior to next use

During the decontamination process, as well as throughout the sampling process, the equipment listed below will accompany the sampling staff.

- Electronic water level indicator
- Site logbook
- Paper towels and trash bags
- 55-gallon drums
- Spill containment
- Plastic sheeting
- Decontamination supplies including, but not limited to, one carboy of deionized water for each well to be sampled, Liquinox mixture, brush, and trough container.
- Groundwater level data forms
- Pen with indelible ink
- Clipboard
- PPE as required by the Hawkins Point HASP (Section 6.0)

2.1.4 Well-Sampling Procedures

The sampling of monitoring wells, field-collected water quality readings, and decontamination of all sampling equipment will be performed by a competent and experienced entity who will ensure sampling collection methods, sample preservation methods, sample shipment methods, and chain of custody control are all conducted in accordance with the requirements of COMAR 26.13 and in accordance with USEPA EPA/540/S-95/504, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.*

2.1.5 Handling Procedures for Purged Groundwater

During post-closure, all purged groundwater will be managed in accordance with 40 CFR 264 and COMAR 26.13 and will be discharged to the surface and will only be managed as hazardous waste and handled in the same manner as the leachate, if confirmed necessary from laboratory analytical results.

2.1.6 Safety

Personnel will follow all of the Health and Safety Considerations as outlined in the Hawkins Point HASP, or Section 6.0 of this Permit Application.

2.1.7 Determination of Rate and Direction of Groundwater Flow in Uppermost Aquifer

The rate and direction of groundwater flow shall be determined using the calculated groundwater elevations referenced to mean sea level. The direction of flow shall be determined through the mapping of the groundwater elevations and the completion of groundwater contour map. Groundwater elevations, groundwater contours, and the hydraulic gradient shall be used to calculate seepage velocity semi-annually using Darcy's equation; the results will be submitted to the MDE as a component of the semi-annual groundwater-monitoring report.

2.1.8 Semi-Annual Preparation of Groundwater Elevation Contours

A groundwater elevation contour map shall be prepared and submitted in the semi-annual reports for Areas 2, 3, 4, and 5. Each successive contour map shall be reviewed and compared to previous groundwater elevation contours to identify changes in the groundwater flow regime.

2.1.9 Sample-Handling and Preservation Techniques

Sample preservation shall conform to, but not be limited to, guidance contained in 40 CFR, SW-846, and standard methods.

2.1.10 Sample Delivery to Laboratory

Samples shall be picked up by or delivered to the contract laboratory. The samples shall be handled and transported under chain-of-custody control procedures (Section 2.1.12) in such a manner that they meet all holding times and preservation requirements as per the accepted methodologies including, but not limited to, SW-846 and Standard Methods. Note that samples taken and delivered directly to the laboratory may not meet the temperature requirements owing to shortened delivery times.

2.1.11 Sample Labels

To prevent sample misidentification, the sampler shall affix a label to each sample container (bottle). Sample labels shall be sufficiently durable to remain legible even when wet. Sample labels shall contain the following information:

- Sample identification
- Collector's initials
- Date and time of collection
- Place of collection
- Parameters requested for laboratory analysis (if space permits)

2.1.12 Chain-of-Custody Control

The tracking of sample possession shall be accomplished by use of a chain-of-custody record. Chain-of-custody form(s) shall be completed for each sample event and the chain-of-custody will uniquely identify each sample, the sample collection point, the person(s) performing the sample collection, time and date of sample collection, and the analyses to be performed.

The chain-of-custody shall be signed whenever the sample changes hands and shall show that all required preservations were maintained and the samples were properly iced at the time of delivery. A chain-of-custody form shall be completed and shall accompany every sample shipment. At a minimum, the chain-of-custody shall contain the following information:

- Field sample ID
- Lab ID
- Date and time of collection
- Sample type (groundwater, QA/QC blank, etc.)
- Location and/or site ID
- Third-party sampling contractor
- Number of containers
- Analyses requested
- Preservatives used
- Signature of persons involved in the chain of possession
- Inclusive dates and times of possession
- Comments section to relay other information to the laboratory

2.1.13 Quality Assurance and Quality Control

Sample collection shall be completed by a third party for the regulated wells and preserved bottles shall be supplied by the contract lab. Sample collection quality control shall be accomplished through the use of a trip blank, field blank, equipment blank, and duplicate

samples. One field blank, one trip blank, and one equipment blank shall be prepared each sample day; additionally, one duplicate shall be collected for every 10 samples and from a randomly selected well.

The trip blank, which is prepared by the contracted laboratory and accompanies the sample bottles to the laboratory, is used to test for potential contamination from bottles, preservative, and sample-handling and transportation procedures.

The field blank is prepared in the field and consists of distilled, deionized water which is transferred to the appropriate sample containers, treated with preservatives (if necessary), and handled in the same manner as the samples. It is used to test the ambient conditions at the sampling location.

The equipment blank, which is also prepared in the field, is used to verify the decontamination procedures. For Hawkins Point, the equipment blank will be collected by running deionized water through the decontaminated sampling equipment.

The duplicate samples will be collected at the same time, from the same location, and with the same apparatus, and placed in the identical containers that were prepared and handled in the same manner as the original sample. The duplicate samples will be laboratory analyzed using the same analytical procedures as the original samples. The duplicate establishes quality control for all steps after sample collection. Differences of ±10 percent on duplicates of target analytes shall be investigated, and qualification of results shall be considered if this condition is encountered.

Detection of target analytes in trip, method, or field blanks shall trigger investigation of potential sources of contamination. The concentrations of any contaminants found in any blanks will not be used to correct data. The contaminant concentration of target analytes in these blanks will be documented. If the concentrations in the field, trip or other blanks are greater than 1/10th of the field sample results or are equal to or greater than the maximum contaminant level (MCL) (whichever is less) and a statistically significant increase (SSI) is identified, invalidation and resampling shall be considered.

2.1.14 Field Logbooks

When a sample analysis produces an unexpected or unexplainable result, it is necessary to determine if the circumstances of sample collection, rather than a change in the groundwater quality, are responsible. Therefore, examination of the field logbook is critical in this process. A field log will be kept by both MES and the laboratory performing the analysis each time monitoring activities are conducted in the field. The field logbook shall document the following, at a minimum:

- Sample location identification
- Presence of debris and/or solids
- Sample withdrawal procedure and all equipment used (including equipment ID numbers)

- Date and time of collection
- Monitoring well sampling sequence
- Field observations of sampling event
- Name of collector
- Weather conditions, including air temperature

2.2 GENERAL GROUNDWATER MONITORING

The post-closure environmental monitoring program will continue for a period of 30 years after closure, with sampling and analyses of the indicator and groundwater quality parameters performed on a semi-annual basis. Although barium and pH have been removed from the list of indicator parameters, they will continue to be monitored on a semi-annual basis for geochemical assessment of potential releases. The results will be included in the semi-annual reports.

2.2.1 Indicator and Groundwater Quality Parameters

The established indicator and groundwater quality parameters for Hawkins Point, as listed in 40 CFR Part 264.93 and 264.98(a) are as follows:

EPA/MDE Site Specific

1. Chromium (all wells)
2. Hexavalent chromium (all wells)

EPA General Constituents

3. Chloride
4. Iron
5. Manganese
6. Phenols
7. Sodium
8. Sulfate
9. Specific conductivity
10. Total organic carbon
11. Total organic halogens

Volatile organic compounds (VOCs) at Hawkins Point will be monitored on an annual basis in the third quarter of each year. This data will be evaluated and each VOC that is present will be detailed to the MDE in the subsequent semi-annual groundwater monitoring report.

2.2.2 Analytical Procedures for Parameters

All analytical and sampling methods shall conform to the accepted methods including, but not limited to, 40 CFR, SW-846, and Standard Methods. Any other testing methods must be approved by the MDE prior to use.

2.2.3 Type, Quantities, and Concentrations Expected in Wastes

During post-closure, the indicator parameter chromium will continue to be utilized as the basis for the detection monitoring for Hawkins Point. Monitoring and analysis of this indicator parameter provides the volume of historical analytical information necessary to determine if any leakage from the regulated unit occurs.

As outlined in Figure 1.2, the content of chromium in the waste material was significantly greater than any other hazardous constituent, and thus should continue to be a representative indicator parameter for any heavy metal that may migrate from the regulated units containing chromium ore tailings.

2.2.4 Identification of Uppermost Aquifer

As outlined in the 1985 Hydrogeologic Assessment, performed by Black & Veatch (see Appendix F), the upper aquifer underlying Areas 2, 3, 4, and 5 is an unconfined aquifer composed of post-Cretaceous sediments and the upper member of the Cretaceous deposits known as the Patapsco Formation.

The Patapsco Formation consists of interbeded, banded silts, and clays with clayey sands. Water-bearing sands of the Patapsco aquifer occur as irregularly bounded sheets to isolated ribbons, separated by layered silts and clays. The Arundel Formation underlies the Patapsco Formation and consists primarily of silts and clays. The Arundel has a low hydraulic conductivity and forms a confining unit beneath the Patapsco Aquifer.

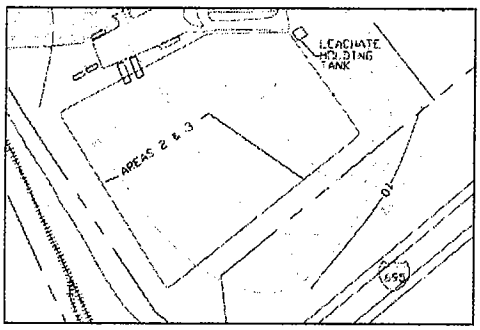
2.3 GROUNDWATER MONITORING OF HAWKINS POINT

The effectiveness of the landfill, including but not limited to the leachate collection system and the landfill cap, will be determined by statistically evaluating the indicator parameters outlined in Section 2.2.1.

2.3.1 Proposed Monitoring of Regulated Wells

The methods of statistical analyses used are Parametric and Non-Parametric Analysis of Variance (ANOVA). These analyses are used to determine if there is a difference between the upgradient well mean concentration and the two downgradient well mean concentrations at a given point in time. These methods, like other methods, assume that a significant increase in the tested parameter indicates that the detected concentrations downgradient are higher than the detected concentrations upgradient.

2.3.2 Monitoring of Areas 2 and 3



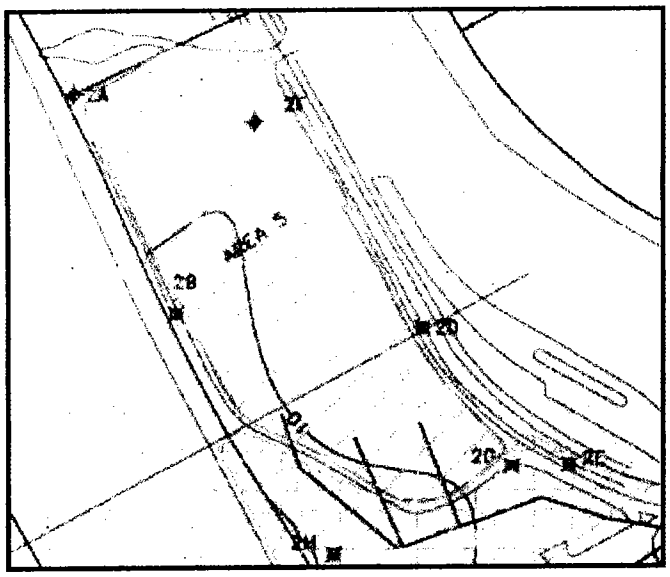
Based on an examination of historical groundwater elevations and contoured groundwater elevation maps of Areas 2 and 3, groundwater flows through Area 2 in an approximate south to north direction. Groundwater flows through Area 3 from an approximate west to east direction, as depicted in the adjacent figure. In order to accurately monitor ground water at Area 2 and Area 3, COMAR 26.13.07.23 regulation requires monitoring and sampling to be performed on a semi-annual basis. Semi-annual sampling will include both upgradient and downgradient monitoring wells, and the sampling will be used to compare the results with upgradient concentrations.

2.3.3 Monitoring of Areas 4 and 5

In the Area 5 evaluation (Figure 2.3), monitoring well 2B shall continue to be designated as the upgradient well for Area 5, and monitoring wells 2D and 2F designated as the downgradient wells as defined in COMAR 26.13.05.06.

In the Area 4 evaluation (Figure 2.3), monitoring well 2H shall continue to be designated as the upgradient monitoring well for Area 4, formerly known as the "Trough Area." Wells 2E and 2G will be the downgradient monitoring wells for this evaluation, as defined in COMAR 26.13.05.06.

Figure 2.3—Well Locations in Hawkins Point for Areas 4 and 5



2.3.4 Monitoring of Areas 2 and 3

Area 2 and Area 3 upgradient wells (R, S, and Y) and downgradient wells (M, W, and Z) will be monitored on a semi-annual basis and analyzed for the parameters specified in Section 2.2.1 and under 40 CFR 265.90-.94 (40 CFR 265.92—Sampling and Analysis).

Areas 2 and 3 meet the requirements for interim status under COMAR 26.13.07.23, which states a facility must comply with the following:

> (1) An owner or operator of a facility identified in COMAR 26.13.06.01A may qualify for interim status and may operate as if the owner or operator has a CHS permit if the owner or operator has complied with the requirements of:
>
> > (a) §3010(a) of RCRA, pertaining to notification of hazardous waste activity, if applicable;
> >
> > (b) COMAR 26.13.06.01B, governing submission of part A CHS permit applications; and
> >
> > (c) §B of this regulation (Operation During Interim Status).

COMAR 26.13.06.06 defines groundwater protection required for interim status, which incorporates 40 CFR 265.90- 265.94 Subpart F-Ground Water Monitoring. Specifically within 40 CFR 265.90:

> "(c) all or part of the ground water monitoring requirements of this subpart may be waived; if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells or surface water."
>
> "(e)(2) the ground water monitoring requirements of this subpart may be waived with respect to any surface impoundment that contains no other hazardous wastes. If the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment by collecting ground water samples at least semi-annually and analyzing for indicator parameters."

Area 2 and 3 data will be collected for laboratory analysis and these results for both total chromium and hexavalent chromium will be detailed in the submission of the semi-annual report.

2.3.5 Use of Data for Statistical Evaluation of Areas 4 and 5

Historical data from the upgradient wells will continue to be used to establish background data for the statistical evaluations explained in Section 4.5. The four semi-annual replicates from each down-gradient well shall be compared to the combined pool of current and historical replicates from the upgradient well.

The historical replicates from the upgradient well shall not be averaged prior to use in the ANOVA procedure. The total sample size is 24 data points, as described in Section 2.4.5 (1):

- Area 4 and Area 5 upgradient (background) data consist of four data points from the current semi-annual monitoring and the 12 data points from the three most previous monitoring events.

- Area 4 and Area 5 downgradient data consist of four data points from the current semi-annual monitoring of each of the two downgradient wells.

2.3.6 Comparison of Each Constituent in the Compliance Wells to the Upgradient Wells for Areas 4 and 5

Once Area 4 and Area 5 semi-annual analyses are completed, each constituent is compared to the same constituent in the background data. A statistical evaluation per constituent is performed following the procedures outlined in Section 2.4 on a semi-annual basis.

2.4 STATISTICAL EVALUATION FOR AREAS 4 and 5

This section contains procedures for performing a comparison of upgradient and downgradient (compliance) groundwater analytical results to determine whether a statistically significant increase is present. The procedures include those listed below. The references provided are specific to the sections found in *Statistical Analysis of Ground Water Monitoring at RCRA Facilities (Unified Guidance)*, March 2009 (EPA 530/R-09-007).

2.4.1 Parametric ANOVA Statistical Method

The method of statistical analysis is the Parametric ANOVA, which is a USEPA-approved statistical method under 40 CFR Part 258.53(h) and (i) and complies with 40 CFR Part 264.97. The parametric ANOVA is based on a direct comparison of the upgradient well mean and each compliance well mean at a given time. Using the parametric ANOVA followed by a post hoc comparison determines if an actual difference in groundwater quality exists for a given sampling period among a group of wells.

The parametric ANOVA assumes that the data are normally distributed and have equal variances. Two tests will determine if the data follow those assumptions. If not, the data will be statistically evaluated using a non-parametric ANOVA.

2.4.2 Evaluation of Non-Detected Parameters

A. If less than 15 percent of the observations are below the Practical Quantification Limit (PQL), each data point that is below detection will be replaced by one half of its Practical Quantification Limit (PQL/2) . If, after this substitution, these data are normal by the Shapiro-Wilk statistic (Section 10.5.1: EPA 530/R-09-007) and have equal variances by Levine's test (Section 11.2: EPA 530/R-09-007), proceed with the parametric ANOVA for that parameter.

B. However, if greater than 15 percent of the observations are below the PQL, a non-parametric ANOVA method shall be used, in all cases, to statistically evaluate the data. In the non-parametric ANOVA, all observations are ordered and replaced by their numeric rank.

2.4.3 Normal and Lognormal Distribution

The Shapiro-Wilk test shall be used to determine whether the observations follow a normal distribution. If the test statistic is greater than a critical value, the data are normal. However, if the test rejects the data, the data shall be natural log (Ln) transformed and retested for a normal distribution.

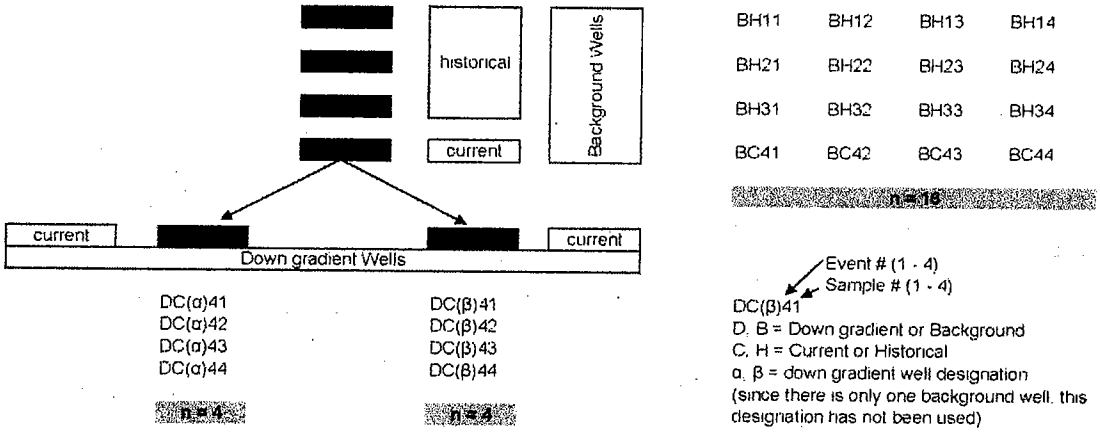
2.4.4 Equality of Variances

To determine if the different wells have similar variances, Levene's test shall be used following the procedures and examples in Section 11.2 of EPA 530/R-09-007.

Levene's test involves running a standard one-way ANOVA on the variables. If the *F*-test is significant, reject the hypothesis of equal well variances.

2.4.5 ANOVA Procedures

1. Arrange the data (or the natural log of data if the data are shown by the above tests to be lognormal) according to the following scheme and follow the procedures for the ANOVA in Section 17.1.1 of EPA 530/R-09-007.



2. Record the number of observations *N*,

   N = total number of observations

   here $N = n_1 + n_2 + n_3$ where n_1 = the number of observations for the upgradient well, and n_2 and n_3 = the number of observations for each compliance well

   $N = 16 + 4 + 4 = 24$ well results: four current upgradient well results; eight current downgradient well results (four from each of two wells) and 12 historical well results

3. Obtain the calculated *F* statistic, according to Section 17.1.1 of EPA 530/R-09-007.

4. If and only if the calculated *F* ratio exceeds the tabulated *F* ratio should post hoc comparisons be made; otherwise conclude that there is no significant statistical difference (well means are the same) among the wells at the given time period.

2.4.6 Procedures for Post Hoc Comparison

To compute the applicable post hoc comparisons, use the Bonferroni *t*-statistics as detailed in Sections 17.1.2 and 17.1.1 of EPA 530/R-09-007. This must be performed for each upgradient and downgradient well considered where either the parametric or nonparametric tests indicate an SSI.

2.4.7 Non-Parametric ANOVA

The non-parametric ANOVA procedure shall be used when:

1) The data do not follow a normal or lognormal distribution, or

2) The data has unequal variances between wells, or

3) Greater than 15 percent of the observations are below the laboratory PQL.

Under this procedure, the Kruskal-Wallis test (Section 17.1.2: EPA 530/R-09-007) is used to determine if there is a statistically significant increase among the wells.

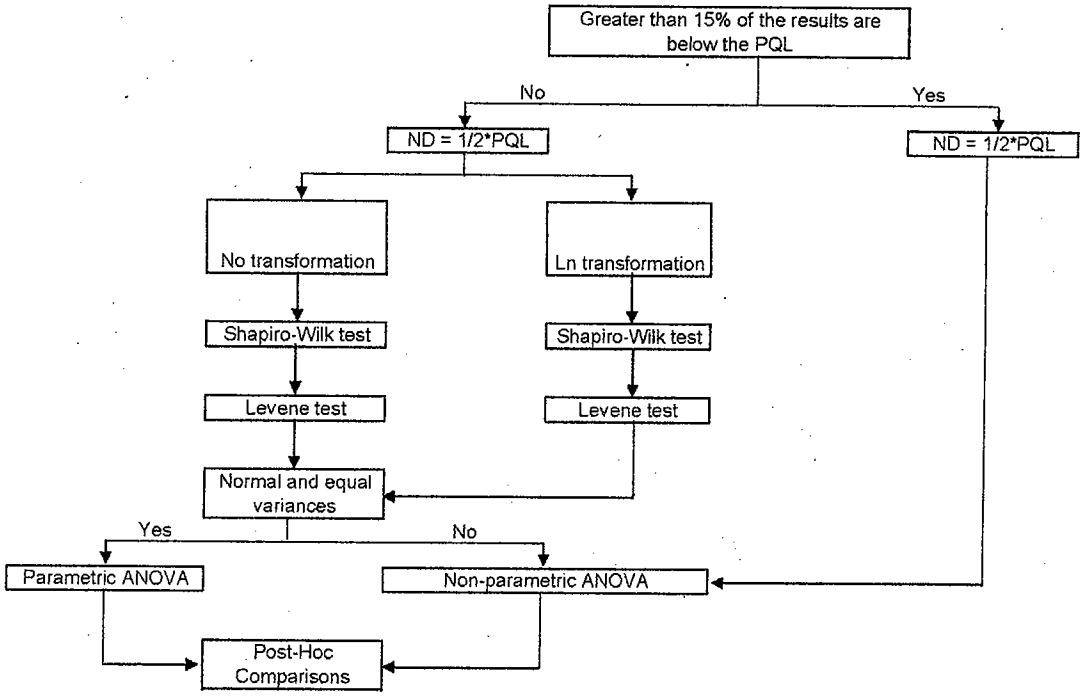
2.4.8 Kruskal-Wallis Procedures

The procedures for the Kruskal-Wallis Test are detailed in Section 17.1.2 (EPA 530/R-09-007).

1) The adjusted Kruskal-Wallis statistics must be adjusted for ties as stipulated in Section 17.1.2 (EPA 530/R-09-007).

2) Compute the differences between each compliance well's average rank and the corresponding upgradient well average rank. If this difference for any well exceeds the critical difference, then conclude that there is an SSI in that particular well.

A schematic of the most commonly used approach is provided below.



Untransformed data are used if both the ln transformed and untransformed data are normal (Shaprio-Wilk test) and have equal variances (Levene's test).

2.4.9 Statistically Significant Evidence of Contamination

Within 30 days after receiving the analytical results from the last replicate taken for that semi-annual event, it will be determined whether there is a statistically significant increase of contamination for the Hawkins Point target parameters of total chromium and hexavalent chromium in a well designated as a down gradient well.

If it is determined a statistically significant increase is present for either or both of the total chromium and hexavalent chromium constituents then the following procedures will be followed, as specified in COMAR 26.13.05.06:

1) First, provide written notification to the MDE of the SSI within seven (7) days of the intent to demonstrate an alternate cause of the statistically significant increase (SSI).

2) Second, submit to the MDE within 90-days, a report, which demonstrates a source other than the regulated unit, caused the SSI or the apparent noncompliance with the standards resulted from an error in sampling, analysis, or evaluation, or from natural variation in the groundwater. If the SSI is not attributable to the foregoing, then:

a) Within 90-days of this report, submit to the MDE an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and,

b) Continue to monitor in accordance with the compliance monitoring program established in this permit.

3) Third, if Sections 2.4.9 (2) (a and b) are implemented, then submit to the MDE an application for a permit modification to establish a corrective action program which meets the requirements of COMAR 26.13.05.06-6 within 180-days; or within 90-days if an engineering feasibility study has been previously submitted to the MDE. This application shall include:

a) A detailed description of the corrective actions that will achieve compliance with the groundwater protection standard in accordance with COMAR 26.13.05; and

b) A plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action, and that may be based on a compliance monitoring program developed to meet the requirements of COMAR 26.13.05.

2.5 DETERMINING THE SAMPLING INTERVAL

To determine the sampling interval, hydrogeologic conditions of the regulated unit were evaluated to determine the groundwater flow velocity. Using the calculated seepage velocity, the sampling interval is generated, following the information contained in the 1985 Black & Veatch Hydrogeologic Assessment Report.

For Areas 4 and 5, the estimated seepage velocity was calculated as 0.014 feet/day (0.168 inches/day) for Area 5 and 0.136 feet/day (1.632 inches/day) for Area 4 (Trough Area). Therefore, the average minimum time required for an independent sample of groundwater to pass through the 4-inch-diameter well is as follows:

Minimal time required for Area 4 (Trough Area) is D/V_h=(4 inches/1.632 inches/day) = 2.5 days

Minimal time required for Area 5 is D/V_h = (4 inches/0.168 inches/day) = 23.8 days

2.6 SAMPLING INTERVAL PROCEDURES AND FREQUENCY

To assure that all samples are taken within accordance of COMAR 26.13.05.06-5A(8), a sequence of four samples will be collected from each of the six wells in both Area 5 (2B, 2D, and 2F) and the Area 4 (2E, 2G, and 2H) beginning in the first and third quarters of each calendar year. The sampling events will take place beginning in the first and third quarters of each year where samples will be collected at all wells every 30 days. This interval is greater than the minimal intervals calculated in Section 2.5, and theremore meets the interval requirements.

For Areas 4 and 5, on the first day of the sampling event, all field information including depth to water, date, time, and sampler's initials shall be documented in a field notebook. Then the wells are sampled using the sampling procedures outlined in this permit. All field information such as pH readings, specific conductivity readings, temperature, date/time, and sampler's initials shall be recorded in a field notebook. Field data will be reviewed and submitted in the semi-annual reports. This set of samples will be the first replicate. These data shall be reviewed in detail if the investigation of an SSI becomes necessary, but will not be routinely reported except upon request.

In accordance with COMAR 26.13.06, Area 2 and Area 3 samples will be collected from all wells (R, S,Y, M,W, and Z) one time in first quarter and one time in the third quarter. On the first day of the sampling event, all field information including depth to water, date, time, and sampler's initials shall be documented in a field notebook. Then the wells are sampled using the sampling procedures outlined in this permit. All field information such as pH readings, specific conductivity readings, temperature, date/time, and sampler's initials shall be recorded in a field notebook. Field data will be reviewed and submitted in the semi-annual reports.

The sampling frequency for all Areas shall remain semi-annual until at least 30 years from the date of closure.

2.7 PROPOSED METHOD FOR DATA ORGANIZATION AND PRESENTATION

2.7.1 Data Organization

Upon receiving the data from the contract laboratory, it will be reviewed against the chain of custody. This will assure the samples were analyzed for the proper group of parameters. The field blanks, trip blanks, equipment blanks, and duplicates will be reviewed. There will be four independent samples (replicates) used to establish a statistical profile of the groundwater in Areas 4 and 5.

There will be no statistical evaluation of the VOCs.

2.7.2 Semi-Annual Data Submission Package

MES will prepare a report detailing the results of the semi-annual sampling events.

A copy of the data as received from the contract laboratory, individual well spreadsheets, statistical evaluations of the sampling event, and a summary or interpretation of the data will be submitted to MDE 30 days after the final data report is received from laboratory. The report deadlines to MDE will be as follows:

The semi-annual groundwater-monitoring reports will be submitted by the end of each semi-annual monitoring period. The deadline for submittal of the first semi-annual report will be June 18 of each calendar year, and the deadline for submittal of the second semi-annual report will be December 18 of each calendar year.

The semi-annual groundwater-monitoring samples will be collected on a 30-day cycle as noted below:

- Collect replicate 1 in January
- Collect replicate 2 in February
- Collect replicate 3 in March
- Collect replicate 4 in April

After completion of sample collection, data will be received from the last event in May; the first semi-annual report will be due by June 18.Within the third quarter of the year, the secondary sampling will commence. Groundwater-monitoring samples will be collected on a 30-day cycle as noted below:

- Collect replicate 1 in July
- Collect replicate 2 in August
- Collect replicate 3 in September
- Collect replicate 4 in October

After completion of the secondary sampling, data will be received from last event in November; the second semi-annual report will be due by December 18th.

A copy of these data packages will also be filed onsite.

ATTACHMENT 6

POST-CLOSURE INSPECTIONS AND MAINTENANCE

CHS PERMIT APPLICATION SECTION 3

POST-CLOSURE INSPECTIONS AND MAINTENANCE

3.1 General

Per COMAR 26.13 and 40 CFR Part 260, MES will maintain adequate staff to administer activities during post-closure at this facility. The site will remain in post-closure status for a minimum period of 30 years. The post-closure care activities include:

- Environmental monitoring;
- Inspection and maintenance of the facility;
- Leachate collection for offsite management; and
- Site security.

3.1.1 Environmental Monitoring

A post-closure environmental monitoring program, as detailed in CHS permit application Section 2.0, will be implemented while the site is in post-closure status.

3.1.2 Inspection and Maintenance of the Facility

The facility includes Areas 2, 3, 4, and 5 and associated hazardous waste collection systems. Inspections will be performed by qualified MES personnel as indicated in the Inspection Logs provided as pages 3-6 through 3-8, below. The inspection findings will be recorded on these logs, and the logs will be maintained on file and available for review at Hawkins Point. Information which will be entered on the inspection logs include, but are not limited to:

- The inspector's name and job title;
- The date and time of the inspection;
- Ambient weather conditions at the time of the inspection;
- A description of the items inspected;
- The current status of each inspection item;
- All observations; and,
- The date and nature of repairs or remedial action needed.

The inspection logs will indicate whether the condition of each inspected item is acceptable or unacceptable. If the status of any item proves unacceptable, it will be reported immediately to the Site Superintendent for prompt initiation of repairs and/or remedial action procedures.

These inspections are divided into daily and monthly events and address:

A. Drainage swales: bank erosion, clogging, obstructions, excessive silting, loose rip-rap, inadequate vegetation.

B. Final cover on Areas 2, 3, 4, and 5: any settling, subsidence, and erosion.

C. Groundwater-monitoring wells and locks: corrosion, damage, and accessibility.

D. Potential presence of leachate on the ground surface (i.e., staining, stressed vegetation, or wet soils).

E. Access, entrance, and haul roads: deterioration, rutting, erosion, cracks, and loss of aggregate, evidence of contamination.

F. Thom's Cove sediment settling ponds: erosion, cracks, passage of sediment, deterioration, height of sediment, inadequate vegetation.

G. Trailer and equipment storage area: locks on storage structures; condition of pumps, hoses, field equipments, and supplies; and operation of water supply and electric utilities.

H. Permanent survey benchmarks

I. Septic tanks: damage or deterioration to waste conveyance or vent pipes.

J. Yard and fire hydrants: leakage and potential damage to valve caps.

3.1.3 Remedial and Corrective Actions

Any damaged infrastructure or needed maintenance observed and recorded during the scheduled inspections will be addressed expeditiously if there is any apparent danger to human health or the environment. If a hazardous situation is imminent, remedial action procedures will be followed in accordance with the Contingency Plan detailed in Attachment 4. Safety supplies and equipment as specified in Attachment 6 (HASP) will be onsite at all times and will be inventoried as a component of facility post-closure care and inspections.

Other repairs will be addressed as a component of routine operations and maintenance activities. Repairs exceeding $10,000 may be scheduled for subsequent fiscal years depending on availability of current-year funding.

3.1.4 Leachate Collection and Management

MES will perform the following inspections and evaluations on the leachate holding tank and the leachate collection system:

A. Interior of the leachate holding tank: cleaned and visually inspected during each odd-numbered year.

B. Leachate collection lines: periodic jetting and cleaning of the leachate lines, breaks, leaks or clogs, deterioration, cracks or deterioration of manholes.

C. Leachate holding and transfer area: deterioration of concrete containment, access manholes; corrosion or blockage of grating; cracks in spill pad; damaged pumps; damaged or non-waterproof electric boxes; and corrosion or damage of roof structure.

D. Leachate collection mechanical and electrical systems including pumps: inspected and maintained quarterly to maintain system collection efficiency.

3.1.5 Contact for Post-Closure Care

The following individual is designated to be the required contact person regarding post-closure care:

NAME:	Aimee Warner
ADDRESS:	259 Najoles Road Millersville, MD 21108
TELEPHONE:	(410) 729-8309 (office) (410) 507-2824 (cell)

3.2 NOTICE IN DEED AND NOTICE TO LOCAL LAND AUTHORITY

MES recorded a notation on the deed to the facility property that notified any potential purchaser of the property the following:

A. The property has been used to manage hazardous wastes.

B. A plat and records indicating the type, location, and quantity of hazardous wastes handled within the facility have been filed with the City of Baltimore, Zoning Enforcement Division, and with MDE.

3.3 POST-CLOSURE COST ESTIMATE

The post-closure cost estimate has been prepared using December 2012 dollars. The inflation factor to be used is the Department of Commerce, Annual Implicit Price Deflator for Gross National Product. A breakdown of the closure cost is presented in Table 3.1. The estimated post-closure care costs for the landfill activities during the post-closure period include those for facility inspection, boundary maintenance, and security measures, and do not include costs for any capital improvements or remedial actions.

Table 3.1—
Areas 2, 3, 4, and 5 Hawkins Point Hazardous Waste Landfill
Annual Post-Closure Care Cost in 2012 Dollars

Activity	Cost ($)
Facility management	250,000
Environmental monitoring	200,000
Leachate handling (labor)	150,000
Facility inspection	50,000
Erosion control	30,000
Boundary maintenance	10,000
Routine maintenance	25,000
Security measures	10,000
Leachate disposal (varies)	650,000*
Facility permit fee	43,000
Other contracts	120,000
Per-year subtotal for post-closure	1,838,000
Contingency (add 5%)	1,929,900

*Leachate Disposal Costs Represent a 10-year average

3.4 FINANCIAL ASSURANCE MECHANISM FOR CLOSURE AND POST-CLOSURE

The Hawkins Point Hazardous Waste Facility is owned and operated by an agency of the State of Maryland. In accordance with 49 CFR 264.140c of the federal regulations, states and the federal government are exempt from the requirements of Subpart H, Financial Requirements. MES is an agency of the State of Maryland and is therefore exempt from this requirement.

3.5 LIABILITY INSURANCE REQUIREMENTS

The Hawkins Point Hazardous Waste Facility is owned and operated by an agency of the State of Maryland. In accordance with 49 CFR 264.140c of the federal regulations, states and the federal government are exempt from the requirements of Subpart H, Financial Requirements. MES is an agency of the State of Maryland and is therefore exempt from this requirement.

Hawkins Point Hazardous Waste Landfill – Daily Inspection Form

Inspector Name: _____ Date/Time: _____

Weather Conditions: _____

A. Aboveground Storage Tank

1. Are all parts of the tank and associated piping free of corrosion and leaks? YES/NO
2. Is the secondary containment in good condition and free of wet spots, staining or cracking? YES/NO
3. Has precipitation been removed from the secondary containment area? YES/NO
4. Are the pumps operating well in the sump and adequately maintaining leachate levels in the sump? YES/NO
5. If a frac tank is in use, are the hoses secure and tank properly labeled? YES/NO
6. Has the AST overfill alarm been tested in the last 7 days? YES/NO
   a. Date of last test: _____
7. Level of frac tank _____: Level of AST _____

B. Zipper Drain/Loading Area

1. Is the area in good condition? YES/NO
2. Is the zipper drain clean and free of debris and sediment? YES/NO
3. Number of drums being stored in the area. _____

C. Containers

1. Are all containers onsite storing hazardous waste properly labeled with the accumulation start date and contents? YES/NO
2. Have any containers been onsite longer than 75 days? YES/NO
3. Are all containers on secondary containment or spill pallets? YES/NO
4. Are all containers closed and in good condition? YES/NO

Describe any observations for items marked NO: _____

_____

Corrective Actions Required: _____

_____

_____

Hawkins Point Hazardous Waste Landfill – Monthly Inspection Form

Inspector Name: _____ Date: _____

Weather Conditions: _____

Drainage Swales

1. Are all swales free of;
   a. Erosion YES/NO
   b. Obstructions YES/NO
   c. Excessive Silting YES/NO
   d. Loose rip-rap YES/NO
   e. Inadequate vegetation YES/NO

Groundwater Monitoring Wells

1. Are all groundwater monitoring wells locked? YES/NO
2. Are all monitoring well free of corrosion and damage? YES/NO

Fire Hydrants, Extinguishers and Suppression System

1. Are fire hydrants free of leaks? YES/NO
2. Is there any potential damage to the valve caps? YES/NO
3. Is Fire Suppression system working? YES/NO
4. Is the extinguisher visible, unobstructed, and in its designated location? YES/NO
5. Is the fire extinguisher in good condition? Examine the extinguisher for obvious physical damage, corrosion, leakage, or clogged nozzle and conform that the locking pin is intact and the tamper seal is unbroken. YES/NO
6. Is the pressure gauge or indicator in the operable range or position? YES/NO
7. Lift the extinguisher, is it still full? YES/NO
8. Are the operating instructions on the nameplate legible and facing outward? YES/NO
9. Check the last professional service date on the tag. Has a licensed fire extinguisher maintenance contractor inspected the extinguisher within the past 12 months? YES/NO

Survey Bench Marks

1. Are survey bench marks in good condition? YES/NO

Landfill Cover- Areas 2, 3 and 5

1. Is there any settling, subsidence or erosion? YES/NO
2. Are there signs of animal burrows on landfill cover areas? YES/NO
3. Is there the potential presence of leachate on the ground surface (i.e. staining, stressed vegetation or wet soils)? YES/NO

Access Roads

1. Are all roads in good condition and free of deterioration, rutting, erosion, cracks or loss of aggregate? YES/NO

Security

1. Is the fence surrounding the facility in good condition and free of holes? YES/NO
2. Are all locks in good condition and operating properly? YES/NO
3. Are operational locks located on all storage structures? YES/NO
4. Are warning signs legible and in good condition? YES/NO

Describe any observations for items marked NO: _____

_____

_____

Corrective Actions Required: _____

_____

_____

ATTACHMENT 7

WASTE STORAGE PROCESS INFORMATION

CHS PERMIT APPLICATION SECTION 7

WASTE STORAGE PROCESS INFORMATION

7.1 LEACHATE COLLECTION SYSTEM

Hawkins Point leachate collection management activities will be performed on an as-needed basis. Precipitation or changing site conditions may dictate changes or increases in leachate management activities.

Hawkins Point has two separate leachate collection/underdrain systems. One system drains the chrome ore cells in Areas 2 & 3 and the second system drains the chrome ore cells in Area 5. These collection systems consist of polyvinyl chloride (PVC) pipe headers and lateral collection pipes. The laterals are six inch diameter solid PVC pipe which carry the leachate by gravity to separate leachate sumps. Flow into these leachate sumps can be stopped by closing valves located between the final collection system manhole and the sump.

The leachate sumps are accessed via a single manhole adjacent to the leachate loading area. The Area 5 and Areas 2 & 3 sumps are separated by a concrete dividing wall within the access manhole. Each sump is equipped with a single pump and level instrumentation for leachate flow control and transfer. Failure of either sump pump will result in the spilling over of leachate from one sump into the other. Leachate from each sump is pumped into the holding tank through schedule 80 PVC double-walled piping with a two inch inner pipe and a three inch outer pipe.

MES maintains remote-monitoring equipment for the leachate collection system to ensure site safety, regulatory compliance, and accurate leachate quantity tracking. Should the leachate collection tank ever be taken offline, MES will ensure tank-system closure is completed in accordance with COMAR 26.13.05.10-7.

7.2 LEACHATE HOLDING TANK

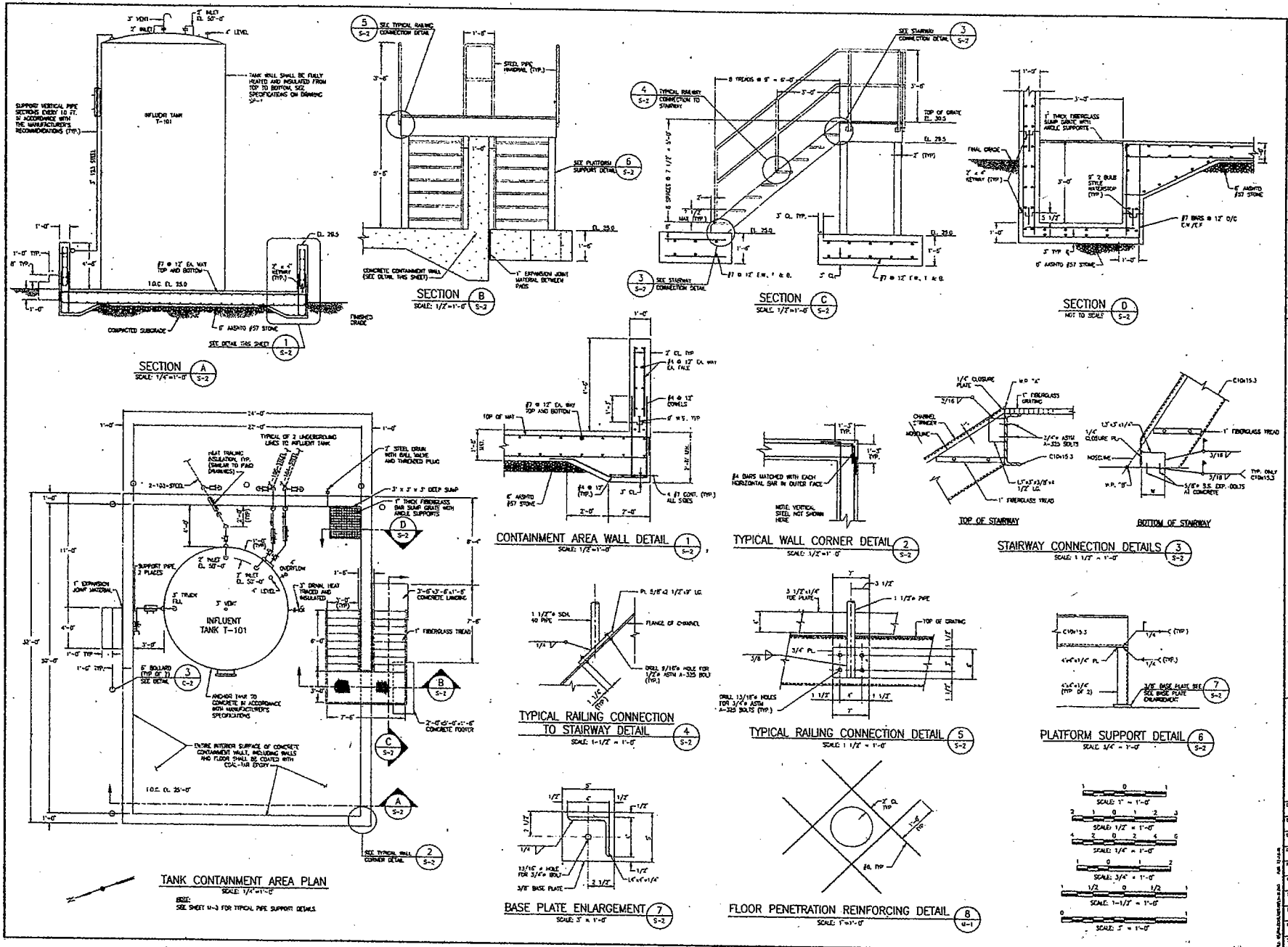
The leachate is collected into a holding tank manufactured by Xerxes (Model Number 1221F) with a total capacity of 21,573 gallons. The tank is equipped with a Corrosion Barrier of Vinylester Resin with Nexis and its structure is composed of Isophthalic Resin with Gray Pigmented Exterior. The holding tank is held within a concrete secondary containment area (22' x 30' x 4.5') which provides containment for both the 21,573 gallon capacity of the tank and an additional 5.8 inches of rainfall (25-year storm with precipitation over 24-hours). Stormwater that accumulates within the secondary containment area is pumped to the zipper drain that flows to the sump and is then pumped into the holding tank.

Additional Hawkins Point Holding Tank Design Specifications are enclosed at the end of this section.

7.3 LEACHATE TRANSFER AND WASTE PICK-UP

Once transferred inside the holding tank, the leachate is temporarily held until a waste pick-up is scheduled with EQ the Environmental Quality Company. EQ is both RCRA and DOT certified in Hazardous Waste Management, and is responsible for the transfer of leachate from the Hawkins Point holding tank into a DOT certified waste transport vehicle and the transportation of the leachate to the certified treatment facility in York, Pa. Each of these events is tracked through the completion of a Uniform Hazardous Waste Manifest. All pick-ups are scheduled by MES staff, and frequency of these is determined through daily observation and recording of the leachate level within the tank.

The holding tank is designed with four inch couplings on the north side of the tank to allow tanker trucks to remove the leachate. Exposed piping within the tank containment area is wrapped with heat tape to eliminate the potential for freezing during the winter months. All leachate transfer from the holding tank into the waste hauling tanker trucks are completed in the wash rack adjacent to the holding tank. The wash rack area contains two zipper drains underneath a canopy, which allow for any potentially contaminated materials to be drained into the zipper drains and then subsequently drained by gravity into the aforementioned leachate collection sumps. Loading of the leachate from the holding tank requires staff to spot the tanker truck within the wash rack area in order to ensure proper containment in the event of a spill.



MARYLAND ENVIRONMENTAL SERVICE
LEACHATE TREATMENT FACILITY
HAWKINS POINT
BALTIMORE, MARYLAND

TANK CONTAINMENT STRUCTURAL PLAN AND DETAILS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
Lawson Center
15 Lawson Circle
Sparks, Maryland 21152
(410) 771-4950

DATE	16 DECEMBER 1996
DESIGNED BY	CMD
DRAWN BY	MDM
CHECKED BY	DSS
PROJECT MANAGER	CJR
PROJECT NUMBER	80842.02
SCALE	AS SHOWN
FILE NAME	S-2BLDG
DRAWING NUMBER	S-2
SHEET NUMBER	12 OF 24

ATTACHMENT 8

PERMIT APPLICATION PART A

RECEIVED

MAY

OMB# 2050-0024; Expires 12/31/2014

SEND COMPLETED FORM TO: The Appropriate State or Regional Office.

WASTE DIVERSION UTILIZATION PROGRAM

United States Environmental Protection Agency

RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (MARK ALL BOX(ES) THAT APPLY)

Reason for Submittal:

- ☐ To provide an Initial Notification (first time submitting site identification information / to obtain an EPA ID number for this location)
- ☐ To provide a Subsequent Notification (to update site identification information for this location)
- ☐ As a component of a First RCRA Hazardous Waste Part A Permit Application
- ☑ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____)
- ☐ As a component of the Hazardous Waste Report (If marked, see sub-bullet below)
  - ☐ Site was a TSD facility and/or generator of ≥1,000 kg of hazardous waste, >1 kg of acute hazardous waste, or >100 kg of acute hazardous waste spill cleanup in one or more months of the report year (or State equivalent LQG regulations)

2. Site EPA ID Number

EPA ID Number: M D D 0 0 0 7 3 1 3 5 6

3. Site Name

Name: Hawkins Point Hazardous Waste Landfill

4. Site Location Information

Street Address: 5501 Quarantine Road

City, Town, or Village: Baltimore | County: Baltimore City

State: Maryland | Country: United States | Zip Code: 21226

5. Site Land Type

☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☑ State ☐ Other

6. NAICS Code(s) for the Site (at least 5-digit codes)

A. 9 2 4 1 1 0 | C. | B. | D.

7. Site Mailing Address

Street or P.O. Box: Maryland Environmental Service, 259 Najoles Road

City, Town, or Village: Millersville

State: Maryland | Country: United States | Zip Code: 21108

8. Site Contact Person

First Name: Aimee | MI: | Last: Warner

Title: Senior Engineer

Street or P.O. Box: Maryland Environmental Service, 259 Najoles Road

City, Town or Village: Millersville

State: Maryland | Country: United States | Zip Code: 21108

Email: awarn@menv.com

Phone: 410-729-8200 | Ext.: 8309 | Fax: 410-729-8340

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner: Maryland Port Administration (MPA) | Date Became Owner: 07/03/1958

Owner Type: ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☑ State ☐ Other

Street or P.O. Box: MPA, World Trade Center, Attn: Barbara McMahon, 401 East Pratt Street, Suite 1653

City, Town, or Village: Baltimore | Phone:

State: Maryland | Country: United States | Zip Code: 21202

B. Name of Site's Operator: Maryland Environmental Service | Date Became Operator: 7/15/1980

Operator Type: ☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☑ State ☐ Other

10. Type of Regulated Waste Activity (at your site)
Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities; Complete all parts 1-7.

Y ☒ N ☐ **1. Generator of Hazardous Waste**
If "Yes", mark only one of the following – a, b, or c.

- ☒ a. LQG: Generates, in any calendar month, 1,000 kg/mo (2,200 lbs./mo.) or more of hazardous waste; **or** Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lbs./mo) of acute hazardous waste; **or** Generates, in any calendar month, **or** accumulates at any time, more than 100 kg/mo (220 lbs./mo) of acute hazardous spill cleanup material.
- ☐ b. SQG: 100 to 1,000 kg/mo (220 – 2,200 lbs./mo) of non-acute hazardous waste.
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo) of non-acute hazardous waste.

If "Yes" above, indicate other generator activities.

Y ☐ N ☒ d. Short-Term Generator (generate from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section.

Y ☐ N ☒ e. United States Importer of Hazardous Waste

Y ☐ N ☒ f. Mixed Waste (hazardous and radioactive) Generator

Y ☐ N ☒ **2. Transporter of Hazardous Waste**
If "Yes", mark all that apply.
- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☒ N ☐ **3. Treater, Storer, or Disposer of Hazardous Waste** Note: A hazardous waste permit is required for these activities.

Y ☐ N ☒ **4. Recycler of Hazardous Waste**

Y ☐ N ☒ **5. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark all that apply.
- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☒ **6. Underground Injection Control**

Y ☐ N ☒ **7. Receives Hazardous Waste from Off-site**

B. Universal Waste Activities; Complete all parts 1-2.

Y ☐ N ☒ **1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste managed at your site. If "Yes", mark all that apply.**

- a. Batteries ☐
- b. Pesticides ☐
- c. Mercury containing equipment ☐
- d. Lamps ☐
- e. Other (specify) _____ ☐
- f. Other (specify) _____ ☐
- g. Other (specify) _____ ☐

Y ☐ N ☒ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities; Complete all parts 1-4.

Y ☐ N ☒ **1. Used Oil Transporter**
If "Yes", mark all that apply.
- ☐ a. Transporter
- ☐ b. Transfer Facility (at your site)

Y ☐ N ☒ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark all that apply.
- ☐ a. Processor
- ☐ b. Re-refiner

Y ☐ N ☒ **3. Off-Specification Used Oil Burner**

Y ☐ N ☒ **4. Used Oil Fuel Marketer**
If "Yes", mark all that apply.
- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

D. **Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K**

- You must check with your State to determine if you are eligible to manage laboratory hazardous wastes pursuant to 40 CFR Part 262 Subpart K

☐ 1. Opting into or currently operating under 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories **See the item-by-item instructions for definitions of types of eligible academic entities. Mark all that apply:**

☐ a. College or University

☐ b. Teaching Hospital that is owned by or has a formal written affiliation agreement with a college or university

☐ c. Non-profit Institute that is owned by or has a formal written affiliation agreement with a college or university

☐ 2. Withdrawing from 40 CFR Part 262 Subpart K for the management of hazardous wastes in laboratories

11. Description of Hazardous Waste

A. **Waste Codes for Federally Regulated Hazardous Wastes.** Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

D002	D007					

B. **Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes.** Please list the waste codes of the State-Regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

12. Notification of Hazardous Secondary Material (HSM) Activity

Y ☐ N ☒ Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 261.2(a)(2)(ii), 40 CFR 261.4(a)(23), (24), or (25)?

If "Yes", you must fill out the Addendum to the Site Identification Form: Notification for Managing Hazardous Secondary Material.

13. Comments

Item 10 - No Hazardous Waste Permit Required, See 40 CFR 270.60.C permit by rule.

14. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. For the RCRA Hazardous Waste Part A Permit Application, all owner(s) and operator(s) must sign (see 40 CFR 270.10(b) and 270.11).

Signature of legal owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)
James R. Harkins	James Harkins, Director MES	3-16-2011

EPA ID Number | M | D | D | 0 | 0 | 0 | 7 | 3 | 1 | 3 | 5 | 6 |

OMB#: 2050-0024; Expires 12/31/2014

United States Environmental Protection Agency

HARDOUS WASTE PERMIT INFORMATION FORM

1. Facility Permit Contact	**First Name:** Aimee	**MI:**	**Last Name:** Warner
	Contact Title: Senior Engineer		
	Phone: 410-729-8200	**Ext.:** 8309	**Email:** awarn@menv.com
2. Facility Permit Contact Mailing Address	**Street or P.O. Box:** Maryland Environmental Service, 259 Najoles Road		
	City, Town, or Village: Millersville		
	State: Maryland		
	Country: United States	**Zip Code:** 21108	
3. Operator Mailing Address and Telephone Number	**Street or P.O. Box:** Maryland Environmental Service, 259 Najoles Road		
	City, Town, or Village: Millersville		
	State: Maryland	**Phone:** 410-729-8200	
	Country: United States	**Zip Code:** 21108	
4. Facility Existence Date	**Facility Existence Date (mm/dd/yyyy):**		

5. Other Environmental Permits

A. Facility Type *(Enter code)*	B. Permit Number	C. Description
	0 2 S W	State of Maryland General Stormwater Discharge Permit
	A - 2 6 4	CHS Permit

6. Nature of Business: Hazardous waste landfill in post closure monitoring.

7. Process Codes and Design Capacities – Enter Information in the Section on Form Page 3

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item 8.

B. PROCESS DESIGN CAPACITY – For each code entered in item 7.A; enter the capacity of the process.

1. AMOUNT – Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.
2. UNIT OF MEASURE – For each amount entered in item 7.B(1), enter the code in item 7.B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.

C. PROCESS TOTAL NUMBER OF UNITS – Enter the total number of units for each corresponding process code.

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity
Disposal		
D79	Underground Injection Well Disposal	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet; Hectares-meter; Acres; Cubic Meters; Hectares; Cubic Yards
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day or Liters Per Day
D83	Surface Impoundment Disposal	Gallons; Liters; Cubic Meters; or Cubic Yards
D99	Other Disposal	Any Unit of Measure Listed Below
Storage		
S01	Container	Gallons; Liters; Cubic Meters; or Cubic Yards
S02	Tank Storage	Gallons; Liters; Cubic Meters; or Cubic Yards
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons; Liters; Cubic Meters; or Cubic Yards
S05	Drip Pad	Gallons; Liters; Cubic Meters; Hectares; or Cubic Yards
S06	Containment Building Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
Treatment		
T01	Tank Treatment	Gallons Per Day; Liters Per Day
T02	Surface Impoundment	Gallons Per Day; Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Metric Tons Per Hour; or Million BTU Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Short Tons Per Day; BTUs Per Hour; Gallons Per Day; Liters Per Hour; or Million BTU Per Hour
T80	Boiler	Gallons; Liters; Gallons Per Hour; Liters Per Hour; BTUs Per Hour; or Million BTU Per Hour

Process Code	Process	Appropriate Unit of Measure for Process Design Capacity (for T81 – T94)
Treatment (Continued)		
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; Liters Per Hour; Kilograms Per Hour; or Million BTU Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, or Refining Furnace	
T88	Titanium Dioxide Chloride Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR 260.10	
T94	Containment Building Treatment	Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; BTU Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million BTU Per Hour
Miscellaneous (Subpart X)		
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour; or Gallons Per Day
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; BTU Per Hour; or Million BTU Per Hour
X04	Geologic Repository	Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters
X99	Other Subpart X	Any Unit of Measure Listed Below

Unit of Measure	Unit of Measure Code
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Short Tons Per Day	N
Metric Tons Per Hour	W
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	X
Million BTU Per Hour	X
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
BTU Per Hour	I

EPA ID Number | M | D | D | 0 | 0 | 0 | 7 | 3 | 1 | 3 | 5 | 6 |

OMB#: 2050-0034; Expires 7/31/2012

7. Process Codes and Design Capacities (Continued)

EXAMPLE FOR COMPLETING Item 7 (shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY		C. Process Total Number of Units	For Official Use Only					
					(1) Amount (Specify)	(2) Unit of Measure							
X	1	S	0	2	533.788	G	001						
	1	S	0	2	21,573	G	001						
	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
1	0												
1	1												
1	2												
1	3												

Note: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the line sequentially, taking into account any lines that will be used for "other" process (i.e., D99, S99, T04, and X99) in Item 8.

8. Other Processes (Follow instructions from Item 7 for D99, S99, T04, and X99 process codes)

Line Number (Enter #s in sequence with Item 7)		A. Process Code (From list above)			B. PROCESS DESIGN CAPACITY		C. Process Total Number of Units	For Official Use Only					
					(1) Amount (Specify)	(2) Unit of Measure							
X	2	T	0	4	100.00	U	001						
		N	/	A	N/A (Waste not processed on-site)	N/A	N/A						

9. Description of Hazardous Wastes - Enter information in the Sections on Form Page 5

A. **EPA HAZARDOUS WASTE NUMBER** – Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** – For each listed waste entered in item 9.A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in item 9.A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** – For each quantity entered in item 9.B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. **PROCESS CODES:**

For listed hazardous waste: For each listed hazardous waste entered in item 9.A, select the code(s) from the list of process codes contained in items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all listed hazardous wastes.

For non-listed waste: For each characteristic or toxic contaminant entered in item 9.A, select the code(s) from the list of process codes contained in items 7.A and 8.A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. Enter the first two as described above.
2. Enter "000" in the extreme right box of item 9.D(1).
3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in item 9.E.

2. **PROCESS DESCRIPTION:** If code is not listed for a process that will be used, describe the process in item 9.D(2) or in item 9.E(2).

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in item 9.A. On the same line complete items 9.B, 9.C, and 9.D by estimating the total annual quantity of the waste and describing all the processes to be used to store, treat, and/or dispose of the waste.
2. In item 9.A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In item 9.D.2 on that line enter "Included with above" and make no other entries on that line.
3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING item 9 (shown in line numbers X-1, X-2, X-3, and X-4 below) – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number		A. EPA Hazardous Waste No. (Enter code)				B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter Code)								(2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
X	1	K	0	5	4	900	P	T	0	3	D	8	0			
X	2	D	0	0	2	400	P	T	0	3	D	8	0			
X	3	D	0	0	1	100	P	T	0	3	D	8	0			
X	4	D	0	0	2											Included With Above

9. Description of Hazardous Wastes *(Continued. Use additional sheet(s) as necessary; number pages as 5a, etc.)*

Line Number		A. EPA Hazardous Waste No. (Enter code)	B. Estimated Annual Qty of Waste	C. Unit of Measure (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter Code)	D. PROCESSES (2) PROCESS DESCRIPTION (If code is not entered in 9.D(1))
	1	D007	13,839,710.0	P		Not handled at facility
	2	D002	25.0	P		Shipped to PAD010154045
	3					
	4					
	5					
	6					
	7					
	8					
	9					
1	0					
1	1					
1	2					
1	3					
1	4					
1	5					
1	6					
1	7					
1	8					
1	9					
2	0					
2	1					
2	2					
2	3					
2	4					
2	5					
2	6					
2	7					
2	8					
2	9					
3	0					
3	1					
3	2					
3	3					
3	4					
3	5					
3	6					

10. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

11. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

12. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas (see instructions for more detail).

13. Comments

No Hazardous Waste Treatment processes conducted on-site. All hazardous wastes are shipped to Facility (EPA ID) # PAD-010-154-045 for treatment.

All estimated annual waste quantities mentioned above are based on the results contained within the 2009 Biennial Hazardous Waste Reports.

Facility Features

259 Najoles Rd
Millersville, Md
21108

(410)729-8200
(800)473-2925

Hawkins Point

MARYLAND ENVIRONMENTAL SERVICE

Location Map

MARYLAND

1 inch = 200 feet