OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
Lazarus Government Center
122 S. Front Street
Columbus, Ohio 43215

TELE: (614) 644-3020 **FAX:** (614) 644-3184
www.epa.state.oh.us

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

December 29, 2005

Re: Ohio Hazardous Waste Permit Renewal
Envirosafe Services of Ohio, Inc.
U.S. EPA ID No.: OHD 045 243 706
Ohio ID No.: 03-48-0092

CERTIFIED MAIL

Douglas Roberts
Envirosafe Services of Ohio, Inc.
876 Otter Creek Road
Oregon, Ohio 43616

Dear Mr. Roberts:

Here is the renewed Ohio Hazardous Waste Facility Installation and Operation Permit (Permit) for Envirosafe Services of Ohio, Inc. I have also enclosed a copy of the responsiveness summary Ohio EPA prepared in response to written comments the Agency received concerning the Part B permit application. The Permit is effective today, December 29, 2005. The date-stamped, page-numbered copy of the Part B permit application disc is also enclosed.

Please remember that according to Rule 3745-50-36 of the Ohio Administrative Code your annual hazardous waste permit fee of $41,000.00 will be due on December 29, 2006. Ohio EPA will try to notify you before this fee is due, but it is your responsibility to make sure it gets paid on time.

As a party to this permit proceeding, you may appeal this Permit to the Environmental Review Appeals Commission (ERAC) no later than 30 days after the public notice (See Ohio Revised Code § 3745.04). You may file your appeal with ERAC at the following address: Environmental Review Appeals Commission, 309 South Fourth Street, Room 222, Columbus, Ohio 43215.

If you file an appeal, you must put it in writing. Your appeal must explain why you are appealing the action and the grounds you are using for your appeal. You must send a copy of the appeal to the director of the Ohio Environmental Protection Agency no later than three (3) days after you file it with ERAC.

If you have any questions concerning compliance, do not hesitate to call Gary Deutschman of Ohio EPA's Northwest District Office at (419) 352-8461.

Sincerely,

for

Pamela S. Allen, Manager
Regulatory and Information Services
Division of Hazardous Waste Management

Attachments

cc: Edwin Lim, Mgr., ERAS, DHWM, CO
Jeremy Carroll/Chris Hunt, ERAS, DHWM, CO
Harriet Croke, US EPA, Region V
John Pasquarette/Michael Terpinski, DHWM, CO
Mary McCarron, PIC, Ohio EPA
file

PUBLIC NOTICE

Lucas County

OHIO EPA ISSUES FINAL RENEWAL PERMIT
ENVIROSAFE SERVICES OF OHIO, INC.

On December 29, 2005, Ohio EPA issued to Envirosafe Services of Ohio, Inc. (Envirosafe) a final renewal to its Hazardous Waste Facility Installation and Operation Permit (Permit). The facility is located at 876 Otter Creek Road, Oregon, Ohio 43616. The EPA Identification Number for this facility is OHD045243706.

Why Does Envirosafe Need a Permit?

Envirosafe is permitted to operate a hazardous waste landfill and other related hazardous waste management units at its facility. The final renewal Permit contains the conditions under which the facility will continue to operate. This final permit action also authorizes a modification to the facility's closure plan. To issue this final renewal Permit, Ohio EPA determined that the Permit application is complete and meets appropriate standards and that the applicant has a history of compliance with relevant environmental laws. The final renewal Permit allows Envirosafe to continue to operate a hazardous waste landfill and other related management units in the designated areas, and will require Envirosafe to investigate and, if necessary, clean up any contamination from hazardous wastes or constituents that may be at the facility.

Can I appeal this permit?

Yes, if you are an officer of an agency of the state or of a political subdivision, acting in a representative capacity, or any person who would be aggrieved or adversely affected by this Permit, you have the right to appeal this permit decision to the Environmental Review Appeals Commission (ERAC).

If I decide to appeal this final modified Permit, how and when must I make the appeal?

If you file an appeal, you must put it in writing no later than February 1, 2006. Your appeal must explain why you are appealing the action and the grounds you are using for your appeal. You must file your appeal, according to Ohio Revised Code § §3745.04 and 3745.07, with ERAC at the following address: ***Environmental Review Appeals Commission***, 309 South Fourth Street, Room 222, Columbus, Ohio 43215. You must send a copy of the appeal to the director of Ohio EPA at the following address no later than three (3) days after you file it with ERAC: ***Joseph P. Koncelik, Director of Ohio EPA***, P.O. Box 1049, Columbus, Ohio 43216-1049.

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ENTERED DIRECTOR'S JOURNAL

OHIO ENVIRONMENTAL PROTECTION AGENCY

OHIO HAZARDOUS WASTE FACILITY INSTALLATION AND OPERATION PERMIT RENEWAL/MODIFICATION

Permittee:	Envirosafe Services of Ohio, Inc.
Mailing Address:	Envirosafe Services of Ohio, Inc. 876 Otter Creek Road Oregon, Ohio 43616
Owner:	Envirosafe Services of Ohio, Inc. 876 Otter Creek Road Oregon, Ohio 43616
Operator:	Envirosafe Services of Ohio, Inc. 876 Otter Creek Road Oregon, Ohio 43616
Location:	876 Otter Creek Road Oregon, Ohio 43616

Ohio Permit No.: 03-48-0092

US EPA ID: OHD 045 243 706

Issue Date: December 29, 2005

Effective Date: December 29, 2005

Expiration Date: December 29, 2015

AUTHORIZED ACTIVITIES

In reference to the application of Envirosafe Services of Ohio, Inc. for an Ohio Hazardous Waste Facility Installation and Operation Renewal/Modification Permit under Ohio Revised Code (ORC) Chapter 3734 and the record in this matter, you are authorized to conduct at the above-named facility the following hazardous waste management activities:

- **Storage, Treatment and Disposal of Hazardous Waste**
- **Corrective action activities**

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Dorothy Jackson Date 12-29-05

PERMIT APPROVAL

Joseph P. Koncelik, Director
Ohio Environmental Protection Agency

This permit approval is based upon the record in this matter which is maintained at the offices of the Ohio Environmental Protection Agency. The Director has considered the application, accompanying information, inspection reports of the facility, a report regarding the facility's compliance or noncompliance with the terms and conditions of its permit and rules adopted by the Director under this chapter, and such other information as is relevant to the operation of the facility. The Director has determined that the facility under the existing permit has a history of compliance with ORC Chapter 3734, rules adopted under it, the existing permit, or orders entered to enforce such requirements that demonstrate sufficient reliability, expertise, and competency to operate the facility henceforth under this chapter, rules adopted under it, and the renewal permit. In addition, for the Class 3 modification governed under division (I)(3) of section 3734.05 of the Revised Code, the Director has made the findings required by division (D)(2) of that same section.

Entered into the Journal of the Director this 29 day of Dec, 2005.

By Dorothy Jackson of the Ohio Environmental Protection Agency.

MODULE A - GENERAL PERMIT CONDITIONS

A. GENERAL PERMIT CONDITIONS

A.1 Effect of Permit

ORC Sections 3734.02 (E) and (F) and 3734.05
OAC Rule 3745-50-58(G)

(a) The Permittee is authorized to treat, store, and/or dispose on-site hazardous waste in containers, tanks, a containment building, and landfill Cell M in accordance with the terms and conditions of this Ohio hazardous waste permit (hereinafter "permit"), ORC Chapter 3734, all applicable Ohio hazardous waste rules, all applicable regulations promulgated under the Resource Conservation and Recovery Act (RCRA), as amended, and the permit application. The renewal of the closed landfill Cells F, G, H and I is for the purpose of accomplishing post-closure activities. These units have been closed and are in post-closure. These units shall not be reactivated for management of hazardous waste. The renewal permit application and the subsequent modification application (received on January 22, 2004 and last updated on February 11, 2005) are hereby incorporated into this permit. In the instance of inconsistent language or discrepancies between the above, the language of the more stringent provision must govern.

(b) Any management of hazardous waste not authorized by this permit is prohibited, unless otherwise expressly authorized or specifically exempted by law. 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, or invasion of other private rights. Compliance with the terms and conditions of this permit does not obviate Permittee's obligation to comply with other applicable provisions of law governing protection of public health or the environment including but not limited to the Community Right to Know law under ORC Chapter 3750.

A.2 Permit Actions

OAC Rule 3745-50-58(F)

This permit may be modified or revoked as specified by Ohio law. The filing of a request by the Permittee for a permit modification, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay any permit term or condition.

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A.3 Permit Effective/Expiration Date
OAC Rule 3745-50-54

The effective date of this permit is the date the permit is entered into the Director's Journal. The permit expiration date is ten years after the date of journalization of this permit.

A.4 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.

A.5 Duty to Comply
OAC Rule 3745-50-58(A)

The Permittee must comply with all applicable provisions of ORC Chapter 3734, all applicable Ohio hazardous waste rules, and all terms and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by the laws of the State of Ohio. Any permit noncompliance, other than noncompliance authorized by the laws of the State of Ohio, constitutes a violation of ORC Chapter 3734 and is grounds for enforcement action, revocation, modification, denial of a permit renewal application or other appropriate action.

A.6 Duty to Reapply and Permit Expiration
OAC Rules 3745-50-40(D), 3745-50-58(B), 3745-50-56 and ORC Section 3734.05(H)

(a) If the owner or operator wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must submit a completed permit application for a hazardous waste facility installation and operation permit renewal and any necessary accompanying general plans, detailed plans, specifications, and such information as the director may require, to the director no later than 180 days prior to the expiration date of this permit, unless a later submittal date has been authorized by the director upon a showing of good cause.

(b) The owner or operator may continue to operate in accordance with the terms and conditions of the expired permit until a renewal permit is issued or denied if:

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(i) the Permittee has submitted a timely and complete permit application for a renewal permit under OAC Rule 3745-50-40; and

(ii) through no fault of the Permittee, a new permit has not been issued pursuant to OAC Rule 3745-50-40 on or before the expiration date of this permit.

(c) The Corrective Action obligations contained in this permit will continue regardless of whether the facility continues to operate or ceases operation and closes. The Permittee is obligated to complete facility-wide Corrective Action under the conditions of this permit regardless of the operational status of the facility. The Permittee must submit an application for permit renewal at least 180 days before the expiration date of this permit pursuant to OAC Rule 3745-50-40(D) unless a) the permit has been modified to terminate the Corrective Action schedule of compliance and the Permittee has been released from the requirements for financial assurance for Corrective Action; or b) a later submittal date has been authorized by the director.

A.7 Need to Halt or Reduce Activity Not a Defense
OAC Rule 3745-50-58(C)

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce a permitted activity in order to maintain compliance with the conditions of this permit.

A.8 Duty to Mitigate
OAC Rule 3745-50-58(D)

The Permittee must take all reasonable steps to minimize releases to the environment and must carry out such measures as are reasonable to prevent significant adverse impact on human health or the environment resulting from noncompliance with this permit.

A.9 Proper Operation and Maintenance
OAC Rule 3745-50-58(E)

The Permittee must at all times properly operate and maintain the facility (and related appurtenances) to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes effective management practices, adequate funding, adequate operator staffing and training, and where appropriate, adequate laboratory and process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of

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back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the terms and conditions of this permit.

A.10 Duty to Provide Information
OAC Rule 3745-50-58(H)

The Permittee must furnish to the director, within a reasonable time, any relevant information which the director may request to determine whether cause exists for modifying or revoking, or to determine compliance with, this permit. The Permittee must also furnish to the director, upon request, copies of records required to be kept by this permit.

A.11 Inspection and Entry
OAC Rules 3745-50-58(i) and 3745-50-30, and ORC Section 3734.07

(a) The Permittee must allow the director, or an authorized representative, upon stating the purpose and necessity of the inspection and upon proper identification, to:

(i) enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the terms and conditions of this permit;

(ii) have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;

(iii) inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the terms and conditions of this permit; and,

(iv) sample, document, or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by ORC Chapter 3734 and the rules adopted thereunder, any substances or parameter at any location.

(b) Any record, report or other information obtained under the hazardous waste rules or Chapter 3734 of the Revised Code shall not be available to the public upon the Permittee's satisfactory showing to Ohio EPA that all or part of the information would divulge methods or processes entitled to protection as trade secrets pursuant to Ohio Trade Secret Law and OAC Rule 3745-50-30.

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A.12 Monitoring and Records
OAC Rule 3745-50-58(J)

(a) Any sample and measurement taken for the purpose of monitoring must be representative of the monitored activity. Further, a sample must be a representative sample, as such term is defined and used in the Ohio hazardous waste rules. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of OAC Rule 3745-51-20, Laboratory Methods. Laboratory methods must be those specified in Test Methods for the Evaluation of Solid Waste: Physical /Chemical Methods; SW-846:Third Edition, November 1992; and additional supplements or editions thereof; Standard Methods for the Examination of Water and Wastewater: Twentieth Edition, 1999; or an equivalent method as specified in the approved waste analysis plan, or as this term is defined and used in the Ohio hazardous waste rules.

The Permittee must formally review at least once during each calendar year the on-site laboratory Quality Assurance Plan (QAP).

(b) Records of monitoring information must specify the:

(i) date(s), exact place(s), and time(s) of sampling or measurements;

(ii) individual(s) who performed the sampling or measurements;

(iii) date(s) analyses were performed;

(iv) individual(s) who performed the analyses;

(v) analytical technique(s) or method(s) used; and,

(vi) results of such analyses, including detection limits.

A.13 Signatory Requirement and Certification of Records
OAC Rules 3745-50-58(K) and 3745-50-42

All applications, reports or information must be properly signed and certified in accordance with OAC Rule 3745-50-58(K).

A.14 Retention of Records
OAC Rules 3745-50-40(G), 3745-50-58(J), 3745-50-58(M) and 3745-50-58(N)

(a) The Permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, the certification required by OAC Rule 3745-54-73 (B)(9), and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, certification, or application.

(b) The record retention period may be extended by request of the director at any time and is automatically extended during the course of any unresolved enforcement action regarding the facility.

(c) The Permittee must maintain, in accordance with the Ohio hazardous waste rules, records of all data used to complete the permit application and any amendments, supplements or modifications of such application and must retain a complete copy of the application for a period of at least five years from the effective date of the permit.

(d) The Permittee must maintain a document repository in compliance with OAC Rule 3745-50-58(M).

(e) The Permittee must maintain records from all ground water monitoring wells and associated ground water surface elevations for the active life of the facility, and for disposal facilities for the post-closure care period as well.

(f) Corrective Action records must be maintained at least three years after all Corrective Action activities have been completed.

A.15 Planned Changes
OAC Rules 3745-50-51 and 3745-50-58(L)(1)

The Permittee must give notice to the director as soon as possible of any planned physical alterations or additions to the facility. All such changes must be made in accordance with OAC Rule 3745-50-51.

A.16 Waste Shipments
OAC Rule 3745-52-12, ORC Section 3734.15(C)

The Permittee must only use properly registered transporters of hazardous waste to remove hazardous waste from the facility, in accordance with all applicable laws and rules.

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A.17 Anticipated Noncompliance
OAC Rule 3745-50-58(L)(2)

The Permittee must give advance notice to the director of any planned changes in the permitted facility or operations which may result in noncompliance with the terms and conditions of this permit. Such notification does not waive the Permittee's duty to comply with this permit pursuant to Permit Condition A.5.

A.18 Transfer of Permits
OAC Rules 3745-50-52, 3745-50-58(L)(3) and 3745-54-12

(a) The permit may be transferred to a new owner or operator only if such transfer is conducted in accordance with ORC Chapter 3734 and the rules adopted thereunder. This permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified under OAC Rule 3745-50-51. Before transferring ownership or operation of the facility, the Permittee must notify the new owner or operator in writing of the requirements of ORC Chapter 3734 and the rules adopted thereunder (including all applicable Corrective Action requirements).

(b) The Permittee's failure to notify the new owner or operator of the requirements of the applicable Ohio law or hazardous waste rules does not relieve the new owner or operator of its obligation to comply with all applicable requirements.

A.19 Compliance Reports
OAC Rules 3745-50-58(L)(5) and 3745-50-50

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule (developed in accordance with OAC Rule 3745-50-50) of this permit must be submitted to the director no later than 14 days following each scheduled date.

A.20 Immediate Reporting of Noncompliance
OAC Rule 3745-50-58(L)(6)

(a) The Permittee must report orally to Ohio EPA's Division of Emergency and Remedial Response within 24 hours from the time the Permittee becomes aware of any noncompliance with this permit, ORC Chapter 3734 or the rules adopted thereunder, which may endanger human health or the environment, including:

(i) information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies; and,

(ii) any information of a release or discharge of hazardous waste or a fire or explosion from the hazardous waste facility, which could threaten the environment or human health outside the facility.

(b) The report must consist of the following information (if such information is available at the time of the oral report):

(i) name, address, and telephone number of the owner or operator;

(ii) name, address, and telephone number of the facility;

(iii) date, time, and type of incident;

(iv) name and quantity of material(s) involved;

(v) the extent of injuries, if any;

(vi) an assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and,

(vii) estimated quantity and disposition of recovered material that resulted from the incident.

A.21 Follow-Up Written Report of Noncompliance
OAC Rule 3745-50-58(L)(6)(c)

(a) A written report must also be provided to Ohio EPA's Division of Emergency and Remedial Response and the Division of Hazardous Waste Management Northwest District Office within five days of the time the Permittee becomes aware of the circumstances reported in Permit Condition A.20.

(b) The written report must address the items in Permit Condition A.20 and must contain a description of such noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and, if not, the anticipated time it is expected to continue; and steps taken or planned to minimize the impact on human health and the environment and to reduce, eliminate, and prevent recurrence of the noncompliance.

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(c) The Permittee need not comply with the five-day written report requirement if the director, upon good cause shown by the Permittee, waives that requirement and the Permittee submits a written report within 15 days of the time the Permittee becomes aware of the circumstances.

A.22 Other Noncompliance
OAC Rules 3745-50-58(L)(10) and 3745-50-58(L)(4)

The Permittee must report to the director all other instances of noncompliance not provided for in Permit Conditions A.19 and A.20. These reports must be submitted within 30 days of the time at which the Permittee is aware of such noncompliance. Such reports must contain all information set forth within Permit Condition A.20.

A.23 Certification of Construction or Modification
OAC Rule 3745-50-58(L)(2)

Except as provided in OAC Rule 3745-50-51, the Permittee may not commence treatment, storage, or disposal of hazardous waste in the modified portion of the facility until the Permittee has submitted to the director, by certified mail or hand delivery, a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed, or modified in compliance with the permit; and,

(a) the director has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or,

(b) the director has either waived the inspection or has not within 15 days of the date of the submittal of the letter, notified the Permittee of his intent to inspect.

A.24 Other Information
OAC Rule 3745-50-58(L)(11)

If at any time the Permittee becomes aware that it failed to submit any relevant facts, or submitted incorrect information to the director, the Permittee must promptly submit such facts, information or corrected information to the director.

A.25 Confidential Information
OAC Rule 3745-50-30

In accordance with ORC Chapter 3734 and the rules adopted thereunder, the Permittee may request confidentiality for any information required to be submitted

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by the terms and conditions of this permit, or any information obtained by the director, or an authorized representative, pursuant to the authority provided under Permit Condition A.11.

A.26 Ohio Annual Permit Fee
OAC Rule 3745-50-36

The annual permit fee, calculated pursuant to OAC Rule 3745-50-36 and payable to the Treasurer of the State, must be submitted to the director on or before the anniversary of the date of issuance during the term of the permit. For the purpose of the payment of the Ohio Annual Permit Fee, the date of issuance is the date the permit was entered into the Journal of the Director of Ohio EPA.

A.27 Compliance Schedule - Documents
OAC Rule 3745-50-50, OAC Rule 3745-50-51

(a) Unless specified otherwise, the Permittee must submit the documents listed below to:

Ohio EPA, Director
P.O. Box 1049
Columbus, Ohio 43216-1049

Ohio EPA, DHWM
Attn: Regulatory and Information Services Section
P.O. Box 1049
Columbus, Ohio 43216-1049

Ohio EPA, Northwest District
347 North Dunbridge Road
Bowling Green, Ohio 43402

(b) The Permittee must submit to the Ohio EPA within 90 days after permit journalization, in accordance with Ohio's hazardous waste rules, the following information to be incorporated in the permit application:

(i) Updated Closure/Post-Closure Cost Estimate
OAC Rules 3745-55-42 and 3745-55-44

Section I of the permit application containing the financial assurance mechanism for closure must be updated to include a copy of the

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current closure/post-closure cost estimate as set forth in OAC Rules 3745-55-42 and 3745-55-44.

(ii) Updated Financial Assurance Mechanism for Closure
OAC Rules 3745-55-43 and 3745-55-45

Section I of the permit application containing the financial assurance mechanism for closure must be updated to include a copy of the current financial assurance mechanism, as set forth in OAC Rules 3745-55-43 and 3745-55-45, and as specified by the wording requirements of OAC Rule 3745-55-51. The value of the financial assurance mechanism must reflect at least the current amount of the closure/post-closure cost estimate.

During the life of the permit the facility may change the financial assurance mechanism as stated in OAC Rules 3745-55-43 and 3745-55-45. The facility must submit the financial assurance mechanism documentation to the director of Ohio EPA in accordance with the parameters set forth in OAC Rules 3745-55-43 and 3745-55-45.

(iii) Updated Liability Requirements
OAC Rule 3745-55-47

Section I of the permit application containing the mechanism used to demonstrate third party liability coverage must be updated to include a copy of the current liability mechanism as set forth in OAC Rule 3745-55-47 and as specified by the wording requirements of OAC Rule 3745-55-51.

During the life of the permit the facility may change the mechanism used to demonstrate liability coverage as stated in OAC Rule 3745-55-47. The facility must submit the liability mechanism documentation to the director of Ohio EPA in accordance with the parameters set forth in OAC Rule 3745-55-47.

This information must be submitted in accordance with OAC Rule 3745-50-51.

(c) The Permittee must submit to Ohio EPA within ninety (90) days after permit journalization, a new, complete version of the permit application which

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removes all existing stricken language and converts any specialized font (e.g., redline, all caps, etc.) text into standard font (unless otherwise noted in this permit). This "clean" version of the permit application should also include a complete and updated table of contents and ensure all tables, sections and associated references/citations are accurate. In addition, this updated permit application must incorporate information required by Permit Conditions B.27, K.9, J.2 and G.2. This permit application must be submitted as a Class 1A permit modification pursuant to OAC Rule 3745-50-51. Any changes to the permit application submitted with this updated version that are inconsistent with or not authorized by this final renewal permit must be clearly identified and follow the appropriate process outlined in OAC Rule 3745-50-51.

A.28 Information to be Maintained at the Facility
OAC Rule 3745-54-74

(a) Unless otherwise specified by the hazardous waste rules, the Permittee must maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, pursuant to OAC Rule 3745-55-15, and until the director releases the Permittee from financial assurance requirements pursuant to OAC Rule 3745-55-47, the following documents (including amendments, revisions and modifications):

(i) waste analysis plan, developed and maintained in accordance with OAC Rule 3745-54-13 and the terms and conditions of this permit;

(ii) contingency plan, developed and maintained in accordance with OAC Rule 3745-54-53 and the terms and conditions of this permit;

(iii) closure plan, developed and maintained in accordance with OAC Rule 3745-55-12 and the terms and conditions of this permit;

(iv) cost estimate for facility closure, developed and maintained in accordance with OAC Rule 3745-55-42 and the terms and conditions of this permit;

(v) personnel training plan and the training records, developed and maintained in accordance with OAC Rule 3745-54-16 and the terms and conditions of this permit;

(vi) operating record, required by OAC Rule 3745-54-73 and the terms and conditions of this permit;

(vii) inspection schedules, developed in accordance with OAC Rules 3745-54-15, 3745-55-74 and 3745-55-95 and the terms and conditions of this permit;

(viii) post-closure plan, as required by OAC Rule 3745-55-18(A) and the terms and conditions of this permit;

(ix) annually-adjusted cost estimate for facility closure and post-closure, as required by OAC Rules 3745-55-42 and 3745-55-44 and the terms and conditions of this permit; and,

(x) all other documents required by Permit Conditions A.12 and Permit Condition F.5.

(b) The Permittee must maintain copies of all inspection logs at the facility for a period not less than three years from the date of inspection.

A.29 Waste Minimization Report
OAC Rules 3745-54-73 and 3745-54-75

(a) The Permittee must submit a Waste Minimization Report describing the waste minimization program required by OAC Rules 3745-54-75(H), (i), and (J); 3745-54-73(B)(9); and 3745-52-20(B) at least once every two years. The provisions of OAC Rules 3745-54-75(H), (i) and (J); and 3745-54-73(B)(9) must be satisfied annually.

(b) The Permittee must submit the Waste Minimization Report to Ohio EPA's Office of Compliance Assistance and Pollution Prevention within 180 days of the effective date of this permit, and must submit updates to this report biennially thereafter.

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MODULE B - GENERAL FACILITY CONDITIONS

B. GENERAL FACILITY CONDITIONS

B.1 Design and Operation of Facility
OAC Rule 3745-54-31

(a) The Permittee must design, construct, maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, ground water or surface waters which could threaten human health or the environment.

(b) The Permittee must only accept for storage, treatment, and/or disposal the hazardous waste codes specified in the Part A of the permit application. Prior to disposal, wastes must meet all applicable land disposal restriction standards in accordance with OAC Chapter 3745-270.

(i) For waste codes listed in Table B -1 below, and as found in the Part A of the permit application, the Permittee may only accept these wastes as residues from treatment by incineration, carbon regeneration (by thermal incineration), and wastewater treatment; as well as, any secondary residues such as soils and debris derived from the primary residues.

Table B -1 Restricted Waste Codes								
F025	F032	K107	K108	K109	K110	K131	K132	K169
K170	K171	K172	P001	P002	P003	P004	P005	P006
P007	P008	P009	P010	P011	P012	P013	P014	P015
P016	P017	P018	P020	P021	P022	P023	P024	P026
P027	P028	P029	P030	P031	P033	P034	P036	P037
P038	P039	P040	P041	P042	P043	P044	P045	P046
P047	P048	P049	P050	P051	P054	P056	P057	P058
P059	P060	P062	P063	P064	P065	P066	P067	P068

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Table B-1: Restricted Waste Codes								
P069	P070	P071	P072	P073	P074	P075	P076	P077
P078	P081	P082	P084	P085	P087	P088	P089	P092
P093	P094	P095	P096	P097	P098	P099	P101	P102
P103	P104	P105	P106	P108	P109	P110	P111	P112
P113	P114	P115	P116	P118	P119	P120	P121	P122
P123	P127	P128	P185	P188	P189	P190	P191	P192
P194	P196	P197	P198	P199	P201	P202	P203	P204
P205	U023	U033	U075	U096	U115	U133	U135	U160
U189	U234	U237						

(ii) For waste identified as F027, the Permittee may only accept this waste as incineration residue. F027 waste must meet all applicable land disposal treatment standards for F027 as found in OAC Rule 3745-270-40 prior to acceptance by the Permittee.

(c) The Permittee must not accept more than 235,000 tons of hazardous waste in any one calendar year from off-site sources during the life of the permit, until such time as this permit condition is modified or renewed. This is a facility wide limitation and includes all units.

(d) The Permittee must not solicit liquid hazardous or non-hazardous wastes generated off-site for treatment, storage or disposal. However, in the event that the Permittee inadvertently receives liquid hazardous or non-hazardous wastes that it is not permitted to treat or dispose, the Permittee may store such wastes until proper off-site treatment, storage or disposal can be accomplished. The Permittee must make a good faith effort to expeditiously accomplish such off-site treatment, storage or disposal. At the request of Ohio EPA, the Permittee must demonstrate to the satisfaction of Ohio EPA that such a good faith effort was made. The Permittee is permitted to treat, store and dispose incidental or extraneous free liquids that may be inadvertently received with solid phase hazardous or non-hazardous wastes that the Permittee is permitted to treat, store or dispose.

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B.2 Required Notices
OAC Rule 3745-54-12

(a) The Permittee must notify the director in writing at least four weeks in advance of the date the Permittee expects to receive hazardous waste from a foreign source, as required by OAC Rule 3745-54-12(A). Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) Hazardous Waste from Off-Site Sources

When the Permittee is to receive hazardous waste from an off-site source (except where the Permittee is also the generator), he must inform the generator in writing that he has the appropriate permits, and will accept the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the operating record.

B.3 General Waste Analysis Plan
OAC Rule 3745-54-13

(a) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under OAC Rule 3745-55-13(D), he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of Chapters 3745-54 to 3745-57, 3745-205, and 3745-270 of the Administrative Code.

(b) The Permittee must follow the procedures described in the waste analysis plan found in Section C of the permit application, Waste Product Review (WPR) procedures as described in Section C of the permit application, and the terms and conditions of this permit.

All WPR approvals expire on the last day of the thirteenth month from the date of approval by Ohio EPA or the date of certification in accordance with the WPR requirements by the generator of that waste, as described herein, unless the Permittee obtains a letter from the waste generator certifying that either the waste analysis has remained unchanged since the last approval or that a new analysis provided by the generator or conducted by an independent laboratory show no significant changes in the waste composition or its characteristics. This letter or the new analysis then becomes part of that specific WPR package. In the absence of such

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certification, all WPR's must be resubmitted to Ohio EPA for re-approval and must include a new analysis provided by the waste generator or conducted by an independent laboratory.

(c) The Permittee must verify the analysis of each waste stream annually or within 60 days following the anniversary of the acceptance of the first shipment of the waste from the same generator as part of its quality assurance program, in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the director. At a minimum, the Permittee must maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee must inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this permit.

(d) For each hazardous waste stream, the Permittee must obtain from the generator a Waste Product Questionnaire (WPQ) as found in Appendix C.1 of the permit application before accepting waste for treatment, storage and/or disposal.

(e) The Permittee must perform a fingerprint analysis on representative waste samples as specified in Section C of the permit application.

The Permittee must compare the results of the fingerprint sampling program to the pre-acceptance analysis for the waste stream. The Permittee must notify the generator upon discovering a significant discrepancy. If the discrepancy is not resolved within 15 days, in accordance with OAC Rule 3745-54-72(B), the Permittee must immediately submit to the director a letter describing the discrepancy, attempts to reconcile the discrepancy, and a copy of the manifest or shipping paper at issue.

(i) Significant discrepancies in wastes types are obvious differences which can be discovered by inspection or waste analysis such as a waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

(ii) Significant discrepancies in quantity are: for bulk waste, variations greater than ten percent in weight, and for batch waste, any variation in piece count, such as a discrepancy of one drum in a truck load.

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(iii) The Permittee must analyze for the presence of free liquid when the presence or absence of free liquid is not obvious. The Permittee must use the Paint Filter Liquid Test, Method 9095 in Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, U.S. EPA Publication No. SW-846. Waste that fails the paint filter test must not be landfilled unless or until the waste has been treated so that it passes the paint filter test.

(f) Bulk wastes

The Permittee must randomly sample and conduct a fingerprinting analysis of at least ten percent of bulk waste loads regardless of their origin, waste type, and/or Waste Stream Identification (WSID). Accordingly, at least every 10th bulk load received by the facility will be fingerprinted. Fingerprinting must also occur after a visual inspection whenever warranted or when there has been any reported change in the process generating that particular waste. This Condition is applicable to all incoming wastes, regardless of which treatment, storage or disposal option is selected. The Permittee must collect samples for fingerprint analysis as follows:

(i) Five samples must be collected from each Gondola railroad car. The Permittee must collect two samples from the front, one from the middle and two samples from the end of the rail car, these five samples must be composited into one sample which must be tested for finger print analysis;

(ii) One sample per 25 tons of waste must be collected and composited together from each Hopper railroad car. For waste defined as K061 EAF Dust in Permit Condition B.3(j)(i), one additional sample per every seven tons (approximate) of waste off-loaded as a "batch" must be collected and composited together. The samples may be collected from either the conveyor belt (or other mechanism) as it is used to off-load the waste, or from separate locations within the container used to hold, store or treat the off-loaded waste;

(iii) One sample per 25 tons of waste must be collected and composited together from each intermodal container; and,

(iv) For bulk waste received by truck and defined as K061 EAF Dust in Permit Condition B.3(j)(i), a minimum of three samples must be collected and composited together from locations within the container at least six inches below the as-received surface of the waste

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material. The fingerprint samples may also be collected from separate locations within the container used to hold, store or treat the off-loaded waste.

(g) Containerized Wastes

The Permittee must sample and conduct a fingerprinting analysis on a composite sample prepared from material taken from the greater of the cube root of the number of drums in a shipment or ten percent of drums by WSID, which are part of a single truck load. A minimum of ten percent of the drums in every truck load received by the facility regardless of their origin and/or waste type must be sampled. A composite sample shall be acceptable only if it is composed of sub-samples of the same WSID. Shipments containing multiple WSID's may require multiple composite samples. One hundred percent of the drums must be opened and inspected for free liquids prior to disposal.

(h) Treated Wastes by Chemical Stabilization

(i) Prior to accepting a waste for stabilization and submitting the WPR form to Ohio EPA for approval, the Permittee must conduct or obtain a pre-acceptance analysis for each such waste and submit an analytical report with the WPR package. This report must contain raw data and, at the request of Ohio EPA, any other necessary information which would substantiate the appropriateness of the chemical stabilization reagents and assist Ohio EPA in determining the suitability of the selected reagents and disposal of the waste in an environmentally safe manner.

(ii) Except as provided in (iii) below, the Permittee must test and document the results of each waste stream processed through the containment building to determine if the treated waste(s) meets applicable treatment standards, except if: a) the waste is to be further treated or disposed of off-site; or b) the same waste code, having the same WSID from the same generator, is processed through the same treatment units and under the same operating conditions. If b) is true, it must be so documented in the facility's operating records and only ten percent of the subsequently treated loads are to be tested for the parameters specified in the WAP and the manner they would otherwise be required to be tested by applicable rules and regulations.

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(iii) The sampling frequency defined in (ii) above, must be followed until statistically valid test results have been obtained indicating that the Permittee's stabilization procedures are effective to comply with land-ban regulations. At such time and after notification to Ohio EPA, the Permittee must comply with the following:

(a) In accordance with OAC Rule 3745-270-07(c)(2), for each generator, the Permittee must test the waste or an extract of the waste or treatment residue developed using the Toxic Characteristic Leaching Procedure (TCLP) or using any methods required by generators under 40 CFR 268.32 according to the frequency specified below:

Shipments Per Restricted Waste Stream Per Generator Per Year

Number Received	Number Tested
1-20	1
above 20	2

(b) In accordance with OAC Rule 3745-270-07(B)(1), (2), and (3), for all wastes subject to this requirement not defined as K061 EAF Dust in Permit Condition B.3(j)(i), the Permittee must test a representative sample of the treated waste from the mixing container used in the full scale treatment process or TCLP extract of the full scale treated waste container according to the frequency specified below:

Shipments Treated Per Restricted Waste Stream Per Generator Per Year

Number Treated	Number Tested
1-20	1
21-40	2
above 40	3

(i) Prior to landfilling of the acid subcategory of D002 wastes, the pH of a 10% slurry of the deactivated waste in water must be between 9 and 12.5. Adjustments to the pH of deactivated waste can be made by blending alkaline materials with the waste in the chemical stabilization process.

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(j) In accordance with OAC Rules 3745-270-07(B)(1),(2) and (3), for all wastes subject to this requirement defined as K061 EAF Dust in Permit Condition B.3(j)(i), the Permittee must test a representative sample of the treated waste from the mixing container used in the full scale treatment process or TCLP extract of the full scale treated waste container according to the frequency specified in Permit Condition B.3(k). The Permittee must follow the testing frequency and procedures in Permit Condition B.3(k).

(i) "K061 EAF Dust" waste is defined as any waste requiring stabilization treatment prior to disposal, meeting the listing description of K061 in OAC Rule 3745-51-32 and characterized by the generator as the single EPA HW number K061. Waste "mixtures" or "derived-from" waste as defined in OAC Rule 3745-51-03(A)(2)(e)(iv)characterized by the generator as the single EPA HW number K061 are subject to the requirements of Permit Condition B.3(h)(iii). Waste shipments characterized as EPA HW Number(s) other than K061, but which also include K061, are subject to the requirements of Permit Condition B.3(h)(iii).

(ii) "Batch" is defined as an accumulation of waste that is treated by adding reagents at a specific ratio to the weight of the waste material as defined by a specific mix design. A "batch" can, for example, be comprised of a single 15-ton load of waste delivered by truck, a 25-ton portion of waste off-loaded from a railcar, a mixture of several different waste streams treated simultaneously by the same mix design, a 150-ton accumulation of waste treated simultaneously in the Campaign Bin or an 8-ton accumulation of waste aggregated from individual containers such as bags, boxes or drums.

(iii) "On-specification" is defined as a "batch" of waste for which no abnormalities have been identified by the fingerprint screening process, including a visual inspection and an evaluation of the amount of material present (i.e., single batch accumulations less than seven tons of otherwise "on-specification" waste may be ruled "off-specification" because of low mass or volume). A batch comprised of multiple shipments of "on-specification" waste from the same WSID treated by the same mix design is an on-specification batch.

(iv) "Off-specification" is defined as a "batch" of waste which has been determined by fingerprint testing or visual inspection to be outside the normal range of any fingerprint screening parameter or is outside the

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range of variation for which the mix design has been field-proven to be effective, as determined below:

(a) A waste is "off-specification" for metal content if the constituents being treated exceed the upper limit of the current baseline metal concentration range for a WSID-mix design by ten percent (for a metal present at three percent or greater by weight) or by 3,000 mg/kg (for a metal present at less than three percent by weight).

(b) A waste is "off-specification" for free lime content if the concentration of free lime is outside the range of variation for which the mix design has been field-proven to be effective.

Experimental work performed by treating an "on-specification batch" with a new or experimental mix design (i.e., prior to initial qualification of that mix design) must be counted as "off-specification" work. Experimental work must be designated as such, in writing, prior to treatment of the batch.

Note: The Permittee's on-site laboratory retains records for each mix-design specifying a concentration range for free lime and metal constituents within which the mix design is approved to be used for treatment of "on-specification" waste batches. The acceptable range of concentration for a mix-design can be extended by field testing "off-specification" waste batches and obtaining passing results. The laboratory manager reviews and approves range increases for mix designs and may set limits for any mix design based on experience with the waste being treated or experience with similar waste materials.

(v) "Initial Qualification" of a mix design refers to the sequence of events used to initially qualify a new or existing mix design for periodic testing as specified in Permit Condition B.3(k)(iii). The process involves collection and evaluation of baseline analytical information about the waste followed by field testing of the mix design to ensure that it is capable of meeting the Land Disposal Restriction (LDR) treatment standards required for land disposal. Batches treated in the Campaign Bin will not be used as part of the sequence to

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demonstrate initial qualification unless the Campaign Bin is the only treatment container used for treatment of a particular waste material.

(vi) "Requalification" of a mix design refers to the sequence of events that allows a previously qualified or requalified mix design to return to a testing frequency specified in Permit Condition B.3.(k)(iii) after periodic testing of an on-specification batch results in a failure of one or more of the regulated constituents to meet the LDR standards required for land disposal. Batches treated in the Campaign Bin will not be used as part of the sequence to demonstrate requalification unless the Campaign Bin is the only treatment container used for treatment of a particular waste material.

(k) Variable Frequency Sampling and Testing Procedure

(i) In order to develop an effective mix design, the Permittee performs both bench and field experimental testing of waste batches. Any waste batch treated experimentally must be treated successfully, as demonstrated by analysis results meeting the LDR standards in OAC Rule 3745-270-40, prior to land disposal of that waste batch.

(ii) Each mix design for which qualification is sought must first undergo "initial qualification" by testing a sequence of either 5, 10 or 20 consecutive batches. Each batch must be treated successfully, as demonstrated by analysis results meeting the LDR standards in OAC Rule 3745-270-40 required for land disposal of that waste. In the event that a sequence of at least five passing results cannot be achieved, testing of every batch will continue until such time as a sequence of at least five consecutive passing results is achieved.

(a) After a mix design is qualified for Category C in Permit Condition B.3(k)(iii), and in the event that the Permittee elects to continue initial qualification for Category B and a failure occurs, the mix design must be re-qualified under Permit Condition B.3(k)(iv), Category C.

(b) In the event that the Permittee elects to continue initial qualification for Category A after qualification for Category B and a failure occurs, the mix design must be requalified under Permit Condition B.3(k)(iv), Category C and/or Permit Condition B.3(k)(v), Category B.

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(iii) Once "initial qualification" for a mix design has been achieved, a testing frequency category will be assigned to a mix design based on the number of batches successfully tested in accordance with Permit Condition B.3(k)(ii). Initial qualification (or requalification) batches may be added to the testing sequence to qualify for Category B (after qualification for Category C) or Category A (after qualification for Category B) after initial qualification (or requalification) has been completed, including subsequent successful testing performed in accordance with Permit Conditions B.3(k)(iii)(a), B.3(k)(iii)(b), or B.3(k)(iii)(c), as long as they are sequential (i.e., not separated by intermittent failures of one or more batches of "on-specification" waste):

(a) Category A - A sequence of 20 qualification batches is successfully treated; thereafter, test one batch in every 20 batches treated.

(b) Category B - A sequence of ten qualification batches is successfully treated; thereafter, test one batch in every ten batches treated.

(c) Category C - A sequence of five qualification batches is successfully treated; thereafter, test one batch in every five batches treated.

For each sequence of 5, 10 or 20 "on-specification" batches treated, it shall be acceptable to collect a sample from the "on-specification" batch immediately preceding or immediately following the numerical batch in the sequential count specified to be tested.

(iv) In the event that the testing required by Permit Condition B.3(k)(iii) reveals that a batch does not meet the LDR standards in OAC Rule 3745-270-40 required for land disposal of that waste, that batch will be deemed a failure and will be so recorded. The testing frequency specified in Permit Condition B.3(k)(iii) for waste treated by that mix design is suspended and the mix design must undergo "requalification".

All waste batches treated by that mix design that have not already been disposed must be tested until a sequence of at least three consecutive "on-specification" batches are treated successfully, as

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demonstrated by analysis results meeting the LDR standards in OAC Rule 3745-270-40 required for land disposal of that waste. Once "requalification" for Category C has been achieved, the testing frequency requirements of Permit Condition B.3(k)(iii)(c) become effective again.

(v) Requalification testing may be continued for waste batches that were previously qualified in accordance with Permit Condition B.3(k)(iii) for either Category B or Category A at the time of the failure.

(a) To return to Category B, a sequence of at least five consecutive "on-specification" batches must be treated successfully, as demonstrated by analysis results meeting the LDR standards in OAC Rule 3745-270-40 required for land disposal of that waste. Once "requalification" for Category B has been achieved, the testing frequency requirements of Permit Condition B.3(k)(iii)(b) become effective again.

(b) To return to Category A, a sequence of at least ten consecutive "on-specification" batches must be treated successfully, as demonstrated by analysis results meeting the LDR standards in OAC Rule 3745-270-40 required for land disposal of that waste. Once "requalification" for Category A has been achieved, the testing frequency requirements of Permit Condition B.3(k)(iii)(a) become effective again.

(vi) The following is a flowchart representation of Permit Condition B.3.(k), Variable Frequency Sampling and Testing Procedure:

Abbreviations used in flowchart:

QUAL – "Qualification" or "Initial Qualification". Refer to Permit Condition B.3(j)(v).

G & H – "Grab and Hold", denoting normal periodic treated waste testing activities. Refer to Permit Condition B.3(k)(iii).

RQL – "Requalification". Refer to Permit Condition B.3(j)(vi).

Cat. A – Category A testing frequency. Refer to Permit Condition B.3(k)(iii)(a).

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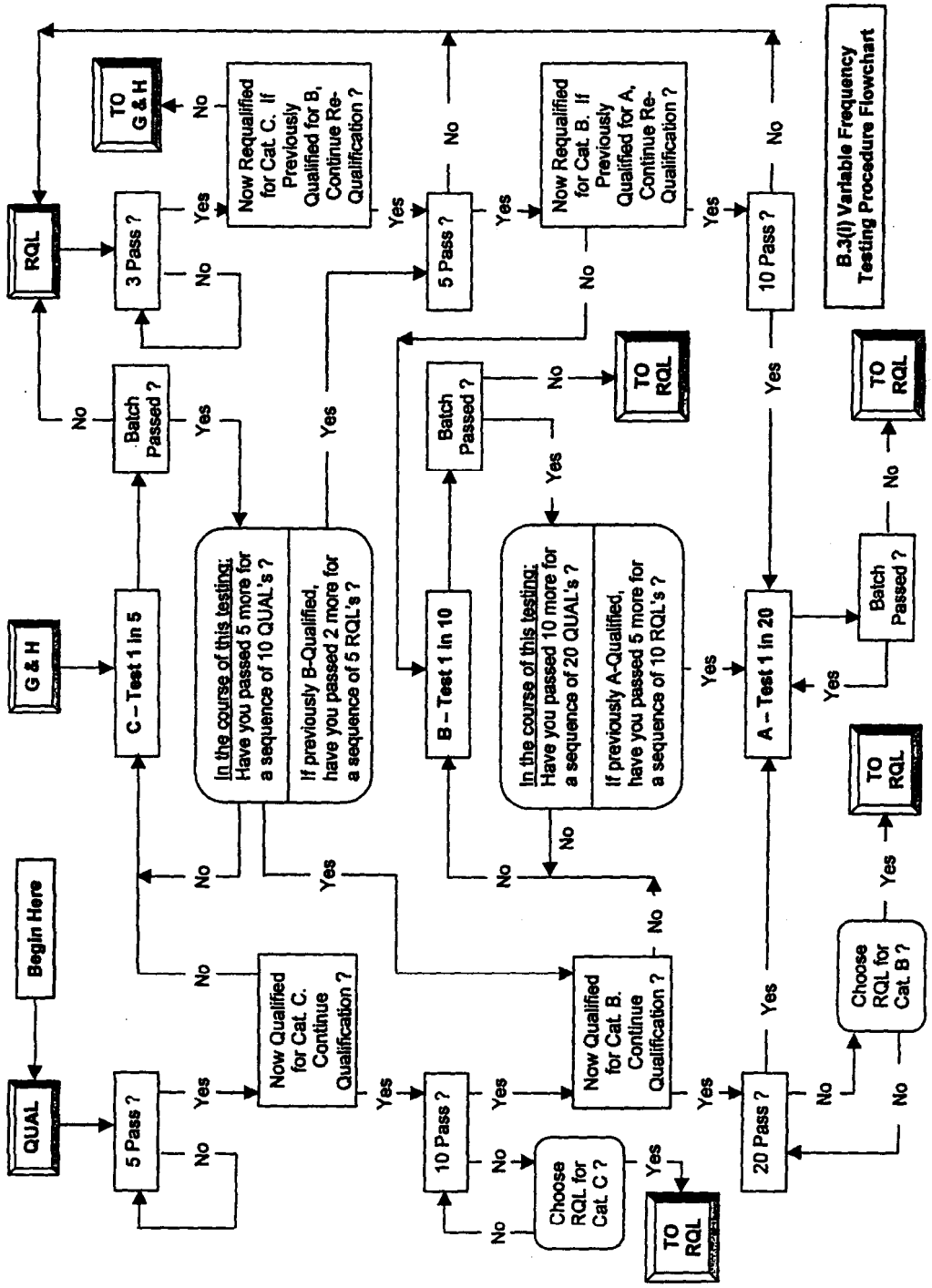

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Cat. B – Category B testing frequency. Refer to Permit Condition B.3(k)(iii)(b).

Cat. C – Category C testing frequency. Refer to Permit Condition B.3(k)(iii)(c).

B.4 Security
OAC Rule 3745-54-14

(a) The Permittee must comply with the security provisions of OAC Rule 3745-54-14(B)(2), and (c) and Section F of the permit application.

(b) The Permittee must provide a twenty-four hour surveillance system, which monitors and controls entry onto the active portion of the facility.

(c) The Permittee must provide a fence which surrounds the facility. New or replacement fence installed from the effective date of this permit must be at least a six foot chain link fence topped with three strands of barbed wire. Internal security to the active disposal cell(s) must be maintained within fences and/or gates.

(d) The Permittee must post warning signs with the legend, "Danger–Unauthorized Personnel Keep Out" at each entry gate and at approximately 200 foot intervals along the perimeter fence.

(e) The Permittee must document all known attempts of unauthorized entry by persons or livestock onto the active portion of the facility.

B.5 General Inspection Requirements
OAC Rules 3745-54-15 and 3745-54-73

The Permittee must follow the inspection schedule set forth in Section F of the permit application. The Permittee must remedy any deterioration or malfunction discovered by an inspection, as required by OAC Rule 3745-54-15(C). Records of inspection must be kept for a minimum of three years from the date of inspection. These records must be a part of the facility's operating record as required by OAC Rule 3745-54-73.

(a) The Permittee must require inspectors to sign and print their names on inspection checklists after indicating the status of the items inspected. Items not inspected must be marked "NI" on the checklist.

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(b) Records of inspections must be kept as required by OAC Rule 3745-54-15(D), the terms and conditions of this permit, and the permit application.

(c) In-bound/Out-bound Scales and Stabilization/Containment Building Internal/External Scales A, B, and C.

(i) The Permittee must inspect each scale and the surrounding area on a weekly basis.

(ii) The Permittee must monitor and inspect each scale and surrounding area for structural integrity, cleanliness, and to assure that there are no obstacles or other blockages. Any structural damage or obstacles identified during the inspection that would affect the accuracy of scale readings must be repaired or removed prior to the next use of the affected scale(s).

(iii) The Permittee's inspection must include a review of service records for all scale equipment. Any routine testing and verification of the scales required by the equipment manufacturer must be scheduled. Routine testing and verification of the scales must be performed, at a minimum, on a semi-annual basis.

(d) Gates/Fences/Surveillance/Radio

(i) The Permittee must inspect on a weekly basis the facility's gates, fences, surveillance and radio equipment.

(ii) All secondary gates must be closed and locked unless attended or actively monitored by facility personnel. All main gates must be monitored during regular business hours by persons trained in security procedures. During non-operating hours, proper surveillance must be provided to monitor and control entry onto the active portion of the facility, as required by OAC Rule 3745-54-14(B).

(iii) The Permittee must inspect the facility's two-way radio communications system for proper operation and required maintenance, at a minimum, on a weekly basis. External communication checks must be performed as part of the inspection schedule. Service records for the radio and video surveillance equipment, if such equipment is being used, must be checked as part of the inspection.

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(e) Container Storage Areas

The Permittee must inspect the container storage areas on a weekly basis and after rainfall events (2 or more inches of rainfall in 8 hours) for the presence of spilled materials, leaking containers, and for deterioration of containers and the containment system caused by corrosion and other factors. The integrity of the pad and the curbing of this area must also be inspected.

(f) Tank Storage Areas.

(i) The Permittee must inspect all tank storage areas on a weekly basis and after a rainfall event (2 or more inches of rainfall in 8 hours).

(ii) The Permittee must inspect overfilling control equipment, monitoring equipment (e.g., gauges), drainage system and tank level indicators once each operating day.

(iii) The Permittee must inspect the above ground portions of each tank system to detect corrosion or releases of waste at least once each operating day.

(iv) The Permittee must inspect storage records and filling logs on each tank for completeness and accuracy, and all data gathered from monitoring equipment and leak detection equipment to ensure that all tanks are being operated according to their designated specifications at least once each operating day.

(v) The Permittee must inspect all tank construction materials, including piping, valves, seams, and connections for signs of leakage, corrosion, or structural deterioration at least once each operating day.

(vi) The Permittee must inspect all of the areas immediately surrounding the externally accessible portions of each tank (i.e., the tank secondary containment structures) for obvious signs of leakage, corrosion, indications of releases of hazardous waste, or any other problems at least once each operating day.

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(g) Stabilization/Containment Building

(i) The Permittee must inspect all processing and waste handling equipment for proper operation and structural integrity on a weekly basis.

(ii) The Permittee must inspect the Stabilization/Containment Building for spillage and for potentially unsafe conditions including the lack of safety guards and shields in key work locations on a weekly basis .

(iii) Reserved.

(iv) The Permittee must inspect the containment building and associated outside unloading pads/aprons (i.e., Debris Sort Floor, Truck Unloading Stations No. 1, 2 and 3 Aprons; Campaign Bin, Truck Unloading Stations No. 1 and 2 Aprons; Doors 125 and 126, Truck Unloading Stations No. 1 and 2 Aprons; and, Door 127, Drum Unloading Station Apron as depicted on Drawings No. D-2000L-G01 and D-2000L-G02, D-2000 L-S01 and D-2000 L-S02) on a weekly basis and after a rainfall event (2 or more inches of rainfall in 8 hours).

(v) The Permittee must inspect for deterioration, malfunction, or improper operation of run-on and run-off control systems on a weekly basis.

(vi) The Permittee must inspect the liquid collection and removal systems and leak detection systems for the presence of liquid and proper function on a weekly basis.

(vii) The Permittee must inspect all sumps located within the Stabilization/ Containment Building on a daily basis for the presence of waste and/or liquid accumulation.

(viii) The Permittee must inspect all concrete slab surfaces for cracks, deterioration of chemical resistance and water tightness at a minimum of twice per year.

(ix) The Permittee must inspect the steel wearing surfaces of the Campaign Bin for significant damage or deterioration at a minimum of twice per year.

(h) Landfill Area

(i) During construction of a landfill cell and installation of the liners and cover systems (e.g., membranes, sheets, or coatings), the Permittee

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must inspect the liners and cover systems for uniformity, damage, and imperfections such as holes, cracks, thin spots, or foreign materials.

(ii) During construction, the Permittee must inspect and test earthen material liner components for compaction density, moisture content, and nominal permeability after placement. Manufactured synthetic liner materials must be inspected to ensure tight seams and joints and the absence of tears or blisters. All aspects of liner construction must be inspected for conformance with construction specifications.

(iii) During construction of a landfill cell, the side slopes and the base of the landfill cell must be inspected for imperfections including lenses, cracks, channels, root holes, all visible stones of one inch in diameter or greater, or other structural non-uniformities that may cause an increase in the permeability of the recompacted clay or damage to the liner material.

(iv) The Permittee must monitor and inspect construction of each segregated subcell, if applicable, to ensure that each subcell meets specifications prior to using that landfill subcell for disposal of waste.

(v) The Permittee must inspect the overall appearance of the active portion of the landfill on a weekly basis and after a rainfall event (2 or more of inches of rainfall in 8 hours). Pockets of run-on water or exposed containers must be noted on the inspection checklist. The landfill operations must be observed for compliance with the site safety requirements.

(vi) The Permittee must inspect the active portion of the landfill to detect evidence of deterioration, malfunction, or improper operation of run-on diversion and run-off control systems on a weekly basis and after a rainfall event (2 or more inches of rainfall in 8 hours).

(vii) The Permittee must inspect proper functioning of the wind dispersal control systems, intermediate cover procedures, dust, conditions and controls on a daily basis and after a rainfall event (2 or more inches of rainfall in 8 hours).

(viii) The Permittee must inspect the leachate collection and removal systems for proper function and the presence of leachate on a weekly basis and after a rainfall event (2 or more inches of rainfall in 8 hours).

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(i) Safety Equipment

(i) The Permittee must inspect all safety equipment, spill control, and emergency communications equipment as needed.

(ii) The Permittee must inspect all fire fighting equipment including foam-water monitors, fire extinguishers, the fire truck, portable foam-water unit, and the alarm horn as needed to assure that each piece of equipment is in place, unobstructed, and operational in the event of an emergency.

(iii) The Permittee must inspect emergency safety gear (e.g., ropes, harnesses, etc.), respirators, personal protective equipment and first aid supplies as needed to assure that each piece of equipment is in place, unobstructed, that all contents are readily available, and that each piece of equipment is operational in the event of an emergency.

(iv) The Permittee must ensure that all expendable safety equipment is replaced after use in a timely manner.

(j) Miscellaneous Inspections

The Permittee must inspect the following key areas of the facility not covered under the inspection program for a specific process on a weekly basis and after a rainfall event (2 or more inches of rainfall in 8 hours):

(i) The decontamination units and areas where they are used must be Inspected for spillage, physical obstruction, integrity of temporary containment devices, cleanliness, and general operating condition of valves, hoses, motor, and safety valves.

(ii) The run-on water diversion or collection facilities must be inspected for overfill (i.e., level), the integrity of containment devices, the general condition of valves, pipes, and joints, and the presence of leaks.

(iii) The facility roads must be inspected for presence of physical obstructions to ensure that directional signs are clearly visible, presence of hazardous waste spills, and general roadway integrity which must assure the safe movement of materials through the facility.

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(iv) The facility's run-on/run-off control drainage system for the entire site, including specific units, must be assessed as to their operational integrity, including the presence of deterioration, damage from animal burrows, and physical obstructions. The systems must be checked to verify that they are functioning adequately.

(v) The facility's groundwater monitoring well system must be inspected for damage and degradation, presence of physical obstruction, and overall integrity. All monitoring wells must be inspected to verify that they are locked while not in use.

B.6 Personnel Training
OAC Rule 3745-54-16

(a) The Permittee must conduct personnel training, as required by OAC Rule 3745-54-16. This training program must contain at least the elements set forth in Section H of the permit application. The Permittee must maintain training documents and records as required by OAC Rules 3745-54-16(D) and (E).

(b) The facility's personnel training program must be directed by a person trained in hazardous waste management procedures, and must include instructions which teaches facility personnel hazardous waste management procedures, including contingency plan implementation, relevant to the positions in which they are employed.

(i) The Permittee must require all facility personnel to complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way designed to ensure the facility's compliance with the requirements of the Ohio hazardous waste rules. The Permittee must ensure that this program includes all the elements described in the facility's training program.

(ii) The Permittee's employee training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

(a) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

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(b) Key parameters for automatic waste feed cutoff systems;

(c) Communications or alarm systems;

(d) Response to fire or explosions;

(e) Response to ground water contamination incidents; and

(f) Shutdown of operations.

(iii) Facility personnel must successfully complete the appropriate program(s) as specified in the Permit Condition B.6.(b)(i) and (ii) within six months after the date of their employment or assignment to the facility, or to a new position at the facility, whichever is later. Employees must not work in unsupervised positions involving management of hazardous waste until they have successfully completed the training program specified in the approved application.

(iv) The Permittee must conduct an annual training review for all facility personnel of the initial training as specified in the approved application. This program may be revised and updated by the Permittee, as appropriate.

(v) The Permittee must maintain a written job description for each position and a record of the individuals employed in each of those positions. These descriptions must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position.

(vi) The Permittee must maintain, as part of the operating record, training records of current personnel until closure of the facility. The Permittee must maintain training records for former employees for three years from the date the employee last worked at the facility.

B.7 General Requirements for Ignitable, Reactive, or Incompatible Wastes
OAC Rule 3745-54-17

(a) The Permittee must comply with the requirements of OAC Rule 3745-54-17 and must follow the procedures for handling ignitable, reactive, and incompatible wastes set forth in Section F of the permit application.

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(b) The Permittee must provide electrical grounding for all containers and tanks, and transport vehicles during all operations involving the handling of ignitable or reactive wastes that could be ignited by static discharge.

(c) The Permittee must provide, and require the use of, spark proof tools during all operations involving the handling of all ignitable or reactive wastes that could be ignited by tool sparks.

(d) The Permittee must take precautions to prevent accidental ignition, or reaction of, ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electric or mechanical), spontaneous ignition (e.g., from heat producing chemical reactions) and radiant heat. The Permittee must prohibit smoking and open flames in each area where ignitable, reactive or incompatible hazardous wastes are managed and must post appropriate signs.

(e) All wiring and electrical equipment for units to be constructed at the facility must meet the National Fire Protection Association's standards for hazardous locations (See National Fire Protection Association, "National Electric Code" National Fire Codes, 2002 Edition, Chapter 5, Special Occupancies, Articles 500-503, and any subsequent updates).

(f) The Permittee must take precautions to prevent reactions which:

(i) Generate extreme heat or pressure, fire or explosions, or violent reactions.

(ii) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment.

(iii) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions.

(iv) Damage the structural integrity of the device or the facility.

(v) Through other like means, threaten human health or the environment.

(vi) When required to comply with the Permit Condition B.7.(a), the Permittee must document that compliance. This documentation may be based on references to published scientific or engineering

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literature, trial tests (e.g., bench scale or pilot scale test), waste analysis (as specified in OAC Rule 3745-54-13), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions. The Permittee must submit this documentation to Ohio EPA as part of the WPR package, as appropriate.

B.8 RESERVED

B.9 Required Equipment
OAC Rule 3745-54-32

(a) At a minimum, the Permittee must maintain at the facility all the equipment required by OAC Rule 3745-54-32 and the equipment set forth in the contingency plan contained in Section G of the permit application.

(i) Each permanent building at the facility (lab trailers, offices, storage buildings, process plant) must be equipped with a minimum of one or more of the following communication devices: telephone, two-way radio, paging system and/or alarm system.

(ii) The Permittee must maintain in each building an accessible manual audible alarm warning system capable of providing immediate emergency verbal or signal instruction, and for initiating the facility-wide evacuation plan, fire response procedures, and any other emergency action(s). Personnel involved in treatment, storage, and disposal operations must have, immediately accessible, a hand-held or vehicle mounted two-way radio which can be used to contact the area supervisor and/or Emergency Coordinator.

(iii) A vehicle with a two-way radio must be located on-site and dedicated for emergencies, fires, and spill response. This vehicle must be adequately equipped with spill control and first aid materials.

(iv) Fire extinguishers and fire control equipment must be installed and located in appropriate work areas as detailed in the permit application. Portable fire extinguishers must be located in areas of fire hazards within the facility buildings, and on each piece of heavy equipment used in the disposal areas according to NFPA codes.

(v) An emergency coordinator must have a two-way radio, mobile phone, or pager at his/her disposal at all times while on site and/or on call.

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(vi) The Permittee must maintain three fire hydrants connected to a public water main at adequate volumes and pressures. Or, the Permittee must construct and maintain a fire protection system (with the associated pumping/piping network) and a standard fire hydrant with appropriate volumes and pressures as dictated by NFPA guidelines to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(vii) The Permittee must provide and maintain a power backup to the emergency communication and alarm systems in the event of electric power failure.

(b) Facility Decontamination Station and Equipment.

(i) The Permittee must maintain and operate at least two portable truck wash units for washing and/or decontaminating the surfaces of trucks delivering waste on-site, on-site waste handling equipment, and personnel safety equipment, as needed.

(ii) All such waters used in decontamination of trucks and/or waste handling equipment must be collected by the Permittee. The Permittee must determine if such water is a hazardous waste according to the requirements of OAC Rule 3745-51-11 and manage this water as appropriate.

B.10 Testing and Maintenance of Equipment
OAC Rule 3745-54-33

The Permittee must inspect, test and maintain the equipment required by Permit Condition B.9 as necessary to assure its proper operation in time of emergency, as specified in OAC Rule 3745-54-33, Section F of the permit application and the terms and conditions of this permit.

B.11 Access to Communications or Alarm System
OAC Rule 3745-54-34

(a) The Permittee must maintain access to the communications and alarm systems, as required by OAC Rule 3745-54-34, Section G of the permit application and the terms and conditions of this permit.

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(b) The Permittee must make available internal communication and alarm systems at or within 70 feet of each active storage, process, or disposal unit to provide immediate emergency instructions to facility personnel. The Permittee must insure that whenever hazardous waste is being managed, all personnel involved in the operation must have access to an internal alarm or emergency communication device, either directly (such as a telephone or a handheld two-way radio capable of summoning external emergency assistance), or through visual or voice contact with another employee. The Permittee must also maintain devices capable of summoning emergency assistance from off-site sources such as local fire or police departments. At a minimum, two such devices must be located on the facility property, one north of York Street and the other south of York Street.

B.12 Required Aisle Space
OAC Rule 3745-54-35

(a) At a minimum, the Permittee must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, as required by OAC Rule 3745-54-35.

(b) The Permittee must construct and maintain an access road of a sufficient width to accommodate a fire truck between Cell M and the tank farms/container storage areas (as shown in Drawings D2000L-G01 and D2000L-G05 of the approved application) to be located west of Cell M.

B.13 Arrangements with Local Authorities
OAC Rule 3745-54-37

(a) The Permittee must comply with the requirements of OAC Rule 3745-54-37 (A) by making a diligent effort to:

(i) make arrangements and familiarize all emergency response agencies which are likely to respond in an emergency with the location and layout of the facility, properties of hazardous waste managed at the facility and associated hazards, places where facility personnel will normally be working, entrances to and roads inside the facility, and possible evacuation routes as depicted and explained in Section G of the permit application;

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(ii) make arrangements with Ohio EPA emergency response teams, emergency response contractors, and equipment suppliers;

(iii) make arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and types of injuries or illnesses which could result from fires, explosions, or releases at the facility; and,

(iv) make agreements designating primary emergency authority to a specific police and a specific fire department and make agreements with any others to provide support to the primary emergency authority, where more than one police and fire department may respond to an emergency.

(b) Where authorities decline to enter into such agreements or arrangements set forth in OAC Rule 3745-54-37(A), the Permittee must document the refusal in the operating record as required by OAC Rule 3745-54-37(B).

B.14 Implementation of Contingency Plan
OAC Rules 3745-54-51 and 3745-54-56

The Permittee must immediately carry out the provisions of the contingency plan and follow the emergency procedures described in OAC Rule 3745-54-56, whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which threatens or could threaten human health or the environment.

In regard to spills and related toxic gas releases, the plan must describe the criteria to be used by the emergency coordinator to determine when the plan will be implemented. At a minimum, the plan must be implemented in the following situations:

(a) any fire involving hazardous waste;

(b) any explosion involving hazardous waste;

(c) any uncontrolled hazardous waste reaction that produces or has the potential to produce hazardous conditions, including noxious, poisonous, flammable and/or explosive gases, fumes, or vapors; harmful dust; or explosive conditions;

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(d) any hazardous waste spill or release, outside of a secondary containment system, that causes or has the potential to cause off-site soil, surface water and/or ground water contamination; or,

(e) any hazardous waste spill or release that produces or has the potential to produce hazardous conditions, including noxious, poisonous, flammable and/or explosive gases, fumes, or vapors; harmful dust; or, explosive conditions.

B.15 Content of the Contingency Plan
OAC Rule 3745-54-52

The Permittee must comply with OAC Rule 3745-54-52 and the contingency plan, as set forth in Section G of the permit application.

B.16 Contingency Plan - Released Material and Emergency Response Material and By-products
OAC Rule 3745-54-56(G)

(a) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

(b) All liquid or solid material resulting from fire, explosion, released material or emergency response material and by-products that the Permittee is required to evaluate to determine whether such material is hazardous waste in accordance with OAC Rule 3745-52-11, must be collected and managed as a hazardous waste unless the Permittee can demonstrate that such waste is not hazardous in accordance with OAC Rule 3745-51-03(c) and (D).

B.17 Amendments to Plan
OAC Rule 3745-54-54

The Permittee must review the contingency plan at least annually and upon the occurrence of any event listed in OAC Rule 3745-54-54. If necessary or appropriate, the Permittee must amend the contingency plan as required by OAC Rule 3745-54-54, in accordance with OAC Rule 3745-50-51.

B.18 Copies of Plan
OAC Rule 3745-54-53

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(a) The Permittee must comply with the requirements set forth in OAC Rule 3745-54-53 regarding contingency plan distribution. The Permittee must maintain at the facility a copy of the contingency plan and all revisions to the plan.

(b) The Permittee must, in accordance with OAC Rule 3745-54-53, submit a copy of the contingency plan to all local police departments, fire departments, hospitals and local emergency response teams that may be called upon to provide emergency services. The Permittee must notify such agencies and the local authorities, in writing, within ten days of the effective date of any amendments of, revisions to, or modifications to the contingency plan.

(c) The Permittee must, in accordance with OAC Rule 3745-54-53, submit a copy of the contingency plan to the Ohio Environmental Protection Agency's Division of Emergency and Remedial Response.

B.19 Emergency Coordinator
OAC Rule 3745-54-55

The Permittee must comply with the requirements set forth in OAC Rule 3745-54-55 regarding the emergency coordinator.

B.20 Emergency Procedures
OAC Rule 3745-54-56

The Permittee must comply with the requirements regarding emergency procedures set forth in OAC Rule 3745-54-56, Section G of the permit application and the terms and conditions of this permit.

B.21 Availability, Retention and Disposition of Records
OAC Rule 3745-54-74

All records must be furnished by the Permittee upon request to, and made available at all reasonable times for inspection by, Ohio EPA, in accordance with OAC Rule 3745-54-74.

B.22 Operating Record
OAC Rule 3745-54-73

The Permittee must comply with the requirements set forth in OAC Rule 3745-54-73 regarding an operating record, including information to be recorded and the

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maintenance thereof. At a minimum, the following items must be recorded and maintained as part of the operating record:

(a) Copies of all required waste analysis results as part of the operating record per OAC Rule 3745-54-73(B)(3).

For waste defined as K061 EAF Dust in Permit Condition B.3(j)(i), the Permittee must keep a record, in a working document or database, by manual and/or electronic means, of the key parameters that influence the treatment process as this information becomes available. The Permittee must review the current working document or database monthly and correct any errors or omissions discovered. Such records must include, but are not limited to, the following:

(i) the identification of the batch being treated and/or tested and the date samples are collected for the purpose of testing;

(ii) the identification name of the mix design used;

(iii) the percent available free lime in the raw waste;

(iv) whether the batch treated was "on-specification" or "off-specification" as defined in Permit Condition B.3(j);

(v) pH of the TCLP extract fluid of the treated waste after completion of the extraction process; and,

(vi) whether the batch met, or did not meet, LDR treatment standards in OAC Rule 3745-54-270 after completion of the treatment process.

(b) Copies of all required laboratory analyses of samples and all required measurements taken for the purpose of monitoring such as drainage ditch samples, background soil samples, and ground water and surface water samples, as part of the operating record, including the following:

(i) Samples and measurements required for the purpose of monitoring must be representative of the monitored activity.

(ii) Records of monitoring information that must include the following:

(a) dates, exact place, and time of sampling or measurement;

(b) individual(s) who performed the sampling measurements;

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(c) analytical techniques or methods used;

(d) results of such analysis; and,

(e) description of waste analysis discrepancies.

(c) Copies of all required monitoring and measurements which are taken during the closure period including monitoring to determine the level of decontamination. The Permittee must maintain copies of all closure notices, certifications, and documents required during the post-closure care period.

(d) A written post-closure operating record, which includes the following:

(i) post-closure sampling and analytical data for ground water and leachate samples, and the amount of leachate or liquids removed from leachate collection/ leak detection system(s);

(ii) survey plot indicating landfill location and record of hazardous waste in each cell;

(iii) inspection reports and inspection log forms including any necessary remedial action;

(iv) detailed reports of incidents which required implementation of the Contingency Plan;

(v) documentation of the required post-closure personnel training of employees or contractors; and,

(vi) certification of post-closure and notice in deed of post-closure.

(e) Financial reports including:

(i) report on ability to maintain financial assurance for closure and post-closure care; and,

(ii) certificate of insurance.

(f) Records of landfill and Stabilization/Containment Building leak detection/leak collection systems. The Permittee must notify the director if the response action plan requires implementation.

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(g) The volume of liquids removed from each sump.

(h) The location and quantity of each hazardous waste disposed of in the active landfill cell, on a map or diagram in accordance with OAC Rule 3745-54-73(B)(2).

(i) The following documentation for inclusion in each tank certification report: remedial investigation or corrective action, engineering feasibility reports, or other reports as needed through the facility closure period in accordance with OAC Rule 3745-55-92:

(i) Certification of structural integrity.

(ii) Tank and containment coating certification.

(iii) Proper installation.

(iv) As-built drawings for tank foundations and containment areas.

(j) The following documentation for each new secure landfill cell construction report:

(i) exploratory boring logs and any sample test results;

(ii) construction inspection reports, logs, soils and water sample analyses, moisture content, compaction, and permeability test results, and corrective or remedial work reports, including sand zone replacement;

(iii) manufacturer's weak seam evaluation reports;

(iv) as-built drawings, with the exact location and dimensions (including depth) of each cell with respect to permanently surveyed benchmarks, of all constructed secure landfill cells, with all changes in details of original design clearly marked;

(v) geologic maps of cell excavations, and associated soil gradation analyses; and,

(vi) record of compliance with ignitable, reactive, or incompatible waste restrictions for each secure cell.

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(k) Required records from the facility groundwater monitoring and inspection programs through the post-closure period, including but not limited to, the following:

(i) well boring and/or core logs;

(ii) soil sample gradation analyses and permeability test results;

(iii) well completion reports;

(iv) sampling logbook;

(v) various groundwater flow and direction reports;

(vi) compliance monitoring soil vapor survey data;

(vii) interim information reports and final source determination reports;

(viii) corrective action feasibility plans;

(ix) variance applications;

(x) sample custody forms;

(xi) groundwater analysis and QA/QC reports;

(xii) background concentration calculations; and,

(xiii) statistical test calculations done in accordance with the OAC Rules 3745-54-97, 98 and 99.

B.23 Contingency Plan Records
OAC Rule 3745-54-56(J)

The Permittee must note in the operating record the time, date, and details of any incident that requires the implementation of the contingency plan. Within 15 days after any such incident the Permittee must submit to the director a written report of the incident containing the elements set forth in OAC Rule 3745-54-56(J).

B.24 Manifest System
OAC Rules 3745-54-70, 3745-54-71, 3745-54-72 and 3745-54-76

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(a) In managing waste at the facility the Permittee must comply with OAC Chapter 3745-52 and OAC Rules 3745-54-71, 3745-54-72 and 3745-54-76 with regard to the manifest system.

(b) Manifest discrepancy report.

If a significant discrepancy in a manifest is discovered, the Permittee must attempt to reconcile the discrepancy. If not resolved with fifteen (15) days after receiving the waste, the Permittee must submit a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest, to the director in accordance with OAC Rule 3745-54-72.

(c) Unmanifested waste report.

If the Permittee receives unmanifested waste, which is not excluded from the manifest requirements of OAC Rule 3745-51-05, then the Permittee must submit an unmanifested waste report to the director within 15 days after receipt of the waste. The report must include the information required under OAC Rule 3745-54-76.

B.25 Annual Reports and Additional Reports
OAC Rules 3745-54-77 and 3745-54-75

The Permittee must comply with the annual report requirements set forth in OAC Rule 3745-54-75 and the additional report requirements set forth in OAC Rule 3745-54-77.

B.26 Closure Performance Standard
OAC Rule 3745-55-11

During facility closure, the Permittee must implement the provisions of the closure plan found in Section I of the permit application in such a manner as to achieve compliance with OAC Rule 3745-55-11.

B.27 Closure Plan
OAC Rules 3745-55-10, 3745-55-11 and 3745-55-13

The Permittee must implement those procedures detailed within Section I of the permit application, in accordance with OAC Rules 3745-55-10 through 3745-55-20.

In addition, the Permittee must submit to Ohio EPA within ninety (90) days after permit journalization, an updated Section I of the permit application which

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addresses all the comments outlined in Attachment B of this permit, including the "Comments Related to Drawings" section.

B.28 Amendment of Closure Plan
OAC Rules 3745-55-12 and 3745-50-51

Should a change in the facility closure plan become necessary, the Permittee must amend the closure plan in accordance with OAC Rule 3745-55-12(C).

B.29 Content of Closure Plan
OAC Rule 3745-55-12

The Permittee must maintain the closure plan at the facility which contains the elements set forth in OAC Rule 3745-55-12 and all elements required by the terms and conditions of this permit.

B.30 Notification of Closure
OAC Rule 3745-55-12

The Permittee must notify the director in writing at least 60 days prior to the date on which he expects to begin closure of landfill Cell M or final closure of the facility, as required by OAC Rule 3745-55-12(D).

B.31 Time Allowed For Closure
OAC Rule 3745-55-13

Within 90 days after receiving the final volume of hazardous waste, the Permittee must remove from the facility or treat or dispose of on-site all hazardous waste in accordance with the closure plan. The director may approve a longer closure period if the Permittee complies with all applicable requirements for requesting a modification to the permit as set forth in OAC Rule 3745-55-13(A). The Permittee must complete all closure activities within 180 days after receiving the final volume of hazardous waste in accordance with OAC Rule 3745-55-13. The director may approve a longer closure period if the Permittee complies with all applicable requirements for requesting a modification to the permit as set forth in OAC Rule 3745-55-13 (B).

B.32 Disposal or Decontamination of Equipment, Structures, and Soils
OAC Rule 3745-55-14

(a) The Permittee must decontaminate or dispose of all contaminated facility

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equipment, structures, and soils, as required by OAC Rule 3745-55-14, the closure plan and the terms and conditions of this permit.

(b) The Permittee must notify the Ohio EPA Northwest District Office within 5 business days prior to all rinseate and soil sampling.

B.33 Certification of Closure
OAC Rule 3745-55-15

The Permittee and an independent, registered professional engineer must certify that each hazardous waste management unit or the facility has been closed in accordance with the specifications in the closure plan and the terms and conditions of this permit, as required by OAC Rule 3745-55-15. The Permittee must furnish to the director, upon request, documentation supporting the certification.

B.34 Survey Plat
OAC Rule 3745-55-16

The Permittee must submit a survey plat to the director and the local zoning authority no later than the submittal of certification of closure of each hazardous waste disposal unit, in accordance with OAC Rule 3745-55-16.

B.35 General Post-Closure Requirements
OAC Rules 3745-55-17, 3745-55-18, 3745-55-19 and 3745-55-20

(a) Post-Closure Care Period

The Permittee must begin post-closure care for each tank system, landfill, or containment building after completion of closure of the unit and continue for 30 years after that date. Post-closure care must be in accordance with OAC Rule 3745-55-17 and the post-closure plan.

(b) Post-Closure Security

The Permittee must maintain security at the facility during the post-closure care period, in accordance with the post-closure plan and OAC Rule 3745-55-17(B).

(c) Amendment to Post-Closure Plan

The Permittee must amend the post-closure plan, when necessary, in accordance with OAC Rule 3745-55-18(D).

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(d) Post-Closure Notices

(i) No later than 60 days after certification of closure of each hazardous waste disposal unit, the Permittee must submit to the director and the local zoning authority records of the type, location, and quantity of hazardous waste disposed of within each cell or disposal unit, in accordance with OAC Rule 3745-55-19(A).

(ii) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the Permittee must do the following:

(a) Record a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, which contains the information required by OAC Rule 3745-55-19(B)(1).

(b) Submit to the director a certification that the Permittee has recorded the notation and submit a copy of the document in which the Permittee placed the notation.

(c) The Permittee must request and obtain a permit modification prior to post-closure removal of hazardous wastes, hazardous waste residues, liners, or contaminated soils, in accordance with OAC Rule 3745-55-19(c).

(e) Certification of Completion of Post-Closure Care

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee must certify that the post-closure care period was performed in accordance with the specifications in the post-closure plan and the terms and conditions of this permit, as required by OAC Rule 3745-55-20. The Permittee must furnish to the director, upon request, documentation supporting the certification.

B.36 Cost Estimate for Facility Closure and Post-Closure
OAC Rule 3745-55-42 and 3745-55-44

(a) The Permittee's most recent closure and post-closure cost estimate, prepared in accordance with OAC Rule 3745-55-42 and 3745-55-44 is specified in Section I of the permit application.

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(b) The Permittee must adjust the closure and post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with OAC Rule 3745-55-43 and 3745-55-45.

(c) The Permittee must revise the closure cost estimate and post-closure cost estimate whenever there is a change in the facility's closure plan and post-closure plan that increases the cost of closure and post-closure care, as required by OAC Rule 3745-55-42(c) and 3745-55-44(c).

(d) The Permittee must submit to the Ohio EPA and keep at the facility the latest closure cost estimate and post-closure cost estimate as required by OAC Rule 3745-55-42(D) and (E) and 3745-55-44(D) and (E).

B.37 Financial Assurance for Facility Closure and Post-Closure and Perpetual Care

With initial permit journalization in July 1991, additional monies were set aside within the post closure trust account for perpetual care and, as a result, $11.5 million were added to the post-closure trust account. This amount, in 1991 dollars, was derived from the estimated cost of replacing the caps on Cells "G" and "M", including the synthetic liner to the surface. The perpetual care amount, in association with the post-closure cost estimate, is adjusted annually for inflation or deflation. The Permittee is required to maintain, at a minimum, a level of funding in this account equal to the sum of the amount required by the OAC Rule 3745-55-45, and the perpetual care amount.

(a) The Permittee must maintain continuous compliance with OAC Rule 3745-55-43, 55-45, 55-46 and provide documentation of financial assurance, which meets the requirements of OAC Rule 3745-55-51, in at least the amount of the cost estimates required by Permit Condition B.36.

(b) Whenever the closure and/or post-closure cost estimates change, the Permittee must compare the new estimates with the Trustee's most recent statement of the trust funds. If the value of the funds is less than the amount of the new estimates, the Permittee must, within 60 days after the change in the cost estimates, either deposit an amount into the funds so that its value at least equals the amount of the current closure and post-closure cost estimates, or the Permittee must obtain other financial assurance, as specified in OAC Rule 3745-55-43, to cover the difference.

(c) The Permittee must retain the perpetual care amount of 11.5 million dollars (in July 1991 dollars) in the post-closure trust fund. This perpetual care amount must be reviewed annually and updated for inflation.

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(d) Upon approval of Ohio EPA, the Permittee and/or a third party contractor who performed all or part of the work for final closure, post-closure, or perpetual care will be reimbursed for the cost of the services performed.

(e) Excess monies from the closure and post-closure trust funds may be used for corrective and/or remedial actions relating to the facility or its operations, upon approval of the director. As used in this section, "excess monies" are defined as amounts in excess of the current cost estimates for closure and post-closure, and perpetual care.

(f) The closure and post-closure trust funds must be irrevocable and said agreements must be worded in such a manner as to cause said funds to be tax exempt. The Permittee must relinquish its rights to any excess monies in the aforementioned funds.

(g) Any excess monies remaining in the closure trust fund after the entire facility has been closed and certified in compliance with the applicable Ohio hazardous waste rules, must be transferred to the post-closure trust fund with the approval of Ohio EPA.

(h) The Permittee must direct the Trustee(s) of the closure and post-closure trust funds to invest the funds monies only in the investments listed in Attachment C of this permit.

B.38 Liability Requirements

The Permittee must maintain continuous compliance with the requirements of OAC Rule 3745-55-47 and the documentation of liability by providing liability coverage which meets the requirements of OAC Rule 3745-55-51 for sudden accidental occurrences in the amount of at least $1million per occurrence, with an annual aggregate of at least $2 million, exclusive of legal defense costs.

The Permittee also must demonstrate compliance with OAC Rule 3745-55-47(B) by maintaining liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence, with an annual aggregate of at least $6 million, exclusive of legal defense costs.

B.39 Incapacity of Owners or Operators, Guarantors, or Financial Institutions
OAC Rule 3745-55-48

The Permittee must comply with requirements set forth in OAC Rule 3745-55-48 regarding the incapacity of owners, operators, guarantors or financial institutions.

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B.40 General Requirements for Land Disposal Restrictions
OAC Chapter 3745-270

The Permittee must comply with all applicable regulations regarding land disposal prohibitions and restrictions as required by OAC Chapter 3745-270.

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MODULE C - CONTAINER STORAGE & TREATMENT

C. MODULE HIGHLIGHTS

The Permittee maintains a total of 12 container storage areas. These container storage areas are located inside and outside of a containment building (referred to here as the "Stabilization/Containment Building"), and are identified on Drawing D2000L-G01 and Drawing D2000L-G05 of the permit application. Drawing D2000L-G01 provides tables that detail the storage capacity, the description/location, maximum container storage size/quantity, surface area, and aisle space minimum/maximum surface areas for each permitted container storage area. The aisle space surface areas are provided to demonstrate compliance with OAC Rule 3745-54-35. In addition, Drawing D2000L-G01 depicts Area O located within the active landfill cell, which is to be used only for placement of grab and hold containers while the waste is undergoing treatment and for the storage of site generated waste that does not contain free liquids. Area O is not a permitted container storage area; and, containers containing hazardous waste can only be stored in this area for a period of 90 days or less.

Container storage areas G, H, I, K, and L are designed to divert storm water run-on and contain precipitation from a 25-year/24-hour storm event. In addition, the containment system is designed to collect the volume from the largest container or 10% of the total stored volume within the area, whichever is greater. Calculation of the containment system capacities are provided in Appendix D.45 of the permit application. The storage areas G, H, I, K, and L are depicted on Drawings D2000L-G09, D2000L-G12, D2000L-G13, D2000L-G14, D2000L-G15, and D2000L-G16 of the permit application.

Container storage areas M and N are connected through a HDPE lined covered concrete trench; therefore, the combined volume serves to comply with containment volumes for either area M and/or N. The containment system for areas M and N includes a geosynthetic clay liner (GCL) and an 80 mil HDPE liner with geonet and geotextile. These components are depicted on Drawings D2000L-G03, D2000L-G09, D2000L-G17 and D2000L-G18 of the permit application. The GCL consists of an inner layer of bentonite sandwiched between layers of geotextile.

Lastly, Table D-1 in Section D of the permit application details the storage capacity, location, surface area, and the types of containers to be stored for outside container storage areas G, H, I, K, L, M, and N. Section D-1a of the permit application details specific container storage information for areas within the Stabilization/Containment Building.

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C.1 Container Storage / Quantity Limitation

(a) The Permittee is authorized to store 4,385 cubic yards of hazardous waste at any given time in seven permitted outside storage areas and five storage areas located inside of the Stabilization/Containment building.

(i) The storage capacity for the seven outside storage areas are described in Table C-1 below and on Drawing D-2000L-G01 of the permit application:

Table C-1: Outside Container Storage Areas

Storage Area	Description/Location	Capacity (Cubic Yards)	Surface Area (Square Feet)	Secondary Containment (Type)	Description of Waste
G	Storage Area South of Leachate Storage Tank Building - this area is permitted, but has not yet been constructed.	1,050	9,073	HDPE Liner	All Permitted Waste Codes
H	Storage Area Adjacent to Northeast Corner of Stabilization/Containment Building	300	3,108	HDPE Liner	All Permitted Waste Codes
I	Storage Area East of Stabilization/Containment Building - this area is permitted, but has not yet been constructed.	450	4,551	HDPE Liner	All Permitted Waste Codes
K	Storage Area Adjacent to West Side of Leachate Storage Tank Building	600	5,376	HDPE Liner	All Permitted Waste Codes
L	Storage Area North of Leachate Storage Tank Building - this area is permitted, but has not yet been constructed.	200	2,146	HDPE Liner	All Permitted Waste Codes
M	Rail Storage Area Adjacent to Southeast Corner of Stabilization/Containment Building	300	3,570	HDPE Liner and Trench	All Permitted Waste Codes
N	Rail Storage Area Adjacent to Southwest Corner of Stabilization/Containment Building	300	3,276	HDPE Liner and Trench	All Permitted Waste Codes

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(ii) The storage capacity for the five storage areas located inside of the Stabilization/Containment building are described in Table C-2 below and on Drawing D-2000L-G01 of the permit application:

Table C-2: Stabilization/Containment Building Storage and/or Treatment Areas

Storage Area	Description/Location	Capacity (Cubic Yards)	Surface Area (Square Feet)	Type of Containment	Description of Waste
B	2 Storage and Treatment Areas North and South of Excavator Bridge	250	5,000	Stabilization/ Containment Building	All Permitted Waste Codes
C	8 Storage Areas East and West of Crusher	635	12,330	Stabilization/ Containment Building	All Permitted Waste Codes
D	Storage and Treatment Area North of Crusher	50	2,500	Stabilization/ Containment Building	All Permitted Waste Codes
E	Storage Area West of Campaign Bin	50	2,200	Stabilization/ Containment Building	All Permitted Waste Codes
T	Rail Car and Storage and Treatment Area	200	3,100	Stabilization/ Containment Building	All Permitted Waste Codes

(b) The Permittee must store hazardous waste in the types of containers (size and type) described in Section D of the permit application.

(c) For the purpose of compliance with the capacity limitation of this permit, each container will be considered to be storing an amount of hazardous waste equal to its capacity, regardless of the actual quantity stored in the container.

(d) Permit Conditions C.1(a) and C.2 shall not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34.

However, when accumulating waste within the permitted container storage area, in accordance with OAC Rule 3745-52-34, the Permittee must not, for the total amount of hazardous waste stored and accumulated, exceed the maximum container storage inventory established under this permit condition.

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C.2 Limitations on Treatment of Hazardous Waste in Containers

(a) The Permittee is authorized to treat hazardous waste in the container treatment areas B, D, and T located in the Stabilization/Containment Building, which are described above in Table C-2. The Permittee must treat hazardous waste in containers in the manner described in Section D of the permit application.

(b) Permit Condition C.2(a) must not apply to the Permittee's activities as a generator treating hazardous waste in containers on-site in compliance with OAC Rule 3745-52-34.

However, when treating waste within the permitted treatment area, in accordance with OAC Rule 3745-52-34, the Permittee must not, for the total amount of hazardous waste treated, exceed the maximum throughput capacity established under this condition.

C.3 Waste Identification

The Permittee must store or treat in containers only the hazardous waste codes specified in Part A of the permit application.

C.4 Condition of Containers
OAC Rule 3745-55-71

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee must transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit and the hazardous waste facility chapters of the OAC.

C.5 Compatibility of Waste with Containers
OAC Rule 3745-55-72

The Permittee must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

C.6 Management of Containers
OAC Rule 3745-55-73

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(a) The Permittee must keep all containers closed during storage, except when it is necessary to add or remove waste, and must not open, handle, or store containers in a manner which may rupture the container or cause it to leak. This condition does not apply to mixing bins and encapsulation boxes within the Stabilization/Containment Building.

(b) In the event lab-pack wastes are generated they must be handled in compliance with applicable storage requirements.

(c) In the event lab-pack wastes are generated they must be packaged in drums containing absorbent material that is compatible with the waste.

(d) As described in Section D of the permit application, loading and unloading of containers or drums must be conducted at locations where secondary containment capable of minimizing the release of spilled material to the environment is provided.

(e) As described in Section D of the permit application, when handling containers, the Permittee must take all reasonable steps to prevent damage to or rupture of containers. Container movement must be accomplished by trained personnel using a forklift, two wheel drum cart, or other specialized container handling unit.

(f) Containers that can be placed on pallets must be stored on pallets in rows no more than two pallets wide and no more than two layers high.

(g) Deheading of drums and/or transfer of drum or container contents must occur only within areas provided with secondary containment.

(h) After each shipment of hazardous waste is received and has been placed into storage, the Permittee must label containers storing hazardous waste, with the following information:

(i) waste type and description;

(ii) date waste was received into the storage area;

(iii) Permittee load number and/or container sequence number (for on-site generated waste);

(iv) generator name; and,

(v) Waste Stream Identification Number (WSID).

C.7 Containment Systems
OAC Rule 3745-55-75

(a) The Permittee must construct and maintain the containment systems in accordance with the plans and specifications contained in Section D of the permit application.

(b) The Permittee must maintain the containment systems as described in the permit application, designed with sufficient capacity to contain ten percent of the total volume of the containers or the volume of the largest container, whichever is greater. The containment systems must be free of cracks and gaps and sufficiently impervious to contain leaks and spills and accumulated precipitation until the collected material is detected and removed.

(c) The base of the containment systems must be sloped to a collection sump or the containment systems must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.

(d) Run-on into the containment systems must be prevented unless the collection systems have sufficient excess capacity in addition to that required in Permit Condition C.7(b) above.

(e) Spilled or leaked waste, accumulated precipitation and other spilled liquid must be removed from the spill containment areas, storage areas, unloading areas, sumps and collection areas within 24 hours from the time discovered or, if this is not possible, in as timely a manner as necessary to prevent overflow of the containment system.

(f) The Permittee must maintain and operate the railroad car storage and loading/unloading area liquid collection and removal system to collect and remove contaminated liquids created by waste, wash water, or rain water. The liquid collection system must be maintained and operated as to allow the system to function without clogging through the scheduled closure of the railroad car storage and loading/unloading area.

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C.8 Railroad Spur Track – Areas M, N and T

(a) Railroad locomotives are not permitted to enter the Stabilization/Containment Building.

(b) Rail car movements into and away from the Permittee's facility will occur at speeds less than 10 mph.

(c) The Permittee must, at all times, maintain access to the paved road adjacent to Storage Areas M and N.

(d) The Permittee must advise the generator to line the gondola railcars and intermodal freight containers with a polyethylene liner (or equivalent) prior to shipment of waste to the facility.

(e) The Permittee must label all railroad cars arriving at the facility in accordance with OAC Rule 3745-270-50(A)(2)(a).

C.9 Inspection Schedules and Procedures
OAC Rules 3745-54-15, 3745-54-73 and 3745-55-74

(a) The Permittee must inspect the container storage area in accordance with the inspection schedule contained in Section F of the permit application and in accordance with OAC Rule 3745-54-15. The inspection schedule must be designed to detect for leaking containers, deteriorating containers and/or containment systems. The Permittee must note the results of these inspections in the inspection log along with any remedial action taken.

(b) Areas subject to spills, such as loading or unloading areas, must be inspected daily when in use pursuant to the inspection procedure described in Section F of the permit application. The Permittee must maintain these inspection results in the facility operating record.

(c) In accordance with OAC Rule 3745-55-71, the Permittee must transfer the contents of any drums or containers found to be leaking, corroded, deteriorated or incompatible with its contents to a compatible container or storage tank, or into an over pack drum, or stabilization treatment operation as soon as possible after the inspection in which the deteriorated drums are found.

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(d) All railroad cars must be inspected by trained personnel prior to entering and/or exiting the facility, and in accordance with OAC Rule 3745-55-74.

C.10 Recordkeeping
OAC Rule 3745-54-73

(a) The Permittee must comply with all recordkeeping requirements of OAC Rule 3745-54-73 as part of the facility operating record.

(b) The Permittee must provide an information sheet explaining the proper loading procedures to prevent waste from leaking during transportation to generators who transport waste to the facility by rail car. The Permittee must document in the operating record that the information sheet was provided to the generator prior to receiving the generator's first rail shipment.

(c) After each shipment of hazardous waste is received and has been placed into storage, the Permittee must log into a container storage area daily report the following information:

(i) number of containers in the storage area;

(ii) waste type and description;

(iii) date waste was received into the storage area;

(iv) waste location (by storage area);

(v) date waste was removed from the storage area;

(vi) Permittee load number and/or container sequence number;

(vii) generator name; and,

(viii) Waste Stream Identification Number (WSID).

C.11 Special Container Provisions for Ignitable or Reactive Waste
OAC Rules 3745-54-17 and 3745-55-76

(a) The Permittee must not store ignitable or reactive waste except in accordance with OAC Rules 3745-54-17 and 3745-55-76.

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(b) The Permittee must not locate containers holding ignitable or reactive waste within 100 feet from the center of any public road or within 50 feet of the facility's property line.

(c) The Permittee must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and must follow the storage procedures specified in Section D of the permit application.

(d) In the event that the Permittee inadvertently receives ignitable, flammable or combustible liquid wastes (e.g., from phase separation that occurred as a result of transportation), the Permittee must store such wastes as follows:

(i) The Permittee must store Class I flammable liquids (i.e., flashpoint less than 100 ^{0}F) only in metal containers. The Permittee must store Class II and Class III combustible liquids only in metal or polyethylene containers. Note that Class II combustible liquids have a flashpoint between 100^{0}F and 140^{0}F, while Class III combustible liquids have a flashpoint greater than 140^{0}F. The ignitable waste class of a contaminated waste must be identified based on the flash point of the waste and the ignitability class must be recorded on the Waste Characterization Data Sheet.

(ii) All containers for storage of ignitable wastes must meet Department of Transportation (DOT) specifications (49 CFR 178 Subpart D). Ignitable wastes which are not received in DOT specified metal or polyethylene containers must be immediately transferred to a DOT specified metal or polyethylene container.

C.12 <u>Special Container Provisions for Incompatible Waste</u>
OAC Rules 3745-54-17(B) and 3745-55-77

(a) The Permittee must not store incompatible waste except in accordance with OAC Rules 3745-54-17(B) and 3745-55-77.

(b) The Permittee must not place hazardous waste in an unwashed container that previously held an incompatible waste or material.

(c) The Permittee must separate or protect (by means of a dike, berm, wall, or other device) a storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments.

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(d) The Permittee must store containers of incompatible waste in separate areas of the container storage areas located inside and outside of the Stabilization/Containment Building as classified by the following compatibility groups:

(i) Ignitible waste and/or non-ignitable wastes;

(ii) Oxidizers;

(iii) Reducers;

(iv) Acids;

(v) Bases;

(vi) Acid Sensitive (i.e., potential consequence of generating toxic hydrogen cyanide or hydrogen sulfide gas);

(vii) Alkaline Sensitive; and,

(viii) Water-Reactive.

C.13 RESERVED

C.14 Closure and Post-Closure
OAC Rules 3745-55-10 through 3745-55-20, and 3745-55-78

At closure of the container storage areas, the Permittee must remove all hazardous waste and hazardous waste residues from the containment systems, in accordance with the procedures in the closure plan set forth in Section I of the permit application.

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MODULE D - TANK STORAGE AND MANAGEMENT

D. MODULE HIGHLIGHTS

The Permittee has constructed and operates four 25,000 gallon aboveground tanks (S-100, S-200, S-300, and S-400) for the storage of hazardous waste from the container storage areas, laboratory and stabilization/containment building and multi-source leachate from closed and operating landfills. These tanks are located within a building with secondary containment for each tank designed to be capable of containing greater than 100 percent of the total volume of each tank. Four additional aboveground tanks (as yet to be constructed: S-4, S-5, S-6, and S-7) are designed to manage oily waste that may be generated from on-site remedial or corrective measures activities. These tanks will be located outside. Secondary containment for these tanks is designed to be capable of containing greater than 100 percent of the total volume of the largest tank plus additional volume for the accumulation from a 25-year/24-hour storm event. All tanks are or will be placed within secondary containment areas and will be separated into various waste categories (i.e., leachate/aqueous waste and oily waste).

Waste transfer into tanks occurs via two methods: the tanker method by which waste is pumped into the tanks from tanker trucks that collect waste from various points throughout the facility; and, via an automatic pump and double walled auxiliary piping system. This latter method is particular to F039 leachate that is pumped from the primary and secondary collection systems of the active Cell M into tanks S-100, S-200, S-300, and S-400. This pump system is equipped with an automatic high level shutdown override as presented in Drawings D2000-F01 and D8102-101 of the permit application.

D.1 Tank Storage Quantity Limitation/Waste Identification

(a) The Permittee may store a total volume of 160,000 gallons of hazardous waste in 8 tanks, subject to the terms of this permit and as detailed in the table below.

The Permittee is authorized to store in tanks only the EPA hazardous waste numbers specified in the permit application and summarized below:

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Tank No	Capacity (Gallons)	Dimensions of Tank (Feet)	Secondary Containment	Location	Hazardous Waste No. & Description
S-100	25,000	10 x 42.5	Pre-fabricated Steel	Indoor	F039/D002 Leachate
S-200	25,000	10 x 42.5	Pre-fabricated Steel	Indoor	F039/D002 Leachate
S-300	25,000	10 x 42.5	Pre-fabricated Steel	Indoor	F039/D002 Leachate
S-400	25,000	10 x 42.5	Pre-fabricated Steel	Indoor	F039/D002 Leachate
S-4 (as yet to be constructed)	15,000	12 x 20	HDPE 80 Mil Liner	Outdoor	D018 Oily Waste
S-5 (as yet to be constructed)	15,000	12 x 20	HDPE 80 Mil Liner	Outdoor	D018 Oily Waste
S-6 (as yet to be constructed)	15,000	12 x 20	HDPE 80 Mil Liner	Outdoor	D018 Oily Waste
S-7 (as yet to be constructed)	15,000	12 x 20	HDPE 80 Mil Liner	Outdoor	D018 Oily Waste

(b) The provision of Permit Condition D.1(a) shall not apply to the Permittee's activities as a generator storing hazardous waste in tanks on-site in compliance with the provisions of OAC Rule 3745-52-34.

However, when storing waste in tanks in accordance with OAC Rule 3745-52-34, the Permittee must not, for the total amount of hazardous waste stored, exceed the maximum volume established under this permit condition.

D.2 <u>Limitations on Treatment of Hazardous Waste in Tanks</u>

(a) The Permittee is not authorized to treat hazardous waste in tanks.

(b) The provision of Permit Condition D.2(a) shall not apply to the Permittee's activities as a generator treating hazardous waste in tanks on-site in compliance with the provisions of OAC Rule 3745-52-34.

D.3 <u>Design and Installation of New Tank Systems or Components</u>
OAC Rule 3745-55-92

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(a) The Permittee shall construct tanks S-4, S-5, S-6, and S-7 in accordance with Section D of the permit application.

(i) The Permittee must locate all tanks at least 100 feet from the center line of the nearest City of Toledo raw water lines, and at least 100 feet from the center line of any public road; or

(ii) the protective distances set forth in section 2-2 of the National Fire Protection Association 30, *Flammable and Combustible Liquids Code 2003 Edition*, whichever is greater.

(b) Prior to operation of the newly constructed tank system, the Permittee must submit the certification of installation of the tank system in accordance with OAC Rule 3745-55-92(B) to ensure that proper handling procedures were adhered to in order to prevent damage to the system during installation. See also Permit Condition A.23.

(i) The Permittee must install on each tank a sonic liquid level or capacitance type detector, a conservation breather vent, man-way, a separate fill/drain line, and a plug or ball valve with a resistant seal, or equivalent. Prior to any waste being stored in tanks, the Permittee must install a vapor balancing system in all tanks containing organic compounds. The tanks handling ignitable wastes must be grounded and must be equipped with flame arresters and explosion-proof controls. The tanks in each waste category must have a separate loading/unloading station and the tanks, pumps, and connecting pipe work must be color-coded as an added safeguard against possible mixing of incompatible wastes.

(ii) Tanks in each incompatible waste category must have a separate loading/unloading station. Tanks, pumps and connecting ancillary pipe work must be color coded to provide an additional safeguard against possible mixing of incompatible wastes.

D.4 Containment and Detection of Releases.
OAC Rule 3745-55-93

(a) New Tank Systems

The Permittee must construct and operate the secondary containment system in accordance with requirements of OAC Rule 3745-55-93(B) through (F), and Section D of the permit application.

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New tanks at the facility are: S-100, S-200, S-300, and S-400.
New tanks as yet to be constructed are: S-4, S-5, S-6, and S-7.

(b) Reserved

(c) Reserved

(d) All collection sumps must be provided with an HDPE liner and equipped with an HDPE collection pipe. The HDPE liner within the diked surfaces must be sloped such that all liquids must drain to a collection sump.

(e) The Permittee must design and operate all secondary containment system barriers to contain 100 percent of the total volume of the largest tank within a given area and the precipitation from a 25 year/24 hour storm event.

(f) The Permittee must design and install all external liner systems so as to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank(s) (i.e., the liner must be capable of preventing lateral as well as vertical migration of the waste).

(g) The Permittee must ensure that all external liner systems designed for secondary containment are free of cracks or gaps. The Permittee must check for visible damage including small scratches, indentation, tears or punctures to the liner as it is installed. All such damage must be inspected by the liner installation contract inspector and repaired.

(h) The Permittee must remove liquids or sludge from the secondary containment systems within twenty-four (24) hours, or in as timely a manner as is possible, after the inspection during which the materials were found in these areas.

D.5 Operating Requirements
OAC Rule 3745-55-94

(a) The Permittee must not place hazardous wastes or treatment reagents in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail.

(b) The Permittee must prevent spills and overflows from the tank or containment systems using the methods described in the permit application. The Permittee must comply with the requirements of OAC Rule 3745-55-96

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if a leak or spill occurs in the tank system. The Permittee must, at a minimum, use the following controls and practices to prevent spills and overflows from tank or containment systems:

(i) The storage tanks and wastes must be compatible. Tanks must not be used for mixing non-compatible waste. Prior to adding to the contents of any tank, the tank inventory control logs must be reviewed to ensure that the tank is operated according to design specifications. Incompatible waste must be stored as specified in Permit Condition B.7(a).

(ii) Loading and unloading of transportation vehicles to or from tanks must be conducted at locations where secondary containment is capable of minimizing the release of spilled material to the environment.

(iii) Upon completion of the waste transfer, the valves must be closed and all hoses must be disconnected over a portable container to collect drippings. The storage tank must be gauged and the tank's valve locked.

(c) Organic emissions from the storage tanks must be controlled by utilizing carbon adsorption or other equivalent systems.

(d) Smoking must be prohibited and "No Smoking" signs must be placed in clear view in the storage tank areas. Open flames and heat sources must be prohibited in the storage tank areas, unless these areas are cleared of all ignitable wastes, residues, and vapors.

D.6 <u>Inspection Schedules and Procedures</u>
OAC Rule 3745-55-95

(a) The Permittee must inspect the tank systems in accordance with the Inspection Schedule found in Section F of the permit application and must complete the items in Permit Conditions D.6(b) and D.6(c) as part of those inspections.

(b) The Permittee must inspect the overfill controls in accordance with the procedure and schedule in the permit application.

(c) The Permittee must inspect the following components of the tank system once each operating day:

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(i) aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

(ii) data gathered from monitoring and leak detection equipment (e.g., volume, pressure or temperature gauges) to ensure that the tank system is being operated according to its design; and,

(iii) 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).

(d) The Permittee must document compliance with Permit Condition D.6 in the operating record of the facility.

(e) For each storage tank in use, the Permittee must document in the Tank Inventory Control Log the following information on a daily basis:

(i) the quantity of each waste that was added or removed;

(ii) the EPA hazardous waste number of the waste material transferred;

(iii) any additional information or comments concerning waste compatibility and/or the processing of the waste necessary for safe operation of the tank;

(iv) the tank volume after the waste transfer, how it was gauged, and a verification that overfilling control equipment is properly working; and,

(v) proper operation of the level control devices/equipment.

(f) On an annual basis, all storage tanks must be emptied and inspected for signs of erosion and corrosion.

D.7 <u>Response to Leaks or Spills</u>
OAC Rule 3745-55-96

(a) In the event of a leak or a spill from the tank system, from a secondary containment system, or if a system becomes unfit for continued use, the Permittee must remove the system from service immediately and complete the following actions:

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(i) Immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(ii) If the release was from the tank system, the owner/operator must, within twenty-four hours after detection of the leak, or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove 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 tank system to be performed.

If the material released was to a secondary containment system, all released materials must be removed within twenty-four hours or in as timely a manner as possible to prevent harm to human health and the environment.

(iii) The Permittee must immediately conduct a visual inspection of all releases to the environment and based on that inspection: (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water. The area of the spill must be rinsed along with the collection sump, if impacted by the release. The rinseate must be analyzed and managed using the universal treatment standards, if applicable, or in accordance with the requirements of Chapter 3745-52. The completed remediation must obtain Ohio EPA approval before the affected tank system is placed back into service.

(b) Unless the requirements of Permit Conditions D.7(b)(i) through D.7(b)(vi) are satisfied, the Permittee must close its tank system in accordance with OAC Rule 3745-55-97 and its closure plan if there has been a leak or spill from the tank system, from a secondary containment system, or if a system becomes unfit for use.

(i) For a release caused by a spill that has not damaged the integrity of the system, the Permittee must remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.

(ii) For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee must repair the primary system prior to returning it to service.

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(iii) For a release to the environment caused by a leak from the portion of the tank system component that is not readily available for visual inspection, the Permittee must provide secondary containment for the entire component that meets the requirements of OAC Rule 3745-55-93 before the component can be returned to service.

(iv) If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in OAC Rules 3745-55-92 and 3745-55-93.

(c) For all major repairs (e.g., installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault) to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by an independent, qualified, registered professional engineer in accordance with OAC Rule 3745-50-42(D)(1) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. This certification must be submitted to the Director within seven days after returning the tank system to use.

D.8 Recordkeeping and Reporting
OAC Rules 3745-55-96, 3745-55-91(A), and 3745-55-92(G)

(a) The Permittee must report to the director, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment. A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned up, need not be reported. Releases that are contained within a secondary containment system need not be reported.

(b) Within 30 days of detecting a release to the environment from the tank system or secondary containment system, the Permittee must report the following information to the Director:

(i) Likely route of migration of the release;

(ii) characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

(iii) results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Director with a schedule

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of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;

(iv) proximity of downgradient drinking water, surface water, and populated areas; and

(v) description of response actions taken or planned.

(c) The Permittee must 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.

(d) The Permittee must keep on file at the facility the written assessment of the tank system's integrity.

(e) Reserved

(f) All reports summarizing the inspection and assessment of tank condition and shell thickness/comparability must be kept as part of the facility's operating record.

D.9 Closure and Post-Closure Care
OAC Rule 3745-55-97

(a) At closure of the tank system(s), the Permittee must follow the procedures in the closure plan in Section I of the permit application.

(b) If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, in accordance with the closure plan, then the Permittee must close the tank system(s) and perform post-closure care following the contingent procedures in the closure plan and in the post-closure plan.

D.10 Special Tank Provisions for Ignitable or Reactive Wastes
OAC Rule 3745-55-98

(a) The Permittee must not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the following procedures are followed:

(i) the waste is stored in such a way that it is excluded from any material or from those conditions which may cause the waste to ignite or react;

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(ii) the tank is solely used for emergencies in accordance with OAC Rule 3745-55-98(A)(3); or,

(iii) the tank was designed and constructed for the purpose of storing ignitable or reactive waste and meets applicable fire codes; and,

(iv) the Permittee must document compliance with this condition and place it in the operating record.

(b) The Permittee must 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 built upon, as required in Tables 2-1 to 2-6 of the National Fire Protection Association's *Flammable and Combustible Liquids Code, 2003 Edition*, incorporated by reference in OAC Rule 3745-50-11.

D.11 Special Tank Provisions for Incompatible Wastes
OAC Rule 3745-55-99

(a) The Permittee must not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system, unless the procedures specified in OAC Rule 3745-55-99(A) are followed. The Permittee must document compliance with this condition and place that documentation into the operating record.

(b) The Permittee must not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless the requirements of Permit Condition D.11(a) and OAC Rule 3745-54-17(B) are met.

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MODULE E - CORRECTIVE ACTION REQUIREMENTS

E. MODULE HIGHLIGHTS

In 1987, a RCRA Facility Assessment (RFA) of the Permittee's facility was conducted by a U.S. EPA contractor. The RFA consisted of a preliminary review of existing facility information and a visual site inspection. The RFA report was received by U.S. EPA on September 8, 1987. In October of 1991, the Permittee submitted a RCRA Facility Investigation (RFI) Work Plan. The RFI Work Plan was approved by U.S. EPA on March 6, 1995. This RFI Work Plan, and a Supplemental RFI Work Plan issued by U.S. EPA in September of 1996, focused on an environmental investigation of the Northern Sanitary Landfill (Waste Management Unit 6) only. The Permittee submitted a draft final RFI report to U.S. EPA on June 20, 1997. The Permittee also submitted a draft Corrective Measure Study (CMS) Work Plan for Waste Management Unit 6.

On September 30, 1998, U.S. EPA modified the Permittee's federal permit to include more specific corrective action requirements and include a specific list of Waste Management Units (WMU) and Areas of Concern (AOC). On June 23, 2000 the Permittee submitted a Description of Current Conditions (DOCC) to U.S. EPA. The Permittee submitted a revised DOCC on November 28, 2000 to U.S. EPA and on February 21, 2001, U.S. EPA issued a conditional approval of the DOCC. The Permittee submitted a second revision to the DOCC on March 23, 2001 to address the conditions of approval.

On April 23, 2001, the Permittee submitted a RFI Work Plan that provided details of the formal site investigation. On December 20, 2001, U.S. EPA issued a conditional approval of the RFI Work Plan. The Permittee submitted a revised RFI Work Plan dated February 28, 2002 to address the conditions of approval. On April 10, 2002, U.S. EPA granted final approval of the DOCC and the RFI Work Plan. Per the requirements of the Permittee's federal permit, implementation of the RFI Work Plan began on March 18, 2002.

On July 18, 2003, the Permittee submitted an RFI Phase I Report and Phase II Work Plan. This report presents the findings from the data collected during field work and sampling events beginning in mid 2002. Limited field work and sampling was completed at SWMU 5 during 2004. The Phase II Work Plan represents additional sampling that the Permittee has proposed.

On January 27, 2004, Ohio EPA became the lead agency with RCRA Corrective Action document approval and oversight responsibilities at the facility. All

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documents submitted by the Permittee, which have been approved by U.S. EPA, are included by reference into this permit. The Permittee is required to continue implementation of the RFI Work Plan in accordance with Permit Condition E.5.

E.1 Corrective Action at the Facility
OAC Rules 3745-50-10 & 3745-54-101

In accordance with OAC Rule 3745-50-10, "waste management unit" means any discernible unit at which solid waste, hazardous waste, infectious waste (as those terms are defined in ORC Chapter 3734), construction and demolition debris (as defined in ORC Chapter 3714), industrial waste or other waste (as those terms are defined in ORC Chapter 6111) has been placed at any time, irrespective of whether the unit was intended for the management of waste or hazardous waste. Such units include any area at a facility at which wastes have been routinely and systematically managed or released. As used in this permit, the term "waste management unit" shall be consistent with and equivalent to the term "solid waste management unit" as that term is used in the federal Corrective Action program. As Corrective Action was initiated under U.S. EPA, the Permittee may continue to use the terms interchangeably throughout the process. For the purpose of Corrective Action, facility is defined as all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA. The terms Interim Measure (IM), RCRA Facility Investigation (RFI), Corrective Measures Study (CMS) and Corrective Measure Implementation (CMI) are defined in U.S. EPA's Corrective Action Plan (CAP)(OSWER Directive 9902.3-2A, May 1994).

The Permittee must institute Corrective Action as necessary to protect human health and the environment for all releases of hazardous waste(s) or hazardous constituent(s) from any WMUs at the Facility, regardless of the time at which waste was placed in such units.

E.2 Corrective Action Beyond the Facility Boundary
OAC Rules 3745-54-101

The Permittee must implement Corrective Action beyond the Facility property boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of Ohio EPA that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the Facility boundary where off-site access is denied. On-site measures to address such releases will be addressed under the RFI, CMS, and CMI phases, as determined to be necessary on a case-by-case basis.

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E.3 Identification of WMUs
OAC Rules 3745-50-44(D) & 3745-54-101

(a) The WMUs listed below must be addressed in the RFI. The RFI must address ground water, surface water, soils, waste, and air media associated with each of the WMUs, unless otherwise noted in the list below:

WMU Number	Unit
WMU 1	Landfill Cell F
WMU 2*	Landfill Cell G
WMU 3*	Landfill Cell H
WMU 4*	Landfill Cell I
WMU 5	Millard Road Landfill
WMU 6	Northern Sanitary Landfill
WMU 7	Central Sanitary Landfill
WMU 8	Old Oil Pond #1 (South Pond)
WMU 9	New Oil Pond #2 (North Pond)
WMU 10	Ash Disposal Areas
WMU 11	Former Tepee Burner
WMU 12	Former Bill's Road Oil Operation

*WMU 2, WMU 3, WMU 4 were not retained for further investigation.

(b) In addition to the WMUs identified in Section E.3(a), the following AOCs must be addressed in the RFI:

Area of Concern Number	Area
AOC 1	Toledo Water Lines
AOC 2	Truck Scale
AOC 3	Building "C" Equipment Maintenance Area

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Area of Concern Number	Area
AOC 4	Building "C" Septic Tank and Leach Field
AOC 5	Decontamination Building
AOC 6	Oily Waste Above Ground Storage Tanks
AOC 7	Butz Crock- Concrete Utility Vault
AOC 8	Staging Area
AOC 9	Cell M Water Retention Basin
AOC 10	Rail Spur
AOC 11*	Former Truck Scale

*AOC 11 was not retained for further investigation.

(c) The following WMUs are currently in operation and are subject to closure, post-closure, and perpetual care requirements as applicable and therefore will not be included in the RFI at this time:

WMU Number	Unit
WMU 13	Landfill Cell M
WMU 14	Leachate Storage Building
WMU 15	Containment Building
WMU 16	Area H Storage
WMU 17	Area K Storage
WMU 18	Rail Storage Areas M and N

E.4 Reserved

E.5 RCRA Facility Investigation (RFI)
OAC Rule 3745-54-101

The Permittee must continue with implementation of the RFI Work Plan that was approved by U.S. EPA on April 10, 2002. In the event of newly discovered units,

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the Permittee must conduct an RFI to thoroughly evaluate the nature and extent of the release of hazardous waste(s) and hazardous constituent(s) from WMUs and AOCs identified in Permit Condition E.10. The major tasks and required submission dates are shown below. The scope of work for each of the tasks is found in U.S. EPA's CAP.

(a) RFI Implementation

Within 60 days of Ohio EPA written approval of the RFI Work Plan, the Permittee must implement the RFI Work Plan according to the terms and schedule in the approved RFI Work Plan.

(b) RFI Final Report(s)

Within 60 days after the completion* of each phase of the RFI, the Permittee must submit an RFI Final Report to Ohio EPA. Each RFI Final Report must describe the procedures, methods, and results of the RFI phase completed. Each Final Report must contain adequate information to support further decisions concerning corrective action at the facility.

(i) If necessary, Ohio EPA must provide written comments on each Final RFI Report to the Permittee.

(ii) Within 60 days of receipt of Ohio EPA's comments, the Permittee must submit either an amended or new RFI Final Report that incorporates Ohio EPA's comments.

(iii) Ohio EPA will approve or modify and approve, in writing, the amended or new RFI Final Report. Each RFI Final Report, as approved or as modified and approved, must be incorporated into this permit and become an enforceable condition of this permit. Subsequent changes to the approved RFI Final Report(s) must be authorized by Ohio EPA.

* Completion occurs when all activities approved in the RFI Work Plan are completed with the exception of report preparation.

E.6 Interim Measure (IM)

Based on the RFI Final Report or other information documenting a release of hazardous waste or constituents to the environment, Ohio EPA may require (or the Permittee may propose) the development and implementation of an interim

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measure (this may include an IM Work Plan) at any time during the life of the permit to mitigate or eliminate a threat to human health or the environment. The Permittee must implement the IM upon a time frame established by Ohio EPA.

E.7 Determination of No Further Action

(a) Permit Modification

Based on the results of the completed RFI and other relevant information, the Permittee may submit an application to Ohio EPA for a permit modification under OAC Rule 3745-50-51 to terminate the Corrective Action tasks of the Schedule of Compliance. Other tasks identified in the Schedule of Compliance must remain in effect. This permit modification application must conclusively demonstrate that there are no releases of hazardous waste or constituents from WMUs at the Facility that pose an unacceptable risk to human health and the environment.

If, based upon review of the Permittee's request for a permit modification, the results of the completed RFI, and other information, Ohio EPA determines that releases or suspected releases which were investigated either are nonexistent or do not pose an unacceptable risk to human health and the environment, then Ohio EPA will approve the requested modification. Decisions regarding the completion of RCRA Corrective Action and no further action may be made for the entire Facility, for a portion of the Facility, or for a specific unit or release.

(b) Periodic Monitoring

A determination of no further action shall not preclude Ohio EPA from requiring continued or periodic monitoring of air, soil, ground water, or surface water, if necessary to protect human health and the environment, when site-specific circumstances indicate that potential or actual releases of hazardous waste or constituents exists.

(c) Further Investigations

A determination of no further action shall not preclude Ohio EPA from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates that a release or potential release from a WMU at the Facility may pose an unacceptable risk to human health or the environment. In such a case, Ohio EPA shall initiate a

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modification to the terms of the permit to rescind the determination made in accordance with Permit Condition E.7(a). Additionally, in the event Ohio EPA determines that there is insufficient information on which to base a determination, the Permittee, upon notification, is required to develop a Work Plan and upon Ohio EPA approval of that Work Plan, perform additional investigations as needed.

E.8 Corrective Measures Study (CMS)

If Ohio EPA determines, based on the results of the RFI and any other relevant information, that corrective measures are necessary, Ohio EPA will notify the Permittee in writing that the Permittee must conduct a CMS either as below or as described in Ohio EPA's notification to the Permittee. The purpose of the CMS will be to develop and evaluate the corrective action alternative(s) and to outline one or more alternative corrective measure(s) that will satisfy the performance objectives specified in Permit Condition E.9.

(a) CMS Work Plan

The Permittee must submit a written CMS Work Plan to Ohio EPA within 60 days from the notification by Ohio EPA of the requirement to conduct a CMS.

(i) If necessary, Ohio EPA will provide written comments on the CMS Work Plan to the Permittee.

(ii) Within 60 days of receipt of Ohio EPA's comments, the Permittee must submit either an amended or new CMS Work Plan that incorporates Ohio EPA's comments.

(iii) Ohio EPA will approve or modify and approve, in writing, the amended or new CMS Work Plan. The CMS Work Plan, as approved or as modified and approved, must be incorporated into this permit and become an enforceable condition of this permit. Subsequent changes to the approved CMS Work Plan must be authorized by Ohio EPA.

(b) CMS Work Plan Implementation

Within 30 days of Ohio EPA written approval of the CMS Work Plan, the Permittee must implement the CMS Work Plan according to the terms and schedule in the approved CMS Work Plan.

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(c) CMS Final Report

Within 30 days after the completion* of the CMS, the Permittee must submit a CMS Final Report to Ohio EPA. The CMS Final Report must summarize the results of the investigations for each remedy studied and must include an evaluation of each remedial alternative.

(i) If necessary, Ohio EPA will provide written comments on the CMS Final Report to the Permittee.

(ii) Within 60 days of receipt of Ohio EPA's comments, the Permittee must submit either an amended or new CMS Final Report that incorporates Ohio EPA's comments.

(iii) Ohio EPA will approve or modify and approve, in writing, the amended or new CMS Final Report. The CMS Final Report, as approved or as modified and approved, must be incorporated into this permit and become an enforceable condition of this permit. Subsequent changes to the approved CMS Final Report must be authorized by Ohio EPA.

* Completion occurs when all activities approved in the CMS Work Plan are completed with the exception of report preparation.

E.9 Corrective Measures Implementation (CMI)

Based on the results of the CMS, the Permittee must implement one or more of the Corrective Measures authorized by Ohio EPA. Ohio EPA will authorize one or more of the Corrective Measures in the CMS, and will notify the Permittee in writing of the decision. The Corrective Measure selected for implementation must: (1) be protective of human health and the environment; (2) attain media clean-up standards; (3) control the source(s) of releases so as to reduce or eliminate further releases of hazardous waste(s) (including hazardous constituent[s]); and, (4) comply with all applicable standards for management of wastes.

If two or more of the Corrective Measures studied meet the threshold criteria set out above, Ohio EPA will authorize the Corrective Measures Implementation by considering remedy selection factors including: (1) long-term reliability and effectiveness; (2) the degree to which the Corrective Measure will reduce the toxicity, mobility or volume of contamination; (3) the Corrective Measure's short-term effectiveness; (4) the Corrective Measure's implementability; and (5) the relative cost associated with the alternative.

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(a) Permit Modification

Ohio EPA will initiate a permit modification, as provided by OAC Rule 3745-50-51 to require implementation of the corrective measure(s) authorized.

The Permittee must not implement the corrective measure until the permit is modified pursuant to OAC Rule 3745-50-51.

(b) Financial Assurance
OAC Rule 3745-54-101

Within forty five (45) days after receiving approval of the CMI, the Permittee must provide financial assurance in the amount necessary to implement the corrective measure(s) as required by OAC Rule 3745-54-101 (B) and (C).

E.10 Newly Identified WMUs or Releases
OAC Rule 3745-54-101

(a) General Information

The Permittee must submit to Ohio EPA, within 30 days of discovery, the following information regarding any new WMU identified at the Facility by Ohio EPA or the Permittee:

(i) The location of the unit on the site topographic map;

(ii) Designation of the type of unit;

(iii) General dimensions and structural description (supply any available drawings);

(iv) When the unit was operated; and

(v) Specification of all waste(s) that have been managed at the unit.

(b) Release Information

The Permittee must submit to Ohio EPA, within 30 days of discovery, all available information pertaining to any release of hazardous waste(s) or hazardous constituent(s) from any new or existing WMU.

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E.11 Corrective Action for Newly Identified WMUs and Releases
OAC Rule 3745-54-101

If Ohio EPA determines that a RFI is required for newly identified WMUs, the Permittee must submit a written RCRA Facility Investigation Work Plan to Ohio EPA upon a time frame established in written notification by Ohio EPA in accordance with Permit Condition E.5. This determination will be made based on the information submitted in accordance with Permit Condition E.10.

Further investigations or corrective measures will be established by Ohio EPA.

The Permittee must make such a submittal in accordance with time frames established by Ohio EPA.

E.12 Documents Requiring Professional Engineer Stamp
ORC 4733.01

Preparation of the following Corrective Action documents constitutes the "practice of engineering" as defined by ORC 4733.01:

Final Interim Measures Report

Corrective Measures Final Design

Corrective Measures Construction Completion Report

Corrective Measures Attainment of Ground Water Performance Standards Report

Corrective Measures Completion of Work Report

As such, the Permittee must ensure that these documents, as submitted to Ohio EPA, are stamped by a Professional Engineer licensed to practice in the State of Ohio.

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E.13 Schedule of Compliance

The Permittee must provide Ohio EPA with the following items according to the schedule below:

Facility Submission	Due Date
Document revisions	60 days from date of receipt of deficiencies from Ohio EPA.
Newly identified WMU	30 days after discovery.
RFI Implementation	60 days after approval of the RFI Work Plan.
RFI Report(s)	60 days after completion of each phase of the RFI.
CMS Work Plan	60 days from the notification of the requirement to conduct the CMS.
CMS Implementation	30 days after Ohio EPA written approval.
Corrective Measures Report	30 days after completion of the CMS.
Progress Reports	Monthly, by the 12th of each month. If the 12th falls on a non-work day, the report will be submitted on the first work day after the 12th.

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MODULE F - CONTAINMENT BUILDING STORAGE & TREATMENT

F. MODULE HIGHLIGHTS

The Stabilization/Containment Building is a steel frame constructed building with a footprint of approximately 1.2 acres in addition to four containment pads on the exterior of the building. Each area of the building is generally dedicated to a specific treatment and/or handling operation and includes the micro/macroencapsulation area, sort floor area, debris crusher area, waste mixing area with the excavator bridge for mixing, container storage areas, unloading areas, scale area and campaign bin area where larger volumes are mixed. The interior floor's wearing surface is constructed of multiple floating concrete slabs with grout filling the joints between the slabs. The building interior is divided into 10 drainage areas, each of which slope to concrete catch basins (sumps) constructed in the floor. The four exterior containment pads have similar catch basins. The building was designed and constructed with underlying double liner systems beneath the floating slab with liquid collection, removal and leak detection components (collectively called the Containment Building Sump System or CBS). There are 14 separate areas within the Stabilization/Containment Building, each with their own CBS. Riser pipes extend from these sumps to covered concrete sump boxes built into the floor. These sumps are used to determine if any liquid is present on the liners and to remove any liquid that may be on the primary or secondary liners. The CBS components include a primary liner which is a continuous 80 mil High Density Polyethylene (HDPE) liner covered with a minimum of six inches of pea gravel. Beneath the primary liner is the secondary liner which is also a continuous 80 mil HDPE liner topped with a drainage geonet. Underlying the secondary liner is a layer of recompacted clay that is a minimum of 3 feet thick.

Wastes are brought into the Stabilization/Containment Building via trucks, drums, containers, intermodal containers, gondola rail cars and rail hopper cars. Waste characteristics vary from fine, dusty wastes to soils and debris. For fugitive dust management, the building is equipped with Air Pollution Control Systems managing the building's ventilation as well as for dump hoods used for pneumatic unloading and truck unloading. Additionally, the mixing stations are equipped with a water spray system to minimize the generation of particulate emissions during the mixing process.

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F.1 Stabilization/Containment Building Storage/ Quantity Limitation

(a) The Permittee is authorized to store 515 cubic yards of hazardous waste at any given time in the permitted Stabilization/Containment Building as detailed in the following table:

Storage Area	Description/Location	Capacity (Cubic Yards)	Type of Containment	Description of Waste
A1	Debris Sort Floor Storage and Treatment Area	270	Modified Tank	All Permitted Waste Codes
A2	Campaign Bin Storage and Treatment Area	230	Modified Tank	All Permitted Waste Codes
F	Oversized Material Storage Area Adjacent to Crusher	15	Modified Tank	All Permitted Waste Codes

The Permittee must store hazardous waste in the manner described in Section D of the permit application. The Permittee must clearly mark each area/bin which contains hazardous waste restricted from land disposal under OAC Chapter 270 to identify its contents and the date each period of accumulation begins.

(b) Permit Conditions F.1(a) and F.2 shall not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34.

However, when accumulating waste within the permitted Stabilization/Containment Building, in accordance with OAC Rule 3745-52-34, the Permittee must not, for the total amount of hazardous waste stored and accumulated, exceed the maximum Stabilization/Containment Building inventory established under this permit condition.

F.2 Limitations on Treatment of Hazardous Waste in Stabilization/ Containment Building

(a) The Permittee is authorized to treat hazardous waste in the Stabilization/ Containment Building at a rate not to exceed 150 tons

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per hour or no more than 250,000 tons of incoming and on-site generated waste can be processed by the Permittee in any calendar year. The Permittee must treat hazardous waste in the Stabilization/Containment Building in the manner described in Section D of the permit application.

(b) The Permittee must, prior to accepting any waste stream for stabilization or encapsulation treatment or prior to submitting a WPR form to Ohio EPA for approval, conduct a pre-acceptance analysis for each such waste stream and submit an analytical/treatment report along with the WPR package. This report shall include the following data:

(i) waste code designation and analytical data showing its constituents, quantitatively;

(ii) the exact type, sequence, and/or combination of treatment methods designated for said waste;

(iii) bench scale test data that shows the composition of treatment reagents, waste material, or filler materials added to the waste, contact time, operating parameters to be monitored, safety precautions and measures, final product analysis; and,

(iv) Toxicity Characteristics Leachate Procedure test results, land disposal restrictions, and any other applicable regulatory requirements that the waste must meet prior to its final disposal.

(c) WPR approval by Ohio EPA will not relieve the Permittee of the Permittee's responsibility to treat, store, or dispose of hazardous waste in an environmentally safe manner.

(d) The Permittee must prepare, document, and maintain on site data showing that dilution did not occur during treatment. This data must be compiled for each grab and hold stabilization batch process as required by Permit Condition B.3(h)(iii)(b).

(e) The Permittee may use the stabilization/solidification additives referenced in Appendix C.13 or Volume 7 of the permit application, or may use such other reagents as are deemed necessary to improve a waste handling characteristic or to achieve compliance

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with a treatment standard specified in OAC Rule 3745-270-40. The Permittee must request authorization from Ohio EPA (via a Class 1 prior approval modification) for any additions made to this list and submit any relevant technical and analytical data that supports the effectiveness of the treatment additive.

F.3 Waste Identification

The Permittee is authorized to store and treat in the Stabilization/Containment Building only the EPA hazardous waste numbers specified in Part A of the permit application.

F.4 Design and Construction Standards
OAC Rule 3745-205-101 (A) & (B)

The constructed Stabilization/Containment Building is described in Section D of the permit application and must comply with the following design and construction standards:

(a) The Stabilization/Containment Building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(b) The floor and containment walls of the Stabilization/Containment Building, including the secondary containment system, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the Stabilization/Containment Building; and to prevent failure due to pressure gradients, settlement, compression, or uplift; physical contact with the wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the Stabilization/Containment Building and contact of such equipment with the containment walls.

(c) The Stabilization/Containment Building must be designed so that it has sufficient structural strength to prevent collapse or other failure.

(d) All surfaces to be in contact with hazardous waste must be chemically compatible with those wastes.

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(e) If appropriate to the nature of the waste management operation to take place in the Stabilization/Containment Building, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

(i) They provide an effective barrier against fugitive dust emissions.

(ii) The Stabilization/Containment Building is designed and operated in a manner that assures that waste will not penetrate these openings when they are closed.

(f) Incompatible hazardous waste or treatment reagents must not be placed in the Stabilization/Containment Building or its secondary containment system if they could cause the Stabilization/Containment Building or secondary containment system to leak, corrode, or otherwise fail.

(g) A Stabilization/Containment Building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the Stabilization/Containment Building during the operating life of the Stabilization/Containment Building and appropriate for the physical and chemical characteristics of the waste to be managed.

(h) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier.

(i) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the Stabilization/Containment Building.

(i) The primary barrier must be sloped to drain liquids to the associated collection system.

(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.

(j) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is

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capable of detection failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(k) The leak detection system must be constructed with a bottom slope of one percent or more and be constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed or a synthetic or geonet drainage materials with transmissivity of 3×10^{-5} m^2/sec or more.

(l) If treatment is to be conducted in the Stabilization/Containment Building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(m) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the Stabilization/Containment Building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the Stabilization/Containment Building.

(n) In addition to the requirements for secondary containment systems in Permit Conditions F.4 (j), (k), and (m), the Stabilization/Containment Building must meet the requirements of paragraphs (B), (c)(1), and (c)(2) of OAC Rule 3745-55-93 to be considered an acceptable secondary containment system for a tank.

(o) The Permittee must operate and maintain a run-on control system capable of preventing flow into the Stabilization/Containment Building and onto the outside containment pads onto the active portion of the Stabilization/ Containment Building during peak discharge from a 25 year-24 hour storm.

(p) The Permittee must maintain a baghouse or an equivalent device on all Air Pollution Control Systems managing the Stabilization/Containment Building ventilation and on the dump hoods used for pneumatic unloading and truck unloading. Performance test results must be available on-site in the operating record. Performance evaluations must be conducted on a yearly

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basis during the operating life of the Stabilization/Containment Building. Vents and ducts must be inspected not less than annually to determine if an accumulation has occurred along the ducts. Records of these inspections must be maintained on-site for the life of the facility.

F.5 Operating Standards
OAC Rule 3745-205-101(C)

The constructed Stabilization/Containment Building described in Section D of the permit application must comply with the following operating standards:

(a) The Permittee must use controls and practices to ensure containment of the hazardous waste within the Stabilization/Containment Building; and, at a minimum:

(i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier.

(ii) Maintain the level of the stored/treated hazardous waste within the containment walls of the Stabilization/Containment Building so that the height of any containment wall is not exceeded.

(iii) Take measures to prevent the tracking of hazardous waste out of the building by personnel or by equipment used in handling the waste, including trucks off-loading waste.

(a) Within fifteen minutes after a hazardous waste transportation vehicle leaves the Stabilization/Containment Building area, the Permittee must inspect the Stabilization/Containment Building entrance apron used by the vehicle and remove all tracked or fallen waste at the time of the inspection. By the end of each day's use, the containment pads around the Stabilization/Containment building must be inspected and all tracked or fallen waste must be removed at the time of inspection.

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(b) The Permittee must maintain a log that records the inspection of and any actions taken at the entrance aprons and containment pads of the Stabilization/Containment Building.

(iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the Stabilization/Containment Building and during the unloading of pneumatic tank trucks.

(v) The Stabilization/Containment Building doors must remain closed at any doorway adjacent to waste handling activities and while waste is being processed, except when vehicles, personnel, or equipment are entering or exiting the building. The truck unloading side of the building must be equipped with a split curtain to control wind dispersal for unloading hoods and sort floors. The split curtain must be inspected periodically and be repaired or replaced as needed.

(vi) To the extent practicable, a conditioner/wetter must be applied as necessary to minimize dust from treatment reagents, wastes, or stabilized materials while they are being used in the treatment processes in the Stabilization/Containment Building to control fugitive dust emissions.

(b) The Permittee must maintain a certification by a qualified registered professional engineer that the Stabilization/Containment Building design meets the requirements of paragraphs (A) to (C)(4) of OAC Rule 3745-205-101.

(c) Throughout the active life of the Stabilization/Containment Building, the Permittee must repair, promptly upon detection, any condition that could lead to or has caused a release of hazardous waste in accordance with OAC Rule 3745-205-101(C)(3)(a) through (c).

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(d) The Permittee is authorized to operate two pneumatic truck unloading stations at the Stabilization/ Containment Building. The design and operation requirements of the stations are detailed in Section D of the permit application. The Permittee must not unload more than 24 pneumatic tank trucks per day. The number of unloadings on pneumatic tank trucks permitted per day may be reduced if the Permittee is unable to prevent the release of hazardous waste from the Stabilization/Containment Building including tracking of hazardous waste out of the building by personnel, pneumatic tank trucks or other waste handling equipment.

(e) The Permittee must maintain and operate the primary liquid collection and removal system to collect and remove liquids that may be potentially contaminated from the Stabilization/Containment Building. The primary leachate collection system must be operated in a manner that allows the system to function without clogging through the scheduled closure of the Stabilization/Containment Building. The Permittee must maintain and operate the secondary liquid collection and detection system installed immediately below the primary liner for the purpose of monitoring and removing any liquid that could pass through the concrete and the primary HDPE liner.

(f) The Permittee must expeditiously remove all accumulated liquids and solid material from collection and holding sumps located in the Stabilization/Containment Building and on the containment pads outside of the Stabilization/Containment Building. Each sump must be inspected on a daily basis (operating day) and after storms (2 inches per 8 hours) for the purpose of monitoring the accumulated water level. All water removed from the run-off collection system is to be treated as potentially contaminated.

(i) The Permittee must remove material from the sumps when such material has reached the bottom of the grate. All sumps within the Stabilization/Containment Building must be cleaned out once each calendar month regardless of the amount of material that has accumulated.

(ii) The Permittee must record in the facility operating record, the dates when material is removed from the sumps; and, must also note on daily inspection forms any amount of

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material that is observed within the sumps at the time of the inspection and if removal of material from the sump(s) is necessary.

(iii) In the event that liquids freeze within a sump, the Permittee must note in the daily inspection log that accumulated materials are in the sump and the time of discovery. The Permittee must remove the accumulated material by allowing the frozen liquid to thaw or by other means that will not compromise the integrity of the sump. The Permittee must note in the daily inspection log the date and time the material was removed.

(g) When the presence of an aqueous phase is an appropriate active ingredient in the stabilization process, the amount of liquid used in the stabilization process must be based upon treatment formulations derived from bench scale results and/or from existing documented information from similar treatment of similar wastes under similar conditions. Liquids used in the process must be legitimate stabilization ingredients.

(h) D001 ignitable liquid waste must not be managed in the treatment process unless such waste can be effectively treated (i.e., remove the characteristic of ignitability by either destroying or removing the organic constituents that gave the waste its ignitable characteristic; as used herein, destruction is not achieved through dilution) as required by the land disposal restrictions of OAC Chapter 3745-270.

(i) A central carbon adsorption or equivalent system must be maintained to control organic emissions from the Stabilization/Containment Building.

(j) Incompatible hazardous wastes or treatment reagents must not be placed in the Stabilization/Containment Building or its secondary containment system, if they could cause the Stabilization/Containment Building or secondary containment system to leak, corrode, or otherwise fail.

(k) After each shipment of hazardous waste is received and has been placed into storage, the Permittee must label the hazardous waste storage area with the following information:

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(i) waste type and description;

(ii) date waste was received into the storage area;

(iii) Permittee load number and/or container sequence number (for on-site generated waste);

(iv) generator name; and,

(v) Waste Stream Identification Number (WSID).

F.6 Leak Detection for the Stabilization/Containment Building.

(a) The Permittee must inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the Stabilization/Containment Building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste in accordance with OAC Rule 3745-205-101.

(b) The Permittee must follow the approved Response Action Plan (RAP) containing procedures for the detection, mitigation, notification and reporting of leakage into the leak detection system as found in Appendix D.22 of the permit application.

F.7 Inspection Schedules and Procedures
OAC Rules 3745-54-15 and 3745-54-73

The Permittee must inspect the Stabilization/Containment Building in accordance with the inspection schedule contained in Section F of the permit application, Permit Condition B.5(g) and in accordance with OAC Rule 3745-54-15. The inspection schedule must be written such that the Permittee must inspect and record in the facility's operating record data gathered from monitoring equipment, leak detection equipment, the Stabilization/Containment Building, and the area immediately surrounding the Stabilization/Containment Building at least once every seven days in order to detect signs of releases of hazardous waste. The Permittee must note the results of these inspections in the inspection log along with any remedial action taken.

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F.8 Recordkeeping
OAC Rule 3745-54-73

(a) The Permittee must comply with all record keeping requirements of OAC Rule 3745-54-73 as part of the facility operating record.

(b) After each shipment of hazardous waste is received and has been placed into storage, the Permittee must log into a storage area daily report the following information:

(i) quantity of waste in the storage area;

(ii) waste type and description;

(iii) date waste was received into the storage area;

(iv) waste location (by storage area);

(v) date waste was removed from the storage area;

(vi) Permittee load number and/or container sequence number;

(vii) generator name; and,

(viii) Waste Stream Identification Number (WSID).

F.9 Special Provisions for Ignitable or Reactive Waste
OAC Rules 3745-54-17

(a) The Permittee must not store or treat ignitable or reactive waste except in accordance with OAC Rule 3745-54-17.

(b) The Permittee must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and must follow the storage or treatment procedures specified in Section D of the permit application.

F.10 Encapsulation Technology

The Permittee is authorized to treat certain waste within the Stabilization/Containment Building using encapsulation technology as detailed in Section D-5i through D-5l of the permit application.

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(a) Waste that is primarily debris (based upon visual inspection) must be treated via encapsulation technology to meet Land Disposal Restrictions found in OAC Chapter 3745-270 prior to disposal into the active cell. "Debris," and/or "non-debris," is herein defined as set forth in OAC Rule 3745-270-45. The Permittee must not perform encapsulation treatment on the following types of waste:

(i) waste that the Permittee knows, or reasonably should know, has been deliberately mixed with non-debris waste by the generator in order to avoid numerical or technical treatment standards under OAC Chapter 3745-270; and,

(ii) any hazardous waste that is not authorized in Section A of the permit application.

(b) The Permittee must use only materials compatible with the waste being encapsulated as an encapsulating agent. The Permittee must not use materials that will cause an adverse reaction with or otherwise degrade significantly when exposed to the waste.

(c) The Permittee must perform a quality control check on all waste that undergoes encapsulation treatment. The quality control inspection is detailed as follows:

(i) Microencapsulation:

(a) The Permittee must inspect a minimum number of microencapsulation boxes based on the cube root of the number of boxes present or ten percent of the boxes, whichever is greater, as determined by ESOI load number or WSID (waste stream identification number). Finished cardboard boxes used as containers must be inspected by opening the cardboard from near top to near bottom, directly exposing an area at least six inches wide and allowing more of the surface area to be viewed by pulling the cardboard away from the setup encapsulant.

(b) All waste that is microencapsulated in bulk must be sufficiently coated with the treatment reagents. This

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will be evaluated through visual inspection. All microencapsulated waste must be allowed to cure.

(ii) Macroencapsulation:

(a) The Permittee must only use storage and handling pallets (or a combination of pallets) that are larger than the containers used in the macroencapsulation process.

(b) The Permittee must use structural supports, when appropriate, around the macroencapsulation container to prevent rupture of the LDPE liner. The macroencapsulation containers may not be overfilled to cause rupture of the LDPE liner.

(c) Each container used in the macroencapsulation process must be inspected for damage to the liner. Containers with damaged liners must be reprocessed.

F.11 Closure and Post-Closure
OAC Rules 3745-55-10 through 3745-55-20, and 3745-205-102

At closure of the Stabilization/Containment Building, the Permittee must remove or decontaminate all hazardous waste and hazardous waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, in accordance with the procedures in the closure plan set forth in Section I of the permit application.

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MODULE G - WATERLINE TRENCH MONITORING PROGRAM

G. MODULE HIGHLIGHTS

Two City of Toledo low pressure raw water transmission lines transect the Permittee's property. These water transmission lines carry untreated water from Lake Erie to the City of Toledo Collins Park Water Treatment Plant located at 600 Collins Park, Toledo, Ohio, 43605. The Permittee installed monitoring and dewatering trenches on either side of these water transmission lines.

One of the two transmission lines is a 78 inch, bituminous-coated, steel pipe constructed in 1939 to 1940. This pipe was installed at a depth ranging from 11 to 21 feet below ground surface (bgs). Backfill consisted of "selected clay" that was compacted to 24 inches above the top of the pipe. In 1967, the second line, a 60 inch steel encased prestressed concrete pipe, was installed to the north and parallel to the original line at a depth ranging from 9 to 18 feet bgs. In 1973 to 1974, the first line was improved by adding a ½ inch thick cement grout lining to the inner-core of the pipe. The interior of the first line was inspected in 1984 and determined to be in good condition.

For the purpose of protecting the two water lines, the Permittee installed monitoring and dewatering trenches between the waste cells and the water lines. These trenches were installed in various phases from 1984 to 1987 in conjunction with the facility's waste disposal area development. Each trench was installed at least one foot below the depth of the adjacent water line. The trenches are approximately 2.5 feet wide and are sloped at one percent grade with collection sumps at 200 foot intervals. According to the 1986 Hazardous Waste Groundwater Task Force Evaluation of Fondessy Enterprises, Inc. Oregon, Ohio, the trenches along the north side of the waterlines were backfilled with gravel to a level of two feet bgs and then sealed with recompacted blue clay as a means to prevent storm water infiltration. To enhance the collection of liquids in the trenches, a four inch slotted polyethylene flex hose is located at the bottom of each trench.

Trenches 1, 2 and 6 have been historically clean and are designated monitoring trenches by the Permittee. Trench 1 is located between Cell H and the water lines and discharges to the Cell H surface water retention pond; Trench 2 is located between Cell I and the water lines and discharges to the Cell I surface water retention pond; and, Trench 6 is

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located between Cell M and the water lines and discharges to the Cell M storm water retention pond. The surface water from the retention ponds is discharged off-site through National Pollutant Discharge Elimination System (NPDES) outfalls. Trenches 3, 4 and 5 are known to be contaminated and are designated by the Permittee as dewatering trenches. Trench 3 is located between the Central Sanitary Landfill and the water lines; Trench 4 is located between Building C / Old Oil Pond and the water lines; and, Trench 5 is located between Cell G and the water lines. The liquids removed from dewatering Trenches 3, 4 and 5 are pumped to an on-site vacuum truck and handled as F039 (leachate). Trench locations can be found on drawing number F20D2A in Volume 8 of the permit application.

The purpose of this permit module is to detect if the liquids accumulated in monitoring trenches 1, 2 and 6 become contaminated and to ensure that contaminated liquids accumulated in trenches 3, 4 and 5 are removed and managed properly. Corrective action for the contaminated trenches is discussed in Module E of this permit.

G.1 Low Pressure Raw Water Line Security Agreement

(a) The Permittee must continue to be a party to the Waterline Security Agreement with the City of Toledo as found in Appendix B.2 of the permit application.

(b) The Permittee must remove and dispose liquids in accordance with the Waterline Security Agreement and applicable regulations.

(c) The Permittee must allow access to the waterline easement to the City of Toledo, Division of Environmental Services, to conduct appropriate testing and monitoring to determine compliance with the Waterline Security Agreement during all normal and customary facility operating hours.

G.2 Monitoring Trench Constituents List

Within 90 days of permit issuance, the Permittee must submit a Class 1 permit modification, in accordance with OAC Rule 3745-50-51, to include in the permit application, a listing of the various analytical methods utilized to evaluate the constituents listed in Table G-1 below.

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Table G-1: Monitoring Constituent List

Constituent	Limit
Volatile Organic Compounds	PQL
Semivolatile Organic Compounds	PQL
Lead (Dissolved)	0.01 mg/L
Cadmium (Dissolved)	0.005 mg/L
Chromium (Dissolved)	0.05 mg/L

G.3 Trench Monitoring and Data Evaluation

For the purposes of this module, monitoring trenches are defined as those trenches which have not exceeded limits for any of the constituents listed in Table G-1 above. Likewise, dewatering trenches are defined as those trenches which have historically exhibited constituent levels at or above the limits defined in Table G-1.

(a) For monitoring trenches, the Permittee must withdraw a sample from each monitoring trench on a semi-annual basis and analyze the samples for the constituents listed in Table G-1.

(i) If the analysis shows any constituent in Table G-1 at or above the Limit specified for that constituent, then the Permittee must either designate the trench as a dewatering trench or withdraw a confirmation sample from the affected trench within 30 days of receipt of the original analytical results by the Permittee.

(ii) If the analysis and the confirmation analysis shows any constituent in Table G-1 at or above the Limit specified for that constituent, then the Permittee must designate the monitoring trench as a dewatering trench.

(b) For dewatering trenches, the Permittee must keep liquid levels in the trenches below the bottom of the adjacent waterline. The liquid level in each dewatering trench must be monitored in accordance

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with the inspection schedule found in Permit Condition G.4. In addition, the Permittee must notify the director in writing within 14 days of determining that a monitoring trench must be designated a dewatering trench.

G.4 Inspection Schedules and Procedures

(a) The Permittee must inspect the following at least one time per week:

(i) the waterline easement boundaries for potential degradation and/or damage to the cover systems of nearby waste management units;

(ii) the monitoring trench cap for erosion and/or damage;

(iii) the collection sumps for damage;

(iv) the City of Toledo easement for evidence of leakage from the waterlines; and,

(v) the presence of liquids in the trenches.

(b) In the event that degradation and/or damage to the cover systems of nearby waste management units along the waterline easement boundaries, erosion or damage to the monitoring trench cap, or damage to the collection sumps, is observed during the weekly inspections required by Permit Condition G.4(a)(i) through G.4(a)(iii), the Permittee must notify Ohio EPA within 24 hours, document the problem on the inspection form and make necessary repairs within 30 days.

(c) In the event that evidence of leakage from the waterlines is observed during the weekly inspections required by Permit Condition G.4(a)(iv), the Permittee must contact the City of Toledo and Ohio EPA within 24 hours.

G.5 Recordkeeping and Reporting

(a) For monitoring trenches, the Permittee must submit a monitoring trench report (due 30 days after receipt of all analytical data and

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data evaluation required by Permit Condition G.3) to Ohio EPA and City of Toledo. The report must contain the analytical results from the constituents listed in Table G-1.

(b) For all monitoring and dewatering trenches, the Permittee must submit to Ohio EPA, on a monthly basis, a report detailing the amount of liquids removed from each trench and dates of dewatering.

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MODULE H - RESERVED

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MODULE I - POST-CLOSURE CARE

I. POST-CLOSURE CARE

The Permittee maintains and monitors four hazardous waste landfill units that are currently undergoing post-closure care, Cells F, G, H and I; and, one landfill unit that is currently active, Cell M. Landfill Cells F, G, H and I were closed under Resource Conservation and Recovery Act (RCRA) Closure Plans specific to those units. Cell M will begin post-closure after completion of closure as described in Section I of the permit application. This module addresses the requirements for post-closure care, monitoring and maintenance in accordance with OAC Rules 3745-55-17 through 3745-55-20 and the landfill specific post-closure requirements of OAC Rule 3745-57-10. The Permittee's post-closure activities include the following:

- maintenance of facility security systems;
- ground water monitoring;
- leachate collection and removal;
- maintain and monitor leak detection system;
- maintenance of landfill covers;
- maintenance of support facilities (e.g., access roadways and storm water management systems); and,
- periodic inspections of the unit.

These ongoing post-closure activities are designed to maintain the integrity of the final cover, liners and other components of the containment system, and the function of the units' monitoring systems. Each unit currently undergoing post-closure care is described below.

Cell F

Cell F is a permitted RCRA hazardous waste landfill unit located in the northwest corner of the Permittee's facility. Cell F was operated from 1980 to 1983 for the disposal of both non-hazardous industrial and RCRA hazardous waste. Cell F encompasses an area measuring approximately three acres. Wastes disposed within the cell were bulk solids and containers, and were primarily treated sludges, landfarm soil, ignitable solids, refinery solids, paint solids and contaminated soils, along with non-hazardous industrial waste solids. Cell F has an estimated waste thickness of 50 to 55 feet, with a total disposed amount of waste of approximately 135,300 cy.

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Cell F was constructed by excavating into in-situ clay soils and installing a leachate collection and removal system. The bottom soils consist of approximately 25 feet of in-situ grey silty clay till located on top of dolomite. The side wall is also comprised of in-situ soils consisting of brown and gray silty lacustrine clay, blue and gray silty clay till, and gray silty clay till. As part of the cell construction, a soil berm consisting of the same in-situ soils as the cell sidewalls was left in place to separate Cell F and the Northern Sanitary Landfill located east of Cell F. The leachate collection and removal system consists of a network of pipes leading to a manhole for removal. The pipes leading to the leachate removal manhole are six inch diameter perforated PVC pipes. The leachate removal manhole is a 36-inch diameter reinforced concrete pipe.

Cell F was closed in accordance with the approved closure plan. The final cap design consisted of at least three feet of upper till compacted clay covered by one foot of vegetative cover. As constructed, the intermediate clay cover and final clay cap resulted in a landfill cover over five feet thick. According to the *Documentation of Cell F Closure Construction*, dated March 18, 1987, the closure construction began June 10, 1986 and was competed January 5, 1987.

The final cap of Cell F was constructed to accommodate a utility easement that traverses the footprint of the cell. Specifically, the Toledo Edison Company holds a 100 foot wide easement that traverses the central portion of Cell F. In order to comply with clearance requirements within the National Electric Safety Code, the final grading plan was designed to provide an approximate clearance of 20 feet between the lowest transmission wire and highest ground surface directly beneath it. This necessitated lowering the final cap elevation within this easement relative to the surrounding crown portion of the cap. The minimum five foot landfill thickness cover was maintained within this easement area. Ohio EPA approved the final closure of Cell F on June 17, 1987.

Documentation relevant to Cell F is provided in Appendix F of the *Description of Current Conditions*, revised March 23, 2001.

<u>Cell G</u>

Cell G is a permitted RCRA hazardous waste landfill unit located in the southwest corner of the Permittee's facility, north of York Street. Cell G was operated from 1990 to 1994 for the disposal of RCRA hazardous wastes and non-hazardous industrial wastes. The majority of the waste in

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Cell G consists of electroplating sludges. Other waste types include wastewater treatment sludges, paint wastes, incinerator ashes and RCRA contaminated soils. Cell G covers approximately 7.1 acres with an average waste thickness of 89 feet. The total disposed volume of waste within Cell G is approximately 479,000 cubic yards.

Cell G was constructed with below grade double geomembrane liners, a primary leachate collection system and a secondary leak detection system. The design included a double composite liner system along its entire bottom and a composite secondary liner system with a single primary liner system along its below grade side slopes. The double composite liner system included a primary system (two feet of recompacted natural clay and 80 mil geomembrane liner on the base of the cell and 80 mil geomembrane liner along the sideslopes) overlain on an independent secondary system (three feet of natural clay and 60 mil geomembrane liner).

Incorporated into Cell G's construction is a below grade sheet piling wall system along the eastern, southern and southwestern limits of the Cell G area. This system acts as a physical barrier and provides additional structural support between the adjacent sanitary landfill (Central Sanitary Landfill) and the City of Toledo raw waterlines. This system was constructed between March 1988 and March 1989.

Cell G was closed in accordance with the approved closure plan. The final cover system design included a two foot recompacted clay layer, a 40 mil geomembrane liner, a geocomposite drainage layer, and four feet of protective cover/vegetative soil. Cell G closure was implemented in two phases. The first phase involved the construction of perimeter above grade dikes that were constructed during above grade waste placement activities. The construction of the dikes provided for the installation of the cap, which consisted of a recompacted clay layer and an additional 1.5 feet sacrificial clay layer. The second and final phase of the closure as initiated upon receipt of the final waste on June 9, 1994. Ohio EPA approved the final closure of Cell G on July 13, 1995.

Documentation relevant to Cell G is provided in Appendix G of the *Description of Current Conditions*, revised March 23, 2001.

<u>Cells H and I</u>
Cell H is a permitted RCRA landfill unit located in the northeast portion of the Permittee's facility. Cell H was operated from December 1983 to May

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1987 for the disposal of industrial and hazardous wastes. Cell H covers approximately nine acres and has an average waste thickness of 90 feet. The total approximate amount of waste disposed in Cell H is 737,639 tons. Cell H was constructed with a four foot recompacted clay liner, a single 60 mil geomembrane liner and a leachate collection system. Documentation relevant to Cell H is provided in Appendix H of the *Description of Current Conditions*, revised March 23, 2001.

Cell I is a permitted RCRA landfill unit located in the east-central portion of the Permittee's facility between Cell H and York Street. Cell I was operated as a commercial landfill for the disposal of industrial and hazardous wastes from March 1987 to November 1990. The total disposed volume of waste within Cell I was approximately 677,200 cubic yards. Cell I covers approximately 8 acres and has an average waste thickness of approximately 88 feet.

Cell I was constructed with double geomembrane liners, a primary leachate collection system and a secondary leak detection system. The design included a double composite liner system along its entire bottom and composite secondary liner system with a single primary liner system along its below grade side slopes. The double composite liner system included a primary system (two feet of recompacted clay and 80 mil synthetic liner on the base of the cell and 80 mil synthetic liner along the sideslopes) overlain on an independent secondary system (three feet of recompacted clay and 60 mil synthetic liner). Documentation relevant to Cell I is provided in Appendix I of the *Description of Current Conditions*, revised March 23, 2001.

Cells H and I were constructed in the area of a former land treatment unit (referred to as the York Street Landfarm) that covered an area of approximately 8.9 acres. The York Street Landfarm treatment unit was used for the treatment of various biodegradable wastes during the period of August 1980 to November 1984 and approximately 13,200 tons of primarily oil bearing waste were treated at this unit during its operational life. The treatment zone for the York Street Landfarm was surrounded with a recompacted earthen dike for run-on/run-off water control. Originally, the containment dike surrounded the entire land treatment unit; however, as part of the facility's long-term plans to construct two landfill cells at this location, the dike was reconstructed to divide the unit into two separate areas: Areas A and B. Area A covered approximately 4.9 acres and was located entirely within the footprint of existing Cell H. Area B covered approximately 4.0 acres and was located entirely within the

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footprint of Cell I. Surface soils located between Areas A and B were removed and placed into the land treatment unit's treatment zone, and clean soils were backfilled into this area. The land treatment unit was then converted into hazardous waste Cells H and I.

Cells H and I were closed in accordance with the approved closure plans. The final phase of closure for both units included clay cap surface preparation and the installation of the 40 mil geomembrane liner, geocomposite drainage layer, cover soils, vegetation and a drainage system. Ohio EPA approved the final closure of both Cells H an I on April 2, 1993.

Cell M
Cell M is currently active. Operational requirements for this landfill can be found in Module J of this permit.

I.1 Unit Identification

The Permittee must provide post-closure care for the following hazardous waste management units, subject to the terms and conditions of this permit:

Type of Waste Unit	Unit No. or Other Designation	Approximate Maximum Waste Inventory	Description of Wastes Contained	Year Post-closure began
Landfill	Cell F	135,185 yd^3	Treated sludges, landfarm soil, ignitable solids, refinery solids, paint solids, contaminated soils, and non-hazardous industrial waste solids.	06/17/1987
Landfill	Cell G	479,200 yd^3	Electroplating sludges, waste-water treatment sludges, paint wastes, incinerator ashes, and RCRA contaminated soils.	07/13/1995
Landfill	Cell H	737,639 tons	Industrial and hazardous wastes.	04/02/1993
Landfill	Cell I	677,200 yd^3	Industrial and hazardous wastes.	04/02/1993
Landfill	Cell M	see Module J	see Module J	active

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I.2 Post-closure Procedures and Use of Property
OAC Rule 3745-55-17

(a) The Permittee must conduct post-closure care for each hazardous waste management unit listed in Permit Condition I.1 above, to begin after completion of closure of the unit and continue for 30 years after that date. The 30-year post-closure care period may be shortened upon application and demonstration approved by Ohio EPA that the reduced period is sufficient to protect human health and the environment. The 30-year post-closure care period may be extended if the Director finds that the extended period is necessary to protect human health and the environment.

(b) The Permittee must maintain and monitor the ground water monitoring system and comply with all other applicable requirements of OAC Rules 3745-54-90 through 3745-54-100 during the post-closure period. Ground water must be monitored in accordance with Module K, Integrated Ground Water Monitoring Program.

(c) RESERVED

(d) The Permittee must comply with the requirements for landfills, as follows:

(i) 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, or other events.

(ii) Continue to operate the leachate collection and removal system until leachate is no longer detected. All existing leachate systems must be maintained in good repair. They must be inspected monthly and repaired if required. Leachate found within the systems must be removed for shipment to an approved treatment, storage, or disposal facility. Pertinent information, including origin of leachates, quantities, and analytical results, must be recorded within the facility's post-closure operations record;

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(iii) Prevent run-on and run-off from eroding or otherwise damaging the final cover:

(a) Erosion control structures must be maintained during post-closure care. Erosion damage must be repaired and corrected.

(b) The facility must be inspected monthly or after every major rainfall (two or more inches per eight hour period). Erosion or pooling of water must be corrected.

(c) Erosion controls (slopes/vegetation) must be monitored and maintained in accordance with the facility's approved post-closure care plan.

(iv) Protect and maintain surveyed benchmarks used in complying with the surveying and recordkeeping requirements of OAC Rule 3745-57-09.

(v) General Facility Care

(a) Grass cutting must be performed as needed, but at least annually. Damaged or dead vegetation must be removed and replaced with equivalent vegetation. No trees, shrubs, or other deep rooted plants must be allowed to grow on closed waste units. Areas damaged by erosion must be repaired and re-vegetated.

The Permittee must remove trees, shrubs or other deep-rooted plants in the fall quarter of each year. The Permittee must notify an Ohio EPA on-site inspector verbally, by letter, or by telephone at least 48 hours prior to beginning the vegetation removal efforts. On-site staff at their discretion, can exempt the Permittee from the 48 hour notification requirement. Any damage to the closed waste unit cover system caused by the growth or removal of trees, shrubs or other deep-rooted plants must be promptly repaired.

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(b) Buildings located on the site must be maintained in good repair. Compliance with all permits, fire codes, etc., must be maintained.

(c) All existing roadways must be maintained in good repair. No new roadways shall be constructed over any final cover areas unless approved by Ohio EPA. The roadways must be maintained as necessary during inclement weather to provide access to all areas.

(d) All existing drainage ditches must be maintained and kept free of debris. No ditches must be constructed on closed hazardous waste areas. Drainage ditches must not be altered from the facility's approved pattern unless approved by Ohio EPA.

(e) All utilities must be maintained and operational. Electrically operated security and monitoring devices must be provided with internal back-up power to allow operation in the event of a main power outage. No underground utility construction must occur in areas used previously for hazardous waste disposal.

(e) The Permittee must comply with all security requirements, as specified in the permit application and as follows:

(i) All fencing must be maintained in a manner that prevents unknowing entrance to the facility. Fencing must be inspected monthly and repaired or replaced as necessary.

(ii) All warning signs must be maintained or replaced to meet the readability requirements described in the OAC Rule 3745-54-14(C). Signs must be inspected monthly.

(iii) All site entrance/exit gates must be maintained in operable condition and securely locked when not monitored by a gate keeper. Gate locks must be inspected weekly.

(iv) The Permittee must inspect the ground water monitoring wells on a weekly basis. All ground water monitoring wells

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must have locking caps and remain locked except when being sampled.

(v) The Permittee must inspect the facility on a weekly basis for signs of unauthorized entry. If during the post-closure care period there are any signs of unauthorized entry, the Permittee must immediately notify the Director.

(f) The Permittee must not allow any use of the units designated in Permit Condition I.1 which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the post-closure care period.

(g) The Permittee must implement the post-closure plan. All post-closure care activities must be conducted in accordance with the provisions of the post-closure plan.

I.3 Inspections
OAC Rule 3745-55-18(B)

The Permittee must inspect the components, structures, and equipment at the facility in accordance with the inspection schedule found in the post-closure plan.

I.4 Notices and Certification
OAC Rules 3745-55-19 and 3745-55-20

(a) No later than 60 days after certification of closure of each hazardous waste disposal unit, the Permittee must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the director, a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the Permittee must identify the type, location, and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

(b) Within 60 days after certification of closure of the first and the last hazardous waste disposal unit, the Permittee must:

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(i) Record, in accordance with Ohio law, a notation on the deed to the facility property that will in perpetuity notify any potential purchaser of the property that:

(a) The land has been used to manage hazardous wastes;

(b) Its use is restricted under OAC Rules 3745-55-10 thru 3745-55-20; and

(c) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility have been filed with the director and the local zoning authority, or the authority with jurisdiction over local land use.

(ii) Submit a certification to the director, signed by the Permittee, that he has recorded the notation specified in Permit Condition I.4(b)(i), including a copy of the document in which the notation has been placed.

(c) If the Permittee wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, then he must request a modification to this permit in accordance with the applicable requirements in OAC Chapter 3745-50. The Permittee must demonstrate that the removal of hazardous wastes will satisfy the criteria of OAC Rule 3745-55-17(c).

By removing hazardous waste, the Permittee may become a generator of hazardous waste and must manage it in accordance with all applicable hazardous waste requirements.

If the Permittee is granted a permit modification or otherwise granted approval to conduct such removal activities, the Permittee may request that the director approve either:

(i) The removal of the notation on the deed to the facility property or other instrument normally examined during title search or,

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(ii) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

(d) No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee must submit to the director, by registered mail, a certification that the post-closure care period 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 the Permittee and an independent, qualified, registered professional engineer. Documentation supporting the independent, qualified, registered professional engineer's certification must be furnished to the director upon request until the director releases the Permittee from the financial assurance requirements for post-closure care under OAC Rule 3745-55-45.

I.5 Financial Assurance
OAC Rule 3745-55-45

(a) The Permittee must maintain financial assurance during the post-closure period and comply with all applicable requirements of OAC Rules 3745-55-40 thru 3745-55-51.

(b) The Permittee must demonstrate to the Director that the value of the financial assurance mechanism exceeds the remaining cost of post-closure care, in order for the Director to approve a release of funds.

(c) The Permittee must submit itemized bills to the Director when requesting reimbursement for post-closure care.

I.6 Post-closure Permit Modifications
OAC Rule 3745-55-18(D)

The Permittee must request a permit modification to authorize a change in the approved post-closure plan. This request must be in accordance with applicable requirements of OAC Rules 3745-50-40 through 3745-50-62, and must include a copy of the proposed amended post-closure plan for approval by the Director. The Permittee must 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

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final closure, or other events occur during the active life of the facility that affect the approved post-closure plan. The Permittee must 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.

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MODULE J - CELL M LANDFILL

J. MODULE HIGHLIGHTS

The Permittee maintains and operates one active landfill known as Cell M and shown on Drawing PRMO-T04 in Volume 8 of the permit application. The scope of this permit module involves regulatory requirements for Cell M. Cell M, located south of York Street, was excavated and developed in a total of 3 phases. Cell M is approximately 25 acres at ground surface and extends approximately 45 feet below the original ground surface and is permitted for a maximum height of 120 feet (714 msl) above the ground surface. Cell M was constructed with a multi-component bottom liner system that consists of a minimum of 9 feet of recompacted, engineered clay and multiple synthetic liners which is discussed in more detail below. The components of the liner and leachate collection systems are described in the Construction Quality Assurance report for Cell M, Phases 1, 2 and 3 Below Grade Liner Construction. As-built details of Cell M excavation and the secondary clay liner are provided within the Cell M, Phases 1, 2 and 3 As-Built Drawings. The total capacity for Cell M is approximately 3.247 million cubic yards.

The bottom of Cell M was designed and constructed with a double liner system that includes the following components (listed from bottom to top):

- A secondary composite liner consisting of a minimum of 9 feet (and a maximum of 21 feet) of recompacted clay layer covered by a 60-mil High Density Polyethylene (HDPE) geomembrane liner.

- A leak detection and collection system above the secondary liner consisting of a geotextile covering a 12-inch aggregate drainage layer covering another geotextile and a HDPE geonet.

- A primary composite liner consisting of 2 feet of recompacted clay support layer covered by an 80-mil HDPE geomembrane liner.

- A leachate collection system (LCS) above the primary liner consisting of a geotextile, a 12-inch aggregate drainage layer, another geotextile and an HDPE geonet.

The internal sideslopes of Cell M were designed and constructed with a double liner system that includes the following:

- A secondary liner consisting of a minimum of 6.5 feet of recompacted clay

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layer covered by a 60-mil HDPE geomembrane liner.

- A leak detection and collection system above the secondary liner consisting of a geonet.
- A primary liner consisting of an 80-mil HDPE geomembrane liner.
- A LCS above the primary liner consisting of a geotextile over a HDPE geomembrane geonet.

Liquids collected in the Cell M liner system drain to collection sumps. Liquids are pumped from the sumps through sideslope riser pipes and transported to the Leachate Storage Tank Building by tanker truck or a double walled force main pipe.

Drawing numbers PRMO-L06, L07, L08, L10, and L13 in the permit application provide details associated with the Cell M liner, final cover (or cap) design, and leachate tanker truck loading areas.

Site Staging Area O is located within the active area(s) of Cell M. Area O has a total staging capacity of 1,200 cubic yards. Also, some treatment processes (e.g., solidification, stabilization) could occur within the landfill as described in Section D of the permit application.

The units located north of York Street, Cells F, G, H, and I, are closed and currently undergoing post closure care subject to the terms and conditions found in Module I of this permit. These cells are also shown on Drawing PRMO-T04 in Volume 8 of the permit application.

J.1 Landfill Waste Disposal Limitations

(a) Subject to the conditions of this permit, the Permittee must dispose of only the hazardous wastes identified in Part A of the permit application and such other wastes as authorized by the Ohio hazardous waste rules or approved by Ohio EPA.

(b) The Permittee must adhere to the Waste Product Review (WPR) approval process described in Section C of the permit application. The Permittee must not accept waste that has not received approval by Ohio EPA pursuant to the WPR process.

(c) Placement of wastes in Cell M must be no less than 100 feet from the respective center lines of York Street and Otter Creek Road, 70 feet

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from the facility boundary, and 40 feet from the City of Toledo's water lines.

(d) The following wastes are prohibited from disposal in landfill cells:

(i) any wastes containing free liquids as determined in accordance with OAC Rule 3745-57-14, except lab packs;

(ii) water reactive or pyrophoric wastes, except as specified in OAC Rule 3745-57-12;

(iii) Class 1 explosives, as defined in 49 CFR 173.50(b)(1) and (2);

(iv) shock sensitive wastes;

(v) polychlorinated biphenyls (PCBs) regulated by the Toxic Substances Control Act (TSCA) (greater than or equal to 50 ppm);

(vi) radioactive wastes regulated by the Nuclear Regulatory Commission;

(vii) infectious wastes;

(viii) any waste in gaseous form;

(ix) any waste that under standard temperature and pressure, is capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard, as specified in OAC Rules 3745-51-21(B) and 3745-57-12(A);

(x) any lab pack container that is found either to be incorrectly packaged, incorrectly sealed, leaking, or which does not otherwise meet the requirements specified in OAC Rule 3745-57-16;

(xi) any ignitable, reactive, or incompatible wastes unless those wastes are containerized and physically separated by inert material to protect them from conditions that may cause them to ignite or react; and,

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(xii) wastes that will, at the concentration accepted:

(a) adversely affect the permeability of the clay liner(s);

(b) produce leachate that is incompatible with the synthetic liner(s) and leachate collection system piping; and,

(c) generate gases that adversely affect the permeability of the clay cap.

(xiii) any wastes exhibiting a flashpoint below 100 degrees Fahrenheit as detailed in Sections C-2(f)(11) through C-2(f)(13) of the permit application.

(xiv) any waste that will not achieve after 4 weeks of placement and maintain thereafter a minimum shear strength of 2000 pounds per square foot. Complaince with this permit condition is to be determined in accordance with condition J.2(s) of this permit.

(e) The Permittee must comply with all Landfill Disposal Restrictions as specified in OAC Chapter 3745-270.

J.2 Landfill Design and Installation
OAC Rule 3745-57-03

(a) The Permittee must construct Cell M in accordance with the plans and drawings contained in Section D of the permit application, terms and conditions of this permit, and the Ohio hazardous waste rules. Any design or construction plans for Cell M must be approved by Ohio EPA.

(b) The earthfills, where used, must consist of a well-graded soil mixture. The material must be free of debris, plant materials (except when earthfill is being used for vegetative cover material), rock fragments greater than six inches in maximum dimension, large clods, frozen material, or other foreign materials. In-situ density tests are required to verify the desired degree of compaction. Any construction utilizing earthfill must be in accordance with Appendix D.6 of the permit application. The material must be brought to the proper water content.

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(c) The Permittee must perform leak testing and certification of the entire length of each seam in each synthetic liner, including caps, sump welds, and connections, by vacuum box, unless an equivalent or more rigorous test method is used.

(d) For each day of synthetic liner seaming operations, the Permittee must subject at least one of the three trial seam samples to tensiometer testing for tensile strength and peel strength prior to making field seams during that day. A random field seam sample must also be subject to said testing each day of the liner seaming operation.

(e) The Permittee must require the liner installer to cap or otherwise repair synthetic liner seams for which representative samples failed destructive shear and/or peel tests.

(f) The outer perimeter of all liners and liner systems must be well protected and well marked through all stages of landfill cell construction, partial closure, and final closure.

(g) The cap for Cell M must consist of a three foot thick uppermost soil layer composed of a six inch layer of soil that supports vegetation and a 30-inch layer of cover soil, underlain consecutively by a geotextile fabric, a synthetic drainage net, a 40-mil HDPE membrane liner, a two foot layer of recompacted clay, and geotextile fabric at the top between the perimeter clay dikes. After the placement of the two-foot recompacted clay, and prior to the placement of the remainder of the cap, the Permittee must submit certification to Ohio EPA that the recompacted clay liner has not been exposed to freeze/thaw conditions and/or any other weather conditions which have impaired its desired permeability.

(h) In the event of the failure of any component of the landfill system or construction techniques to perform as required by the approved design plans, Ohio hazardous waste rules, and the terms and conditions of this permit, the Permittee must notify Ohio EPA, in writing, as soon as practicable or within seven days, whichever is less.

(i) During construction of the phases of Cell M, the Permittee excavated to the top of the lower till. All materials located at the contact of the upper and lower tills, including sands, were completely removed over the entire base of Cell M.

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(j) RESERVED

(k) The lowest point of the three-foot recompacted clay secondary liner, including any portion of the secondary clay liner below the leachate collection sumps, must be maintained no less than six feet above the top of the lower till. This installation must ensure a minimum of nine feet of recompacted clay at the base of Cell M when measured from the top of the lower till.

(l) All below grade sideslopes of Cell M must have a minimum of 3.5 feet of recompacted clay installed between the in-situ material and the outermost portion of the three foot recompacted clay secondary liner, measured perpendicularly from the sidewall. This installation must ensure a minimum of 6.5 feet of recompacted clay on all Cell M side slopes, measured perpendicularly from the sidewall. The constructed sideslopes must extend from the ground surface to the top of the lower till and must be effectively attached or otherwise "keyed" into both the clay liner base and the lower till. In the areas of Phase 3 where a 10% slope area has been designated, the side slope must extend to the 10% slope area and be effectively attached or otherwise "keyed" into the 10% slope area.

(m) The 10% slope area of Phase 3 must have a minimum of 3.5 feet of recompacted clay installed between the in-situ materials and the outermost portion of the three-foot recompacted clay secondary liner, measured perpendicularly from the slope. This installation must ensure a minimum of 6.5 feet of recompacted clay for the 10% slope area, measured perpendicularly from the slope. The 10% slope area must also include a 12 inch granular layer and a geonet for the primary leachate collection system and structurally enhanced tri-planar geonet installed as a secondary collection system.

(n) The final cover (cap) and the bottom clay liners for Cell M must have permeabilities no greater than that of the in-situ upper till (represented as 3.6×10^{-8} cm/sec as determined using the slug tests in upper till and utilizing the Bouwer and Rice method).

(o) The above-grade design and construction of Cell M must be as follows:

(i) the maximum above-grade side slope must not exceed $33^1/_3$ %;

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(ii) the slope of the final cover top surface must range from 3% to 5%; and,

(iii) the maximum above-grade elevation must not exceed 120 feet (i.e., 714 feet above mean sea level) including the final cap thickness.

(iv) all above grade side slopes must be designed to achieve a minimum deep-seated static slope stability factor of safety of 1.5 and a corresponding seismic factor of safety of 1.0.

(p) The landfill must maintain both a leak detection/collection system and primary leachate collection and removal system in accordance with the plans contained in the permit application, Ohio hazardous waste rules, and the terms and conditions of this permit.

(q) For each phase of landfill construction, the Permittee must have an independent, qualified, registered professional engineer monitor and examine the construction and certify, in accordance with OAC Rule 3745-50-42(D)(1), that construction is in accordance with the document, statements, designs, and plans contained in the permit application and the terms and conditions of this permit. Said engineer must be selected and paid for by the Permittee and approved by Ohio EPA.

(r) Within 30 days of the effective date of this permit and prior to beginning construction activities related to the vertical expansion modification, the Permittee shall submit revised plan drawings, cross sections and related details in accordance with the compound slope specifications as outlined in their February 10, 2005 revised slope stability calculations. The revised drawings and design specification must be consistent with the slope factor of safety requirements specified in Permit Condition J.2 (o)(iv) above. Within this same period the Permittee must also submit revised application pages for all other sections of the vertical expansion modification (received by Ohio EPA on January 22, 2004) that are affected by the February 10, 2005 submission (e.g., settlement calculations, surface drainage, etc.).

The information required by this condition must be submitted as a Class 1 permit modification requiring director's approval (Class 1A) in accordance with OAC Rule 3745-50-51.

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(s) To ensure that the global slope stability safety factor for static condition remains above 1.5, the minimum shear strength of the waste material disposed in cell M, after curing, must not be less than 2000 psf (pounds per square foot). In order to verify that the required minimal waste in-situ shear strength of 2000 psf is being maintained, the Permittee shall conduct the following test at the regular intervals as specified below and beginning within two (2) weeks from the effective date of this permit:

(i) Once every calendar month, the Permittee shall obtain at least one undisturbed sample of waste material following its disposal and compaction (if any). The Permittee must notify Ohio EPA on-site staff at least 3 days prior to the sampling event. The sample(s), which need to be representative of common waste placement practices, shall be taken from within the placed lift, following applicable ASTM D1587 "Practice for Thin-walled Tube Sampling of Soils for Geotechnical Purposes" requirements. The sample must be transported following standards outlined in ASTM D 4220 "Practices for Preserving and Transporting Soil Samples". In addition, the sample shall be let to cure for a minimum of one (1) week, but not more than four (4) weeks. The sample shall be sent to an independent (not associated with the Permittee) laboratory to undergo an unconfined compressive strength test in strict accordance with the testing procedure standard ASTM D 2166-00. The shear strength shall be reported by the laboratory in accordance with the paragraph 3.2.2 of this test as ½ the compressive stress at failure. In lieu of off-site testing, Permittee may conduct the unconfined compressive strength test on site in strict accordance with the testing procedure standard ASTM D 2166-00 using qualified personnel.

The name(s) of person(s) who performed sampling, location (slab XYZ coordinates), sampling depth, equipment used, date of sampling, sampled waste designation, complete sample description (a photograph, diameter, recovered length, discontinuities, visual observations, any encountered problems, cure time, etc.) and laboratory test results must be all recorded in a dedicated document titled "Cell M - In-situ Waste Shear Strength Testing Report". This report must be submitted to the Ohio EPA every 6 months from the effective

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date of this permit, within 15 days from the last day of the respective 6 month sampling period.

(ii) In case that the reported shear strength is less than 2000 psf, the Permittee must, within 60 days of the original sampling date, re-sample the area by taking a minimum of three (3) core samples within the same slab. (As an alternative, the Permittee may take these additional samples at the same time when the required monthly sample is taken, and keep in case they are needed.) If ASTM D 2166-00 tests show that the median shear strength of the additional samples is equal or above 2000 psf, the Permittee can continue with operations in this area. If the median shear strength of the additional samples is below 2000 psf, the Permittee must discontinue waste disposal in this area and submit within 90 days from the original sample date a plan to Ohio EPA detailing the measures to be taken in order to return in compliance with the 2000 psf shear strength requirement.

(iii) If twelve (12) consecutive tests show that the 2000 psf shear strength requirement has been met at all times, the testing frequency may be lowered to one (1) test every two (2) months. In case of any subsequent failure requiring submittal of a plan of action per condition J.2.(s)(ii), the Permittee shall return to one (1) test per month until the results of twelve consecutive tests show that 2000 psf shear strength standard has been met; thereafter, a reduced frequency of testing as indicated above may be implemented.

(iv) Within 90 days of permit issuance, the Permittee must submit a Class 1 permit modification, in accordance with OAC Rule 3745-50-51, to revise applicable portions of the application to be consistent with the requirements outlined in this condition.

J.3. <u>Containment and Detection of Releases</u>

(a) The Permittee must monitor, operate, and maintain the primary leachate collection system (PLCS) and secondary leachate collection system (SLCS), as applicable, of Cell M.

The level of leachate accumulation on the primary synthetic liner, excluding the sumps, must not exceed the height of one foot, as required by OAC Rule 3745-57-03(A)(2), except for temporary

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excursions in Cell M following a precipitation event. To minimize the potential for excursions, the Permittee must activate primary system pumps whenever the leachate levels on the liner exceed 10 inches.

The Permittee must return to a leachate level of less than 10 inches in Cell M after the precipitation event that triggered the temporary excursion by operating the pumps in the affected landfill collection sumps 24 hours per day, 7 days per week.

(b) The Permittee must monitor the quality of leachate pumped from the PLCS, where applicable, of each cell in accordance with Permit Condition J.7(e).

(c) The Permittee must monitor the SLCS for the presence of liquid. If commercially available level monitoring equipment (e.g., transducers) cannot be inserted into specific sub-cell sumps because of space constraints within a SLCS riser pipe, then the Permittee must monitor for the presence of liquid on a semi-weekly (Sunday through Saturday) basis by activation of the sub-cell pump until pump cavitation occurs or liquid flow ceases. If activation of the pump produces no liquids, then the Permittee will verify that the pump is operable before concluding that no liquid is present in the sub-cell sump. If the pump is found to be inoperable, then the Permittee must repair or replace it as appropriate to restore pumping capability.

J.4 Operating Requirements

The Permittee must conduct landfill operations according to the approved practices and procedures set forth in Section D of the permit application and the terms and conditions of this permit including, but not limited to, the following:

(a) trucks carrying wastes into a cell must be swept or brushed to remove all visible particles of waste from the tires and exterior of the bed prior to leaving the facility. Truck tires and frame that come into contact with hazardous waste must be decontaminated prior to leaving the facility;

(b) unloading of wastes into Cell M must be halted and mitigative steps must commence to minimize wind dispersal of waste whenever wind speed is high enough to blow wastes out of the cell;

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(c) the Permittee is authorized to conduct treatment within Cell M in accordance with the procedures outlined in Section D-4 and D-5 of the permit application. Authorized treatment of waste within the cell will be prohibited when there is a potential to generate fugitive dusts that could migrate beyond the landfill's perimeter; and,

(d) the Permittee must continue to monitor the temperature of incoming bulk waste loads. If such temperature is less than 20 degrees Fahrenheit below the waste's flashpoint, the load must either be rejected or not disposed in the landfill until the temperature reaches the desired range.

J.5 Inspection Schedules and Procedures
OAC Rule 3745-57-05

(a) The Permittee must inspect Cell M in accordance with the Inspection Schedule found in Section F of the permit application and must complete the items in Permit Conditions J.5(b) and J.5(c) as part of those inspections:

(b) Inspections during construction of landfill components, including but not limited to subsoil foundations, clay and synthetic cover and liners, leachate collection and leachate detection systems must be conducted in accordance with OAC Rules 3745-54-15, 3745-54-31, 3745-57-01, quality assurance and the inspection plans contained in the permit application, and the terms and conditions of this permit.

(c) The Permittee must inspect the following components of the landfill weekly and after storm events (2 inches or more of rain in 8 hours):

(i) deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(ii) proper functioning of wind dispersal control system; and

(iii) the presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(d) The Permittee must document compliance with Permit Condition J.5 in the operating record of the facility.

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(e) The Permittee must record the amount of liquids removed from each leak detection sump at least once a week during the active life and closure period of the landfill. After final cover (cap), the amount of liquids removed from leak detection sumps must be recorded at least monthly. Additional conditions of reporting requirements listed in OAC 3745-57-05(c)(2) are incorporated by reference.

J.6 Response to Releases
OAC Rule 3745-57-03

(a) The Permittee must follow the Response Action Plan (RAP) found in Volume 3H, Appendix D.32 of the permit application, which contains procedures for detecting, mitigating, notifying, and reporting leakage into the leak detection system present between the synthetic liners.

(b) Upon the discovery of leakage or an imminent hazard of leakage, the Permittee must notify the director in accordance with the RAP and must expeditiously repair the damage to the liner system. Upon discovery of a tear or puncture in the liner system, the Permittee must notify the Ohio EPA on-site inspector and must expeditiously repair the damage. Within seven days after the completion of the repairs, the Permittee must complete and file a "Liner System Repair Report", and "Certification of Liner System Report", into the facility's operating record, both of which must be certified in accordance with OAC Rule 3745-50-42(D)(1).

(c) If the cell or sub-cell is active and the Permittee cannot implement the RAP, then the Permittee must cease waste disposal activity in this cell or sub cell.

J.7 Recordkeeping and Reporting
OAC Rule 3745-57-09

(a) The Permittee must maintain the following items in the facility's operating record in accordance with OAC Rule 3745-57-09:

(i) on a map, the location and dimensions, including depth, of each landfill cell with respect to permanently surveyed benchmarks;

(ii) the contents of each landfill area and each waste's approximate location within the landfill; and,

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(iii) the waste's identification cross referenced to the manifest document number.

(b) For each operating day, the Permittee must record in the facility's operating record:

(i) measurements of wind direction;

(ii) average and maximum wind speed; and,

(iii) precipitation accumulated over the previous 24 hour period and its form (e.g., rain, snow, hail, etc.).

(c) The Permittee must record leachate level readings in the Cell M subcells prior to the removal of leachate, and after completion of leachate removal activities at the end of the working day. Leachate level readings used to determine compliance with Permit Condition J.3(a)(i) or OAC Rule 3745-57-03(A)(2) must be taken and recorded at the end of the working day.

(d) The Permittee must report to Ohio EPA on a monthly basis, the following information related to the primary and secondary leachate collection and removal systems of Cell M:

(i) daily on-site rainfall measurements;

(ii) as applicable, any daily operational problems associated with the systems (e.g., pumps inoperable, transducers inoperable, etc.);

(iii) daily leachate level readings before and after any leachate removal from the systems; and,

(iv) daily volumes of leachate removed from the systems.

(e) The Permittee must provide to Ohio EPA analytical results of leachate from each sub-cell annually. Parameters to be tested are listed in Table K-1 (Constituents with Specified Comparison Standards), K-2 (Constituents with Comparison Standards) and K-3 (Ground Water Quality Parameters) of this permit.

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J.8 Closure and Post-Closure Care
OAC Rules 3745-57-10, 3745-55-17, 3745-55-19, and 3745-55-20

(a) At closure of the landfill, the Permittee must follow the procedures in the closure plan in Section I of the permit application.

(b) After final closure, the Permittee must comply with all post-closure requirements contained in OAC Rules 3745-55-17, 3745-55-20, and Section I of the permit application; and, must provide maps, charts, and other required records to the director and the local land authorities as required by OAC Rule 3745-55-19(B)(1)(c).

J.9 Special Provisions for Ignitable or Reactive Wastes
OAC Rule 3745-57-12

The Permittee must not place ignitable or reactive waste in the landfill, unless the procedures specified in the permit application are followed, the waste and landfill meet all applicable requirements of OAC Chapter 3745-270, or compliance with OAC Rule 3745-54-17(B) is achieved. The Permittee must document compliance with this condition and place it in the operating record.

J.10 Special Provisions for Incompatible Wastes
OAC Rule 3745-57-13

The Permittee must not place incompatible wastes, or incompatible wastes and materials, in the same landfill unless the procedures specified in the permit application and OAC Rule 3745-54-17(B) are followed. The Permittee must document compliance with this condition and place that documentation into the operating record.

J.11 Special Requirements for Containers
OAC Rule 3745-57-15

The Permittee must meet the requirements of OAC Rule 3745-57-15, Section D of the permit application, and the following requirements prior to the placement of containers of hazardous waste in the landfill:

(a) The Permittee must not dispose of containers in the landfill that are less than 90 percent full and hold free liquids unless the following conditions are present:

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(i) the container is very small, such as an ampule;

(ii) the container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or,

(iii) the container is a lab pack as defined in OAC Rule 3745-57-16.

(b) For containers less than 90 percent full, the Permittee must either crush the container, or add other material so that the container is at least 90 percent full prior to landfill disposal.

(c) The Permittee must cover and enclose containers placed in the landfill with compatible bulk wastes, stabilized material, or intermediate cover. This material must be placed to fill void spaces between the containers.

J.12 Special Requirements for Disposal of Small Containers (Lab Packs)
OAC Rule 3745-57-16

The Permittee must meet the requirements of OAC Rule 3745-57-16 and Section D of the permit application prior to the placement of small containers of hazardous waste in overpacked drums (lab packs) in a landfill.

J.13 Special Requirements for F020, F021, F022, F023, F026 and F027
OAC Rule 3745-57-17

EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027 must not be placed in a landfill unless the Permittee operates the landfill in accordance with a management plan for these wastes that is approved by the director pursuant to the standards set forth in OAC Rule 3745-57-18, and in accordance with all other applicable requirements of OAC Chapter 3745-57.

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MODULE K - INTEGRATED GROUND WATER MONITORING PROGRAM

K. MODULE HIGHLIGHTS

The Permittee maintains a network of ground water monitoring wells around the site for the purpose of detecting releases of hazardous constituents from the active (Cell M) and closed disposal units. The monitoring network wells are screened at various depths - from the upper till zone down to bedrock and at various zones in between. The ground water monitoring network does not monitor RCRA units and pre-RCRA areas of concern (AOCs) separately. Generally, with the exception of Millard Road Cell and Cell M, the monitoring network does not include wells between each RCRA unit and AOC. Due to the proximity of these units/AOCs to one another the facility is monitored as a whole with a network of wells circumscribing all the units and AOCs.

During the October 1997 sampling event, laboratory analysis confirmed the presence of hazardous constituents in four wells located along the northern boundary of the facility. Although none of these affected wells monitor the primary source of ground water in the area (the bedrock aquifer), the Permittee's permit requires the facility to move into a more advanced stage of ground water protection when constituent detection has been confirmed.

This permit module institutes an Integrated Ground Water Monitoring Program (IGWMP). The IGWMP is designed to coordinate the requirements of three programs: 1) on-going detection monitoring for detection of new contaminant releases; 2) compliance monitoring for detection of concentrations exceeding ground water protection standards; and, 3) RCRA Corrective Action requirements. Specific RCRA Corrective Action requirements are found in Module E of this permit.

The IGWMP applies to the entire facility including all regulated and corrective action units listed in Module E. Under an integrated program and in accordance with OAC Rule 3745-54-101, the well system, sampling scheme (including parameters monitored, appropriate sampling and analytical methods, and frequency of monitoring), evaluation procedures, record keeping, reporting, and any necessary corrective action are coordinated across the site.

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The Permittee's "S" wells monitor the contact between the lacustrine clay and the shallow (a.k.a. "upper") till, the "D" wells monitor the contact between the shallow till and the deep till (a.k.a. "lower till" or "hardpan") and sand lenses at that contact. Due to a ruling May 8, 1991, by the Hazardous Waste Facility Board, these shallow zones are monitored by "S" and "D" wells as an early leak detection system. The Permittee's "R" wells monitor the bedrock, which is considered to be the uppermost aquifer. The data quality requirements are the same regardless of the geologic unit being monitored, such that each well's samples are collected, analyzed, and validated as if the well were at the compliance point. Contamination detected in each zone is evaluated in accordance with the exposures associated with each zone defined in the ACL model in Appendix E.11 of the permit application.

Wells that do not indicate a potential or known release from the facility are considered to be "unaffected" and are monitored essentially as if they are in detection monitoring according to OAC Rule 3745-54-98. Wells with elevated constituent concentrations, defined by Permit Condition K.2(b)(i) and (ii), K.6(e)(iii), and K.6(f) and (g), are considered to be "affected" and are monitored essentially as if they are in compliance monitoring according to OAC Rule 3745-54-99. A more detailed description of the relationship between these two types of wells can be found in Section E of the permit application.

Each well is monitored for at least the constituents listed in Tables K-1, K-2, and K-3 in Permit Condition K.2(b). In addition, the following monitoring wells are monitored for the following additional constituents:

- Affected wells are monitored annually for constituents in the Appendix to OAC Rule 3745-54-98. Affected wells are defined in the module highlights and Permit Condition K.6(d).

- Affected wells, previously-affected wells, and adjacent wells (wells in the same horizon and wells in the same cluster monitoring the zone above and/or below the affected well) of either an affected or previously-affected well are monitored semi-annually for elevated constituents or previously-elevated constituents. Elevated constituents are defined in Permit Conditions K.2(b), K.6(c), K.6(d), K.6(e)(iii), and K.6(g).

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Data are compared to comparison standards defined in Permit Condition K.2(b)(i) and (ii) and K.6(e)(iii) and subject to confirmation sampling in Permit Conditions K.6(c) and K.6(e)(ii), as a means to determine whether ground water quality has been adversely impacted. In addition to the constituents listed in Tables K-1 and K-2, affected wells and adjacent wells (vertical and horizontal) are also monitored for any other elevated constituents identified as part of Appendix to OAC Rule 3745-54-98 sampling and Permit Conditions K.6(e), (f), and (g).

The data for elevated constituents are evaluated using the Permittee's ACL Model. The model uses standard risk assessment practices that are consistent with site-wide ground water risk assessment requirements, which will be necessary as part of corrective action under OAC Rule 3745-54-101. The details of the ACL model are presented in Appendix E.11 of the permit application.

K.1 Well Location, Installation, and Construction
OAC Rules 3745-54-97 through 3745-54-101

The Permittee must maintain a ground water monitoring system to comply with the requirements specified below:

(a) The Permittee must maintain ground water monitoring wells in conformance with the list in Attachment K-1 at the locations shown on the map in Attachment K-2 and wells installed in accordance with the following:

(i) As referred to in the July 2002 Operations and Maintenance Report, in order to determine the full vertical extent of the plumes that exist at MR-3D west of the Millard Road Unit and SW-3D east of the North Sanitary Landfill, the Permittee must install two additional bedrock ground water monitoring wells, one located at well nest MR-3D and MR-3S and the other located at well nest SW-3D and SW-3S. The wells must be installed in accordance with the requirements of Permit Conditions K.1(c) and (e). The installation of the wells must occur during Phase II of the RCRA Facility Investigation (RFI).

(ii) The ground water monitoring system must yield samples in up-gradient wells that represent the quality of the background ground water unaffected by leakage from the

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facility; and, in down-gradient wells, yield samples that represent the quality of water passing the point of compliance. The number and location of monitoring wells must be sufficient to identify and define all logical release pathways from the facility based on site-specific hydrogeologic characterization.

(b) The Permittee must monitor and maintain the monitoring wells identified in Permit Conditions K.1(a) in accordance with Appendix E.9 of the permit application, and with Permit Condition I.1.(c)(ii)(b), including replacement of wells, if needed.

(c) Abandonment and replacement of an existing network well that has been damaged or rendered inoperable, without change to location, design, or depth of the well, will require a Class 1 permit modification in accordance with OAC Rule 3745-50-51. Addition of a monitoring location or removal of a monitoring location from the network will require a Class 2 permit modification in accordance with OAC Rule 3745-50-51. Each of these types of changes must be accompanied by a revised map, Figure 1-1, Site Plan in Section E.9 of the permit application. Within 30 days from the date a well is added to the ground water monitoring well network, the Permittee must submit to the director and Ohio EPA Northwest District Office all well construction details.

(d) All wells replaced or removed in accordance with Permit Condition K.1(c) should be plugged and abandoned in accordance with the *State of Ohio Technical Guidance for Sealing Unused Wells* (State Coordinating Committee on Ground Water, 1996) and *Ohio EPA's Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring (1995)*. Well plugging and abandonment methods, and certification must be submitted to the director within thirty (30) days from the date the wells are removed from the monitoring program.

(e) Whenever any well specified in Permit Condition K.1(a) is replaced for any reason or, if any other well is added to the network (i.e., any well that is not already installed), the Permittee must:

(i) Conduct Appendix to OAC Rule 3745-54-98 sampling at that well within one year from the date of installation;

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(ii) Within one year of the date of installation, collect from that well all ground water samples necessary to develop comparison standards for data from that location for naturally occurring constituents in accordance with Permit Condition K.2(b)(ii)(c);

(iii) Whenever any of the wells specified in Permit Condition K.1(a) are replaced, the Permittee must demonstrate to Ohio EPA that the ground water chemistry at the replacement well meets the criteria in Permit Condition K.1(a) prior to submittal of the next semi-annual data report according to Permit Condition K.7 using means appropriate to the reason for replacement. For all replacement wells, the Permittee must perform a statistical comparison of the water quality at the replacement well with that of the original well.

(iv) Submit a report to Ohio EPA Northwest District Office detailing the results due to Permit Conditions K.1(e)(i), (ii), and (iii). This report is due along with the semi-annual data report for the event immediately following the end of the first year after the installation of the new well. The schedule for semi-annual reports is found in Permit Condition K.7. The Permittee must enter the Appendix to OAC Rule 3745-54-98 sampling and analysis data generated pursuant to Permit Condition K.1(e)(i) into the operating record as described in Permit Condition K.7;

(v) If the comparison of ground water quality pursuant to Permit Condition K.1(e)(iii) shows a statistically significant difference between that of the original well and the replacement well, then the report described in Permit Condition K.1(e)(iv) must include an evaluation as to whether this difference has an effect on the ground water monitoring program, including the assessment of risk for the ground water medium; and,

(vi) If any changes are necessary to the ground water monitoring program as a result of a statistically significant difference in ground water quality between a replacement well and the well it replaced, then the Permittee must submit a request for permit modification in accordance with Permit Condition K.8.

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K.2 Comparison Methods and Ground Water Protection Standard
OAC Rules 3745-54-95 through 3745-54-101

(a) Compliance Point

The Permittee must monitor the wells listed in Attachment K-1 at the locations shown on Attachment K-2 and any other well described in Permit Condition K.1.(a) that meet the intent of compliance point wells per OAC Rule 3745-54-95 for at least the constituents specified in Tables K-1, K-2, and K-3 in Permit Condition K.2(b).

(b) Monitoring Constituents and Comparison Standards

Constituents specified below must be monitored to determine if the constituent concentration is elevated due to the past or current operations of the facility. A constituent must be considered elevated if its concentration is equal to or greater than the comparison standard in paragraphs K.2(b)(i) or K.2(b)(ii) and an alternate source demonstration in accordance with Permit Condition K.6(i) has not been submitted.

(i) Table K-1. Constituents With Specified Comparison Standards

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Constituent	Comparison Standard for Unaffected Wells (µg/L)
acetone	10
benzene	1
chloroform	1
1,1-dichloroethane	1
1,2-dichloroethane	1
1,4-dioxane	50
ethylbenzene	1
methylene chloride	1
methyl ethyl ketone	10
total phenols	5
tetrahydrofuran	2
toluene	1
1,1,1-trichloroethane	1
trichloroethene	1
vinyl chloride	2
total xylenes	1
cadmium (dissolved)	1
chromium (dissolved)	25
dissolved lead	5
cyanide	10

(ii) Table K-2. Constituents With Comparison Standards determined in accordance with the following requirements:

Constituent
Barium (dissolved)
Chloride
Fluoride
Sodium

(a) The Permittee must evaluate the first analytical result of each constituent in Table K-2 at each well in the

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monitoring system and determine, based on historical data at the site, regional data, geologic information, and other relevant information, whether the constituent concentration at each well has been affected by past or current operations at the facility per Permit Condition K.6(c). The determination and justification supporting the determination must be submitted with the first semi-annual final data report.

(b) In the case that the Permittee finds, in accordance with Permit Condition K.2(b)(ii)(a), that the concentration (first analytical result following the approval of this permit modification) of a constituent at a well has been affected by past or current operations at the facility or the director does not concur with the Permittee's findings that it is not elevated, then that constituent at that well will be considered elevated until demonstrated, to the director's satisfaction, that it is not elevated due to past or current operations of the facility.

(c) In the case that the Permittee finds, in accordance with Permit Condition K.2(b)(ii)(a), that the concentration (first analytical result following the approval of this permit modification) of a constituent at a well has not been affected by past or current operations at the facility, then the Permittee must develop comparison standards using intrawell statistical methods in accordance with OAC Rule 3745-54-97 (G), (H) and (I). If there are less than eight historical data points for background, then the Permittee must collect the necessary background data within the first year following the approval of this permit modification. Background must be updated in accordance with the procedures in Permit Condition K.2(b)(ii)(d) until the background data set consists of at least 16 data points.

(d) Background for comparison standards developed in accordance with Permit Condition K.2(b)(ii)(c) and OAC Rule 3745-54-97(G), (H) and (I) may be updated in accordance with the following requirements:

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(i) Background is not updated with less than four new data points at any one time.

(ii) The new background (previous background data plus new background data) must be checked for slowly increasing trends. If a slowly increasing trend is identified, then the background must not be updated unless concurrence from Ohio EPA is received and it has been shown that the Permittee has adequately demonstrated that the increasing trend is not the result of a release from the facility.

(iii) Background updates must be accumulative and not a moving window, unless a trend is identified in the background data. As required in Permit Condition K.2(b)(ii)(d)(ii), the Permittee must adequately demonstrate that the identified trends are not the result of a release from the facility before the background update would be accepted by Ohio EPA.

(iv) When a trend in background data has been identified and it has been adequately demonstrated to not be the result of a release from the facility, then a moving window background should be used. The size of the moving window will be dependent upon the rate of change and the best balance between background size and variance.

(iii) In addition to the constituents in Tables K-1 and K-2, the Permittee must collect and analyze samples from each well for the parameters listed in Table K-3 below. For each of these parameters, except for temperature, for wells defined as affected in the module highlights, the Permittee must also present a graph of analytical results versus time (current analytical result and all applicable historical analytical results) and provide a qualitative discussion correlating any anomalies, trends, or changes in ground water quality to any observed changes in indicator parameter analytical results, in accordance with the schedule in Permit Condition K.7.

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Table K-3. Ground Water Quality Parameters

Parameters
pH
Specific Conductance
Temperature
Turbidity

Note: The parameters in Table K-3 will be measured in the field in accordance with the Permittee's Standard Operating Procedures for the collection of ground water samples as described in Appendix E.9 of the Part B Permit Application. These parameters will be collected to demonstrate that the collected groundwater samples are representative of formation water.

(c) Concentration Limits

In lieu of establishing individual concentration limits for elevated constituents determined in Permit Condition K.2(b)(i) and (ii), K.6(c),(d),(e)(iii),and (g), per OAC Rule 3745-54-94 for the affected wells and their constituents, the Permittee must apply the ACL Model in accordance with Appendix E-11 of the permit application.

(d) Compliance Period

The Permittee must monitor for the constituents identified in Tables K-1, K-2, and K-3 in Permit Condition K.2.(b) during the compliance period described in Permit Condition I.1(c).

K.3 Corrective Action Program
OAC Rules 3745-54-98, 3745-54-99, 3745-54-100 and 3745-54-101

When target risk levels, calculated in accordance with the ACL model in Appendix E-11 of the permit application, are exceeded in the wells listed in K.2(a), the Permittee must:

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(a) In accordance with OAC Rule 3745-54-99 (H), notify the director in writing within seven days of this finding;

(b) Within 90 days of this finding, submit a permit modification to establish and implement a corrective action program that prevents constituents in the ground water from exceeding the risk standards specified in Permit Condition K.6.(l)(i) by removing the hazardous waste constituents or by treating them in place. If corrective action pursuant to OAC Rule 3745-54-101and Permit Module E is already occurring, then any corrective action necessary in response will be coordinated with Permit Module E to the extent practical.

(c) The Permittee may demonstrate that a source other than the facility caused exceedance of the ACL risk goal or that the exceedance is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making such a demonstration, the Permittee must do the following:

(i) Notify the director in writing, within seven days of determining that the facility has reached or exceeded the ACL risk goal of the intent to make a demonstration.

(ii) Include in the Final Report in Permit Condition K.7(c)(v) a report which successfully demonstrates that a source other than the facility caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation.

(iii) Include in the Final Report in Permit Condition K.7(c)(v) an application for a permit modification to make any appropriate changes to the IGWMP at the facility.

(iv) The Permittee may make this demonstration in addition to, or in lieu of submitting a permit modification application to modify the IGWMP for corrective action as required by Permit Condition K.3(b) and OAC Rule 3745-54-99(H)(2). However, the same period of 90 days is required for both a successful "Other Source Demonstration" and the submittal of the permit modification application in accordance with Condition K.3(b). The Permittee is not relieved of the 90 day requirement for a

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permit modification unless the "Other Source Demonstration" is deemed successful by the Agency prior to the 90 day time limit.

(v) Continue to monitor in accordance with the IGWMP at the facility.

K.4 Sampling and Analysis Procedures
OAC Rule 3745-54-97 (D) and (E)

The Permittee must use the following techniques and procedures when obtaining and analyzing samples from the ground water monitoring wells described in Permit Condition K.1:

(a) Ground water elevations must be measured using the techniques described in Appendix E.9 of the permit application.

(b) Each well must be checked for the presence of immiscible layers using an interface probe prior to purging where dissolved concentrations of any site-specific parameter indicates that immiscible layers could be present using the methods described in Appendix E.9 of the permit application.

(c) Sample Collection

(i) Samples must be collected and handled (including well evacuation, sample withdrawal, preservation, containerization, filtration and shipment) to ensure representative samples are obtained using the techniques and equipment described in Appendix E.9 of the permit application.

(ii) The Permittee must collect samples from the wells least likely to exhibit ground water contamination prior to collecting samples from wells with known or suspected ground water contamination.

(d) Field analysis must be performed using instruments, procedures, and forms described in the permit application. Instruments must be calibrated as described in Appendix E.9 of the permit application.

(e) Sampling equipment must be decontaminated using techniques described in Appendix E.9 of the permit application.

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(f) Purge water must be disposed in accordance with procedures described in Appendix E.9 of the permit application.

(g) Laboratory Analysis

(i) Laboratory analytical methods, detection limits and sample holding time must be in accordance with techniques described in Appendix E.9 of the permit application.

(ii) Laboratory selection for sample analysis must not be contingent upon Ohio EPA approval of laboratories.

(h) Quality Assurance/Quality Control

(i) Quality assurance, including field/lab/equipment blanks, duplicate samples and identification of potential interferences, must be in accordance with the methods described in Appendix E.9 of the permit application.

(ii) Field and analytical data must be validated in accordance with the procedures specified in Appendix E.10 of the permit application and reported as specified in Permit Condition K.7.(b)(vi) and (vii).

(iii) Chain of custody procedures, including standardized field tracking reporting forms, and sample labels, must be in accordance with Appendix E.9 of the permit application.

K.5 Ground Water Surface Elevation
OAC Rule 3745-54-97(F)

(a) The Permittee must determine the ground water surface elevation at each well, including chart recorder wells DUG-1, DUG-2, DDG-3, DDG-1, and CR-1, each time ground water is sampled, and submit the information in accordance with Permit Condition K.7(b)(xv).

(b) The Permittee must report, in writing to the Ohio EPA Northwest District Office, the surveyed elevation of the tops of casing, ground surface and/or aprons, and protective casings of any new or replacement monitoring wells specified in Permit Condition K.1(c) within 30 days of the date of installation.

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K.6 Monitoring Program and Data Evaluation
OAC Rules 3745-54-96, 3745-54-98, 3745-54-99 and 3745-54-101

The Permittee must establish and implement an IGWMP as effective as the programs for detection monitoring under OAC Rule 3745-54-98 (ability to detect releases from the facility), compliance monitoring under OAC Rule 3745-54-99 (ability to determine if corrective action is required); and, where necessary, corrective action monitoring under OAC Rules 3745-54-100 and 3745-54-101 (ability to return the ground water to concentrations meeting the acceptable target risk levels using the ACL model). The Permittee must determine ground water quality as follows:

(a) The Permittee must collect, preserve, and analyze samples in accordance with Permit Condition K.4.

(b) The Permittee must semi-annually determine the concentrations of the constituents specified in Tables K-1, K-2, and K-3 in Permit Condition K.2(b) throughout the compliance period and any extensions due to corrective action implementation, to demonstrate conformance with the ground water protection standard. Sampling for this determination must occur in April and October of each year. Analysis results for the samples must be submitted to Ohio EPA Northwest District Office and entered into the operating record in accordance with OAC Rule 3745-54-73 and Permit Condition K.7.

(c) During each semi-annual sampling event, the Permittee must compare the concentrations of the constituents in Permit Condition K.2(b)(i) and (ii) in each well to the comparison standards specified or established in Permit Condition K.2(b)(i) and (ii) as indicated in Section E-6b of the permit application. When the initial sample concentration of a constituent exceeds its associated comparison standard, the Permittee must re-sample the well(s) in question in duplicate. The duplicate samples will be analyzed by two independent laboratories. If the independent laboratory results have a relative percent difference of 30% or less, then the exceedence will be considered confirmed only if the analysis results from both laboratories exceed the associated comparison standard. If the independent laboratory results have a relative percent difference greater than 30%, then the exceedence will be considered confirmed if either result exceeds the associated comparison standard. If the exceedence is confirmed, then the constituent will be considered to be elevated and the well will be considered to be affected. If the

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exceedence is not confirmed, then the constituent will be considered to be not elevated and the well will remain unaffected and in detection monitoring, except as described in Permit Condition K.6(d).

(d) If multiple non-naturally occurring constituents are confirmed in an unaffected well, but at concentrations less than their associated comparison standards, then the Permittee must note this occurrence in the sampling report for that event. Ohio EPA will determine on a case-by-case basis whether such constituents and wells must be considered elevated constituents and affected wells.

(e) Elevated Constituents

(i) Whenever the concentration of a constituent listed in Permit Condition K.2(b)(i) and (ii) is confirmed to exceed its associated comparison standard at an unaffected well, the Permittee must conduct Appendix to OAC Rule 3745-54-98 sampling at all of the monitoring wells in that particular cluster and at adjacent wells screened in the same horizon as described in Section E-8b of the permit application, initiated no later than the next regularly scheduled sampling event.

(ii) The Permittee may confirm the initial results of Appendix to OAC Rule 3745-54-98 sampling conducted pursuant to Permit Condition K.6(e)(i) in the same manner as described in Permit Condition K.6(c); otherwise, any constituents reported initially will be assumed to be present.

(iii) All non-naturally occurring constituents reported to be present during the Appendix to OAC Rule 3745-54-98 sampling in accordance with Permit Condition K.6(e)(i) and (ii) must be considered elevated. For naturally occurring constituents, the Permittee must determine if the constituents are elevated by developing comparison standards in accordance with the requirements of Permit Condition K.2(b)(ii).

(iv) The Permittee must report to the director, in writing and in accordance with the schedule in Permit Condition K.7, the following:

(a) The change in status from unaffected to affected for the wells found to have elevated constituents in accordance with Permit Conditions K.6(c) through (g);

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(b) The concentrations of all constituents reported following the Appendix to OAC Rule 3745-54-98 sampling in Permit Conditions K.6(e)(i) and (ii), K.6(f), and K.6(g).

(c) A list of elevated constituents for each well; and,

(d) A permit modification request to add the elevated constituents to the constituent list for the affected wells and the wells monitoring the vertical and horizontal extent of elevated constituents (adjacent wells in the same horizon and wells in the same cluster monitoring the zone above or below). The Permittee must begin sampling for the elevated constituents in the associated affected wells and adjacent (vertical and horizontal) wells during the next semi-annual sampling event.

(f) If the results of Appendix to OAC Rule 3745-54-98 sampling in accordance with Permit Condition K.6(e) indicate constituents are present exceeding comparison standards in any of the wells adjacent to the well with the initial exceedence of a comparison, determined in accordance with Permit Condition K.2(b)(i) and (ii), then the Permittee must conduct additional Appendix to OAC Rule 3745-54-98 sampling using the well sampling strategy described in Permit Condition K.6(e) not later than the next regularly scheduled sampling event at these adjacent wells. A well need only be sampled once within a given sampling event, excluding resampling or confirmation considerations, to meet the requirements of this Permit Condition, even if it is identified for this sampling more than once due to overlap.

(g) The Permittee must analyze samples from all affected monitoring wells for all constituents contained in the Appendix to OAC Rule 3745-54-98 annually to determine if there are any new elevated constituents. The Permittee may confirm the initial results of this sampling in the same manner as described in Permit Condition K.6(c); otherwise, any constituents reported initially will be assumed to be present. The Permittee must identify the constituents that are elevated in accordance with the procedures in Permit Conditions K.2(b)(ii) and K.6(e)(iii). The Permittee must report the analysis results and identify any new elevated constituents to the director in writing as well as submit a modification request to add any newly identified elevated constituents to the constituent list for the affected wells and the adjacent wells (vertical and horizontal), according to the schedule in Permit Condition K.7(c)(iii). The Permittee must begin

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sampling and analyzing for the new constituents in the associated affected wells during the next semi-annual sampling event.

(h) If a constituent added to the constituent list of an affected well in accordance with Permit Condition K.6(e)(iii) or K.6(f) and all constituents listed in Permit Condition K.2(b)(I and ii) have not exceeded their associated comparison standard for three consecutive sampling and analysis events, then that well will revert to unaffected status. The constituents that were added to that well's sampling and analysis list must no longer be termed elevated at that well; however, the constituent must remain on the constituent list for the well and its adjacent wells.

(i) If a constituent's analytical result is equal to or greater than its comparison standard determined in accordance with Permit Conditions K.2(b)(i) and (ii), K.6(c),(e), (f), or (g), then, in accordance with OAC Rule 3745-54-98(G)(1), the Permittee must notify the director, in writing, within seven days of this finding. The notification must indicate what chemical parameters or hazardous constituent have shown statistically significant evidence of contamination. The Permittee may demonstrate that a source other than the facility caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making such a demonstration, the Permittee must do the following:

(i) Notify the director, in writing, within seven days of determining that a constituent has reached or exceeded its comparison standard, of the intent to make a demonstration.

(ii) Include in the Final Report in Permit Condition K.7(c)(v) a report which successfully demonstrates that a source other than the facility caused the newly elevated constituent(s), or that the newly elevated constituent(s) exceedence resulted from error in sampling, analysis, or evaluation.

(iii) Include in the Final Report in Permit Condition K.7(c)(v) an application for a permit modification to make any appropriate changes to the IGWMP at the facility.

(iv) If this exceedence also causes an exceedence of the risk standard in the ACL model in Appendix E-11 of the permit

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application, then the Permittee may make this demonstration in addition to, or in lieu of, submitting a permit modification application to modify the IGWMP for corrective action as required by Permit Condition K.3.(c) and OAC Rule 3745-54-99(H)(2). However, under Permit Condition K.3.(c), the same period of 90 days is required for both a successful "Other Source Demonstration" and the submittal of the permit modification application. The Permittee is not relieved of the 90 day requirement for a permit modification unless this "Other Source Demonstration" is deemed successful by the Agency prior to the 90 day time limit.

(v) Continue to monitor in accordance with the IGWMP at the facility.

(j) For each elevated constituent the Permittee must report the extent of the plume. The report must include a map and cross-section(s) showing the value of each elevated constituent. Isoconcentration maps and cross-sections must be constructed for each elevated constituent determined to be present in two or more monitoring wells. The estimated extent of each plume must be indicated on the maps and cross-sections. The report must include an evaluation of the need for additional monitoring wells to determine the full extent of the plume. If additional wells are needed to determine the extent of the plume, a Class 2 permit modification in accordance with Permit Condition K.1(c) must be included in the report. This report information must be included in each Final Data Report and Evaluation submitted in accordance with the schedule in Permit Condition K.7(c)(vi).

(k) The Permittee will evaluate all elevated constituents in accordance with the ACL model in Appendix E.11 of the permit application.

(l) When evaluating the results of the ACL model:

(i) The comparison standard for noncarcinogenic risk is a hazard index of unity. The comparison standard for carcinogenic risk is 1.0×10^{-5}. The Permittee must calculate the total noncarcinogenic and carcinogenic risks for all of the constituents detected (and confirmed, optionally or as required) in all of the unaffected and affected wells, in accordance with the scenarios described in Appendix E.11 and

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Data Usability Guidelines in Appendix E.10 of the permit application.

(ii) If the total noncarcinogenic and carcinogenic risks in a particular vicinity do not exceed their respective standards in Permit Condition K.6(l)(i), then routine monitoring will continue.

(m) Applying the ACL Model

(i) If the results of the ACL model indicate that the Permittee has not met the risk standards in Permit Condition K.6(l)(i), then corrective action will apply, and must be conducted in accordance with Permit Condition K.3.

(ii) In addition to the risk standards for the ACL model, no concentrations in the uppermost aquifer in excess of maximum concentration levels (for constituents that have them) are permitted to leave the facility, including easements and rights-of-way. If such an exceedence occurs, then corrective action will apply, and must be conducted in accordance with Permit Condition K.3.

(n) The Permittee must determine and report the ground water flow rate and direction in the uppermost aquifer semi-annually in accordance with Permit Condition K.7(b)(xvi).

K.7 Record Keeping and Reporting
OAC Rule 3745-54-75

(a) The Permittee must submit semi-annually (April and October) both a Preliminary Data Report and a Final Data Report and Evaluation for each semi-annual sampling and analysis event. Preliminary Data Reports must be submitted on or before July 1st for April events and January 2nd for October events. Final Data Reports and Evaluations must be submitted on or before September 1st for April events and March 1st for October events. If any of these dates fall on a weekend or state holiday, then the reports will be due no later than the following business day. The reports must be submitted to Ohio EPA Northwest District Office and entered into the facility's operating record in accordance with OAC Rule 3745-54-73. The Permittee must maintain all documentation from the laboratories regarding analysis of ground water samples. Ohio EPA may require submittal of a copy of the full

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quality assurance/quality control (QA/QC) report for a particular event if circumstances warrant; but, in general, this will not be required except as described in Permit Conditions K.7(b) and (c).

(b) Preliminary Data Reports required by Permit Condition K.7(a) for replacement well sampling required by Permit Condition K.1(e); background sampling for statistics required by Permit Condition K.2(b)(ii)(c); semi-annual sampling and analysis events required by Permit Condition K.6(b); Appendix to OAC Rule 3745-54-98 sampling and analysis required by Permit Condition K.6(e)(i) and K.6(f); and, Annual Appendix to OAC Rule 3745-54-98 sampling and analysis required by Permit Condition K.6(g). must include all of the following information:

(i) The laboratory results from each of the wells, including duplicates, and their associated data qualifiers;

(ii) The date each well was sampled (tabulated);

(iii) The date, time, and identification of all blanks and duplicates (tabulated);

(iv) Any field log documenting deviation from the procedures in Appendix E.9 of the permit application including documentation of parameter omissions during the sampling event;

(v) The date the Permittee received the results from the laboratory;

(vi) The date the owner or operator completed their review of the analytical laboratory's verification of the accuracy and precision of the analytical data and determined its quality. This review must be based upon the elements in Permit Condition K.7(b)(vii) and the data validation procedures in Appendix E.10 of the permit application.

(vii) The results of the data validation review per K.7(b)(vi) including: report completeness, chain of custody, sample receipt form, signed statement of validity, technical holding time review, data qualifiers including their definitions, dilutions, blank data, spikes, spike recovery %, surrogate recovery, and

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an explanation of any rejected results consistent with the U.S. EPA and Ohio EPA guidelines for data review;

(viii) The results from all blanks (temperature, trip, field, equipment, method, etc.), matrix spike analysis, and laboratory control samples;

(ix) Results of the field parameters;

(x) All Chains-of-Custody;

(xi) A list of affected wells;

(xii) The constituent lists for the affected wells;

(xiii) Identification of the person(s) performing the statistical evaluation;

(xiv) Ground water elevation data, tabulated and evaluated as required by Permit Conditions K.5(a) and K.6(n);

(xv) Potentiometric surface maps for each monitored zone based on the ground water elevation data [one map for each zone based on data from all wells and five maps (one for each month preceding the sampling event) for the bedrock aquifer based on data from DUG-1, DUG-2, DDG-3, DDG-1, and CR-1], whether the data are contourable or not; and,

(xvi) A discussion of flow characteristics, including any changes in ground water flow direction in the bedrock zone.

(c) Final Data Reports and Evaluations required by Permit Condition K.7(a) must include the following:

(i) the information specified in Permit Condition K.7(b)(i) through (xiii) for all resampling and analysis and confirmation sampling and analysis conducted to satisfy the requirements of the Permit Conditions referenced in paragraph K.7(b);

(ii) the date of completion of all data evaluation (ACL model, statistical analysis, etc.);

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(iii) in accordance with Permit Condition K.6(c) and (g), identification of elevated constituents for each well; in accordance with Permit Condition K.6(d), identification of non-naturally occurring constituents that are confirmed in an unaffected well but at concentrations less than their associated comparison standards; in accordance with Permit Condition K.6(e)(iv), notice of change in well status from unaffected to affected; and, in accordance with Permit Condition K.6(h) notice of change in well status from affected to unaffected, and change in constituent from elevated to non-elevated;

(iv) Reserved;

(v) any demonstrations in accordance with Permit Conditions K.2(b)(ii)(b), K.3(c)(ii) and (iii), and K.6(i)(ii) and (iii);

(vi) plan maps, cross sections, and evaluations for each elevated constituent showing the extent of the plume in accordance with Permit Condition K.6(j);

(vii) the results of applying the ACL model, including a discussion of the effect of using any qualified data;

(viii) a report on the effectiveness of the IGWMP, performed by a qualified hydrogeologist; and,

(ix) a report on, and schedule for, any permit modification requests to be submitted in accordance with Permit Condition K.8. Permit modification requests may include, but are not limited to, those required by the following Permit Conditions:

(a) K.1(c), to add, remove or replace wells;

(b) K.1(e)(vi), for changes to the program as a result of a difference in ground water quality between a well and a replacement well;

(c) K.3(b) and (c)(iii), to establish a corrective action program meeting the requirements of OAC Rules 3745-54-100 and 3745-54-101;

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(d) K.6(e)(iv)(d) and K.6(g), to add constituents to sampling and analysis lists for affected wells and adjacent wells;

(e) K.6(i)(iii), for changes to the program as a result of a demonstration;

(f) K.6(j), add wells to determine extent; and,

(g) K.8 changes as a result of the Permittee or the director determining that the IGWMP established by this Permit no longer satisfies the regulatory requirements.

(d) The Permittee must submit an annual report to the director by March 1st of each year. The Permittee may submit this report in conjunction with the October sampling event Final Data Report [see Permit Condition K.7(a)]. Annual reports must reference the titles and dates of the semi-annual reports and any updates to those reports (for example, due to confirmation sampling, comments by Ohio EPA, etc.), but generally do not need to include duplicates of hard copies previously submitted. The annual reports must include at least a copy on disk of all ground water analyses and elevations, blank data, and a hard copy of well-specific information (location, depth, etc.) for any new/replacement wells in the format selected by Ohio EPA, as well as any other information specified in the instructions for the annual report not addressed in this Permit Condition.

K.8 Request for Permit Modification
OAC Rules 3745-54-98(H), 3745-54-99(J), 3745-54-100(H) and 3745-55-101

If the Permittee or the director determines that the IGWMP established by this Permit no longer satisfies the regulatory requirements, then the Permittee must submit an application for a permit modification in accordance with OAC Rule 3745-50-51 within 90 days of this determination to make any appropriate changes to the program.

K.9 Compliance Schedule

The Permittee must submit to Ohio EPA within ninety (90) days after permit journalization an updated Section E of the permit application which addresses all the comments outlined in Attachment A of this permit.

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ATTACHMENT K-1
Monitoring Wells in the Integrated Ground Water Monitoring Program

"S" Wells		"D" Wells		Bedrock Wells
F1S	M6S	F1DA	M4D	R-1
F2S	M10S	F2D	M5D	R-2
F3S	M11S	F3D	M6D	R-3
G1S	M12S	G1DA	M8D	R-4
G2S	M13S	G2DA	M9D	R-5
G3S	M14S	G3D	M10D	R-6
G4S	M15S	G6	M11D	R-7
H1S	M16S	G7	M12D	R-8
H2S	M17S	G8	M13D	R-9
H3S	M18S	G9	M14D	R-10
H4S	M19S	G10A	M15D	R-11
H5S	M20S	G11	M16D	R-12
H6S	M21S	H1D	M17D	R-13
I3SA	M22S	H2D	M18D	R-14
I4S	M23S	H3D	M19D	R-15
I5SA	MR1SA	H4D	M20D	R-16
I6S	MR2S	H5D	M21D	R-17
I7S	MR3S	H6D	M22D	R-18
I8S	MR4S	I3D	MR1DA	R-19
M1S	SW1S	I4D	MR2D	R-20
M2S	SW2S	I5D	MR3D	R-21
M3S	SW3S	I6D	MR4D	R-22
M5S		M1D	SW1D	
		M2D	SW2D	
		M3D	SW3D	

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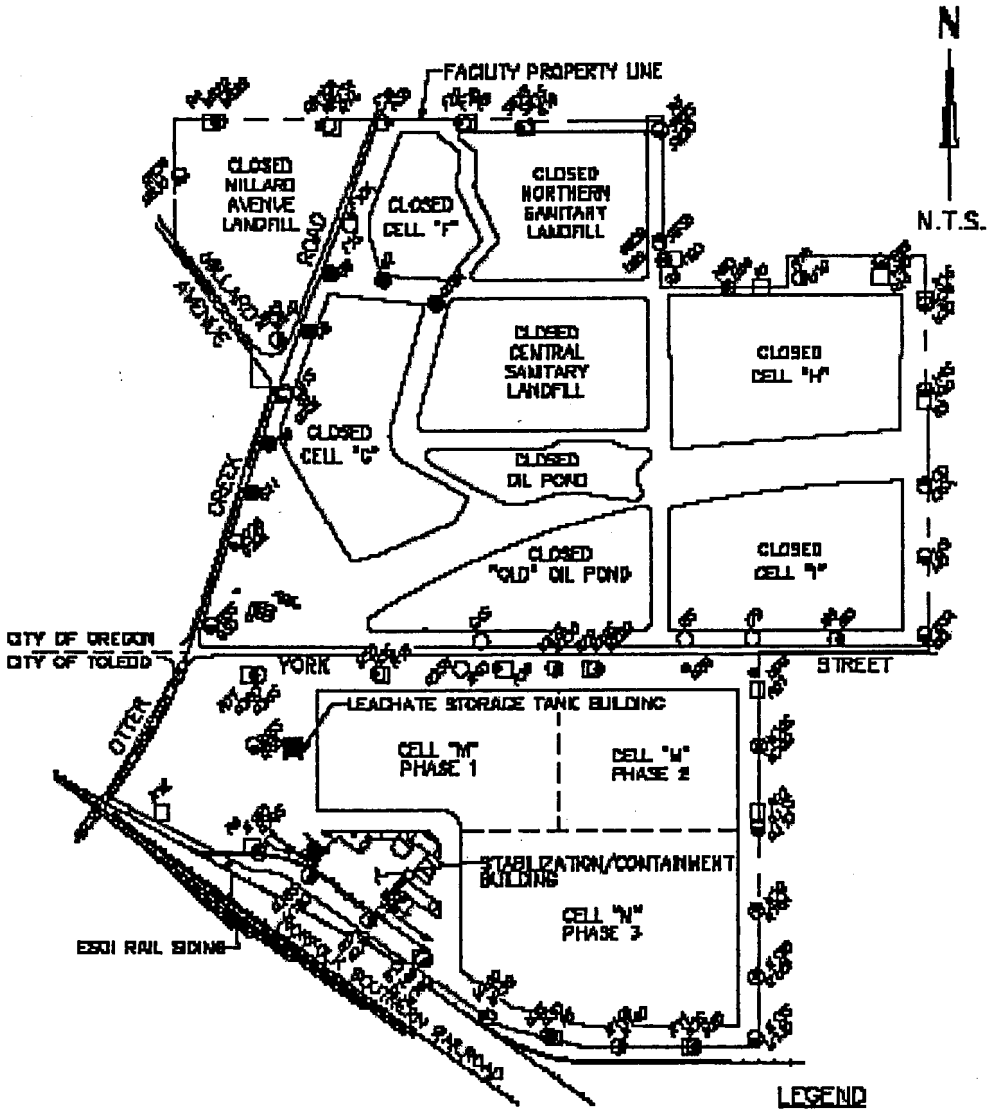
ATTACHMENT K-2
Integrated Ground Water Monitoring Program
Map of Monitoring Well Locations



LEGEND

MONITORING WELLS

- □ BEDROCK WELL
- ● DEEP WELL SAND
- ▪ DEEP WELL TILL
- ○ SHALLOW WELL

NOTE
SYMBOLS REPRESENT MONITOR WELL TYPE WITHIN EACH CLUSTER BUT DO NOT REFLECT EXACT LOCATION WITHIN THE CLUSTER.

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MODULE L - ADDITIONAL CONDITIONS

L.1 Document Depository

The Permittee must maintain a document depository at a public library located in the City of Oregon. In accordance with OAC Rule 3745-50-30, such depository must consist of all consequential documents and correspondence between the Permittee and Ohio EPA under the terms and conditions of this permit subject to the requirements of permit condition A.13 or germane to such documents. If permission to maintain such a document depository is denied by the library or the terms required for such depository are or become unreasonable, then the Permittee must inform Ohio EPA and document such denial and/or circumstances.

L.2 Fire Control Provisions

Prior to managing hazardous waste in any area of the modified portions of the facility, the Permittee must have available a sufficient supply of water at a nozzle pressure of 100 PSI for use with the Permittee's fire suppression system.

L.3 Surface Water Management

The Permittee must follow the surface water management plan for the entire facility as found in Volume 3C, Appendix D.24 of the permit application.

L.4 Maintenance and Abandonment of Other Wells

All other wells or borings that have been installed at the facility that are not addressed in Modules K or E must be operated and maintained to perform to design specifications and when abandoned, should be plugged and abandoned in accordance with the *State of Ohio Technical Guidance for Sealing Unused Wells* (State Coordinating Committee on Ground Water, 1996) and *Ohio EPA's Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring (1995)*. Well plugging and abandonment methods, and certification must be submitted to the director within thirty (30) days from the date the wells are abandoned.

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Attachment A
Part B Permit Application Renewal Comments

Note: Ohio EPA received Revision No. 18 of Section E (related to ground water monitoring and response) on June 30 as a part of a self implementing Class 1 permit modification. Ohio EPA has evaluated Revision 18 and determined that the Permittee has adequately addressed the comments of Attachment A of the draft permit with the exception of the following comments: Attachment A comment #1, #3 (partial), #17 and #19. Therefore, all the comments of Attachment A of the draft permit have been removed in the final permit with the exception of the comments noted above.

1. Section E-1a, page E-3, last paragraph, last two sentences state, "The location of monitoring wells are included on Plate 2, and Plates GW-1 through GW-4. The boring logs for the various investigations are in Volume 4B and 4D." ESOI must update the drawings, boring logs, well construction logs, and abandonment reports to include any changes (new wells or abandonments) since the April 1992 permit revision. Also a replacement figure is needed for Figure 2-1 in the *Comprehensive Hydrogeologic Report* contained in Volume 4A.

3. Section E-1c, page E-8, third paragraph; page E-10, first paragraph; and page E-11, last paragraph discuss permeability ranges. ESOI must update the permeability to include the range defined in the May 1996 and October 30, 1998 Permit Renewal Applications and any data obtained during the RCRA Facility Investigation (RFI).

   The text should also be revised to include a calculation of permeability for the upper till. The calculation should be based upon the initial placement of waste in the unit, the distance traveled from the waste unit to the well and the time it took for contaminants to show up in monitoring wells. The potential permeability ranges shall include measured permeabilities and calculated permeabilities.

17. OAC Rule 3745-50-44(B)(2) requires the permit application to include, for all borings/piezometers/wells, drilling logs, well construction logs, and abandonment reports, a map(s) showing their location and a Table listing all borings/wells identifying whether the borings/wells are active or abandoned and referencing the location of drilling logs, well construction logs, and abandonment reports.

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- Section E-1a of the permit application, page E-2, second paragraph, states "With few exceptions the borings and wells installed prior to 1985, during the preceding studies, have been grouted." ESOI must revise the text to identify which borings/piezometer/wells have been plugged. ESOI should reference a table that includes a list of borings/piezometers/wells at the facility and lists whether the borings/piezometers/wells are active or abandoned. The table should be updated to include all existing knowledge of borings at the site and to reference the location in the permit application of drilling logs and abandonment reports.

- Section E-1a, page E-3, last sentence of third paragraph, "Figure E-1 shows the ESOI site with the locations of the borings done during the various studies up to 1987." ESOI must update this text and Figure E-1 or add a series of Figures to show all borings, piezometers and wells (including shallow borings/piezometers/wells) to date.

19. Figures E-3 through E-3B show cross sections of the geologic stratigraphy. In accordance with OAC Rule 3745-50-44(B)(2), ESOI must add additional cross sections to show the geologic stratigraphy along the whole line of compliance as described by OAC Rule 3745-54-95. The cross section should use data from all borings installed along the point of compliance to date. In addition, cross sections should be included across each waste unit showing the position of waste placement relative to the geologic strata.

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ATTACHMENT B

Comments on April 16, 2004 Revised Closure Plan (Section I)

General Comment

1. ESOI must delete all references to Section H (such as found on pages I-33, I-36, I-46, I-55, I-64, I.3-5, I.3-6, etc.) and revise the text in Section I as appropriate. ESOI must provide a modified version of Section I (addressing the comments below) to the Agency within 90 days of permit journalization. The modified version should be submitted as a Class 1 permit modification requiring prior director's approval pursuant to OAC Rule 3745-50-51.

Comments Related to Text

2. In Section I-2h6, Landfill, ESOI must provide the most up-to-date (at the time of responding to these comments) information on remaining Cell M capacity and on the status of installed and to be installed stainless steel riser pipe inserts.

3. The last paragraph in Section I-3c4, Container Storage Area Soil Sampling, (new text) states that ESOI may elect to excavate and stabilize underlying soils without prior testing. ESOI must expand the narrative which describes this alternative by providing a method to determine whether the remaining (un-excavated) soil is clean, or if further excavation and treatment is needed. ESOI must also state that any created depression, which may cause a significant retention (ponding) of rain water, will be back-filled with an appropriate clean material.

4. In Section I-3f1, Closure Schedule, besides deleting reference to Section H, ESOI must revise the text to state that the partial closure of each phase of Cell M will occur when waste placement reaches final grade and has a surface area of 250,000 square feet available for capping, and, as these areas are closed, they will be monitored and maintained as described in Module I ("Post-Closure Care") of the Permit, and in accordance OAC Rule 3745-55-17.

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5. In Section I-4, Post-Closure Activities, paragraph 3, ESOI must delete the term "applicable to Cell M" since the post-closure activities listed in this paragraph apply to all of the closed units at ESOI.

6. In Appendix I.3, page I.3-7, in the last two sentences of the first paragraph, ESOI must delete term "upper prediction limits" since it is not relevant to the background remediation standard (BRS) - calculated as a mean of the background concentrations plus two standard deviations.

7. Regardless of the employed sampling-depth interval (0 to 2 feet, or below 2 feet), ESOI must sample soils in question for all fourteen metals shown in permit application Appendix I.3, page I.3-8, "Table of ESOI Site-Specific Background Values". ESOI must revise values for antimony, mercury, selenium, silver, and thallium, as follows:

   For values based on "Johlin" data:

Antimony	0.25 mg/kg (MDL) to replace 0.84 mg/kg (due to more than 90% non-detects - refer to page 58 of the 1999 CPRG)
Mercury	0.13 mg/kg (available GRS - generic remediation standard, 1999 CPRG) to replace "NA" (due to 100% NDs)
Silver	0.30 mg/kg to replace 0.32 mg/kg (all values are 0.3 mg/kg, and SD = 0 - Appendix I.3, Attachment C)

For values based on "Wynn" data:

Antimony	3.00 mg/kg (90th percentile) to replace 3.63 mg/kg (due to more than 50% non-detects - refer to page 58 of the 1999 CPRG)
Mercury	0.13 mg/kg (available GRS - generic remediation standard, 1999 CPRG) to replace "NA" (due to 100% NDs)

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Selenium	56.0 mg/kg (90th percentile) to replace 76.46 mg/kg (not normal distribution, large SD)
Silver	0.30 mg/kg (from "Johlin" data) to replace "NA" (due to the lack of data from Wynn Rd)
Thallium	0.10 mg/kg (from "Johlin" data) to replace "NA" (due to the lack of data from Wynn Rd)

8. In Appendix I.3, at the bottom of page I.3-5, ESOI must delete remark # 2, and instead, state that the values for silver and thallium from the "Johlin" data are also used in the Wynn Rd "metals subset". (Please see comment # 6, above.)

9. In Appendix I.3, at the bottom of page I.3-8, ESOI must revise the remark # 4 in accordance with the required changes in background values, as presented in comment # 6, above. Also, ESOI must delete both, the portion of the remark # 4 discussing intended use of the "Non-Parametric Bootstrap Method", and the Attachment B to Appendix I.3, with an overview of the "Bootstrap" method - because neither is relevant to the way the soils BRS are determined for the purpose of the Otter Creek Rd. facility closure.

10. In Appendix I.3, at the beginning of Section 2.0, "Testing Evaluation of Soils, Contaminated Media and Non-Waste Handling Areas of the Facility", ESOI must state that the Land Disposal Restrictions (LDR) status, for each waste stream that would be generated during closure, will be described in Schedule C. Additionally, ESOI must say that those hazardous constituents, for which the testing would be conducted during closure, will be described in Schedule D, and that both Schedules C and D will be updated annually and submitted to Ohio EPA with the annual report that is required by OAC 3745-54-75. ESOI also must incorporate the following language which further specifies the requirements and the procedures associated with these schedules:

    (i) Schedule C shall be based upon all approved codes listed in Form 8700-23 ("Hazardous Waste Permit Information Form"), Section 10. Schedule C shall be updated annually for any new EPA Hazardous Waste Number (Waste Code) that the facility may accept. An EPA Hazardous Waste Number may be excluded from

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consideration at the time of closure if the Permittee can demonstrate, through the annual report or other records, that such waste has never been handled at the facility, at a specific location within the facility, or in a specific regulated unit.

(ii) Schedule D shall list the hazardous constituents reported in Schedule C, and must be in accordance with OAC 3745-270-40, Table - Treatment Standards for Hazardous Wastes. Schedule D shall be used as a resource in making waste determinations in accordance with OAC 3745-52-11 and thereby determining the constituents that would be analyzed for at the time of closure for each regulated unit and roadway surfaces in accordance with the waste evaluation plan in Section I, Appendix I.3 of the Permit.

Comments Related to Drawings

11. On Drawing PRMO-T04, ESOI must state what the "dash-dot" line on the South side of Cell M represents.

12. On Drawing PRMO-L13, ESOI must revise detail "Typical L.C.S. Access Pipe" to show how and where the final cover components will be keyed-in.

13. All drawings which have a revision date of 12/2003 or 02/2004 (based on the posting instructions from the 4/22/04 revision submission) have not been certified by a PE. The revision table on the drawing itself indicates the drawing has been "Revised for Response Ohio EPA 4-18-03 NOD" which seems to contradict the posting revision date. ESOI must provide drawings with accurate revision dates in addition to the required PE certifications.

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ATTACHMENT C

"Eligible Investments" means (i) direct obligations of (including obligations issued or held in book entry form on the books of the Department of the Treasury of the United States of America), or obligations the principal of and interest on which are unconditionally guaranteed by the United States of America; (ii) bonds, debentures or notes, or other evidence of indebtedness payable in cash and issued or guaranteed by any one or a combination of any federal agencies whose obligations represent the full faith and credit of the United States of America; (iii) certificates of deposit properly secured at all times by collateral security described in (i) and (ii) above, (which agreements are only acceptable with commercial banks, savings and loan associations, and mutual savings banks); (iv) the following investments fully insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation: (a) certificates of deposit, (b) savings accounts, (c) deposit accounts, or (d) depository receipts of banks, savings and loan associations and mutual savings banks; (v) commercial paper rated in one of the two highest rating categories by at least two nationally recognized rating agencies or commercial paper backed by a letter of credit or line of credit rated in one of the two highest rating categories; (vi) written repurchase agreements with any bank, savings institution, or trust company which is insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation, or with any broker-dealer with retail customers which falls under Securities Investors Protection Corporation protections, provided that such agency or instrumentality of the United States of America, and provided further that (A) such collateral is held by the Trustee or any agent acting solely for the Trustee during the terms of such repurchase agreement; (B) such collateral is not subject to liens or claims of third parties; (C) such collateral has a market value not including accrued interest (determined at least once every 14 days by the Trustee) at least equal to the amount invested in the repurchase agreement; (D) the Trustee has a perfected first security interest in the collateral; (E) the repurchase agreement shall be for a term not longer that 270 days; and, (F) the failure to maintain such collateral at the level required in (C) above will require the Trustee to liquidate the collateral; (vii) investments in a money market mutual fund rated AAAm or AAAm-G by Standard & Poor's Corporation, the assets of which funds consist of either tax-exempt obligations or direct obligations of the United States of America; (viii) investment agreements, but not in excess of 10% of the invested proceeds of the Bonds; (ix) other than those obligations issued by the State Pursuant to Article VIII, Section 13 of the Constitution of the State or Chapter 140 or 3377 of the Ohio Revised Code, obligations issued by the State or its subdivisions rated in one of the two highest rating categories of either Standard & Poor's Corporation or Moody's Investors Service, or any successors thereto; and, (xi) any no-load money market mutual fund

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or fund sponsored by a bank, including the Trustee, in either case consisting exclusively of obligations of the United States of America or any agency thereof. Any of the foregoing investments may be with or purchased from the Trustee or its affiliates.

Responsiveness Summary

Envirosafe Services of Ohio, Inc.
Cell M Vertical Expansion - Class 3 Modification

December 2005

Background:

On May 12, 2005, Ohio EPA issued to Envirosafe Services of Ohio, Inc. (Envirosafe) a draft renewal and class 3 modification to its Hazardous Waste Facility Installation and Operation Permit (Permit). A public information session was held on June 27, 2005 at Clay High School and a public hearing was held on August 2, 2005 at the City of Oregon's council chambers. The comment period began on May 12th and closed on August 2nd. The renewal and modification applications were made available for public review and comment at the Oregon Branch Public Library and Ohio EPA offices during the comment period.

However, a portion of Section D of the renewal application, titled "Process Information", was inadvertently omitted from the package made available for public viewing. Therefore, this portion of the permit renewal application was made available for public review and comment from September 8, 2005 to October 23, 2005 at the same locations noted above. The draft Class 3 permit modification to Envirosafe for a proposed vertical expansion of the active disposal cell at the facility was unaffected by this development and was issued in final form on September 15, 2005.

Comments on the draft renewal and modification permit were submitted to Ohio EPA orally at the public hearing and to the Agency in written form. Outlined below are the comments received and Ohio EPA's response to all comments received in the May 12th to August 2nd period and the September 8th to October 23rd period.

The following are responses to written comments received from Ms. Sandy Bihn, Western Lake Erie WATERKEEPER© and Western Lake Erie Sierra Conservation Chair dated August 2, 2005:

Comment 1: "One of the biggest issues in the Envirosafe expansion issue in the 80's was to ask for an investigation of the old landfill areas. There were no studies and no data to show the track record of the landfill. Now 20 years later those studies are yet to be completed."

Ohio EPA Response: *The RCRA Corrective Action investigation currently underway at the facility is designed to evaluate past waste management areas of the facility and determine the need for environmental remedies in these areas. Significant work in investigating these areas has been completed (RFI Phase 1) and the results of this work have been made available to the public in various forms. Additional work further defining the nature and extent of contamination (Phase 2) will be conducted in the near future.*

Comment 2: "The previous Envirosafe expansion hearings were held in the 80's before the Hazardous Waste Facility Board. That board was created in great part because the State of Ohio preempted local zoning laws. While the Hazardous Waste Facility Board no longer exists, Ohio E.P.A. has repeatedly stated that all that changed was that the authority was transferred from the Hazardous Waste Facility Board to Ohio E.P.A. I ask that Ohio E.P.A. demonstrate that they will exercise that authority by, as a condition to the vertical expansion, if granted, Envirosafe be required to place an estimated amount to control the offsite contaminant migration and to fund a collection of the waters in the Toledo Raw Water intake line trenches so that there will be no liability on the part of the City of Toledo for offsite migration created by the trenches(which were designed to keep contamination outside the raw water intake pipes). A special fund known as Perpetual Care was required by H.W.F.B. Ohio E.P.A. could use their discretionary authority to require funding for contaminant containment in the old waste areas and Toledo waterline trench liquid containment."

Ohio EPA Response: *The facility will be required to provide financial assurance for implementation of corrective measures once those measures have been defined by Ohio EPA. Regarding funding for collection of water in the City of Toledo raw water line monitoring trenches, the current post-closure cost estimate already sets aside $801,186 for trench sampling and analysis.*

Comment 3: "Envirosafe for at least the past five years has played a delay game for completing the corrective action investigation. Time after time deadlines have been broken and lengthy extensions taken. Most recently the data verification for Phase One of the investigation sat around for two years."

Ohio EPA Response: *While it is true that certain investigation activities have been delayed, Ohio EPA believes that overall, adequate progress is being made with the investigation. As noted above, significant investigative work has been completed (RFI Phase 1) and the results of this work have been made available to the public in various forms. Additional work further defining the nature and extent of contamination will be conducted in the near future.*

Comment 4: "... *To allow this company an expansion when no funds have been set aside for the old waste areas would be a rip off for Ohio taxpayers.* The least that O.E.P.A. could do is to require that cleanup funds for the leaking areas be placed in a trust fund for contaminant containment."

Ohio EPA Response: *As noted in the response to Comment 2 above, the facility will be required to provide financial assurance for implementation of corrective measures once those measures have been defined by Ohio EPA.*

Comment 5: "As background for my comments, I wish to read the summary and conclusion of the TOSC findings dated May 24. 2005 into the record:"

Ohio EPA Note: *TOSC Findings & Summary Conclusions were included in the record but are not*

reproduced in this responsiveness summary. The TOSC report is readily available at the following web address: http://www.egr.msu.edu/tosc/envirosafe/

Ohio EPA Response: *Ohio EPA's comments on the final TOSC report (which was reviewed by Ohio EPA staff prior to the May 24, 2005-final release date) are included in a March 24, 2005-letter from Lynn Ackerson, Ohio EPA, NWDO to Kirk Riley, TOSC Coordinator. Copies of the letter are available upon request.*

Comment 6: "I wish to also add for the record, the attached TOSC questions regarding the expansion of Cell M. Also, if there was a large manufacturing building that wanted to add a second story, substantial work would have to be done on the foundation to allow the second floor. This landfill liner cannot be raised for additional support to be added. The engineering proposed relies on clays and dirt. From the TOSC information we see that the clay and dirt is not stopping contaminant migration. The touted clay soils have fractures and sand lenses. In addition, this is a very flat area and placing a landfill as the highest point is simply wrong."

Ohio EPA Response: *The TOSC questions on the expansion are responded to below. Ohio EPA has evaluated the existing cell liner system and components and has determined that the existing structure will adequately support the additional waste volume without compromising the integrity of the cell. The TOSC report was generated using data from the Permittee's RFI Phase 1 investigation. As noted above, the ESOI Corrective Action investigation is focused on past waste management areas at the site which were not constructed to today's standards. Cell M is constructed with a dual liner system, leachate collection and leak detection. In addition, waste placed in Cell M is treated to minimize contaminate mobility. There is no evidence that contaminants have migrated beyond the liner systems of Cell M.*

Ms. Bihn also attached the following questions generated by Technical Outreach Services for Communities (TOSC) regarding the expansion of Cell M. Ohio EPA Responses have been provided.

Comment 1: "Is there precedent for the expansion of a Subtitle C landfill where there has been the collapse of existing leachate collection piping, as occurred at Cell M? (See question 3 below for more about this event.)"

Ohio EPA Response: *The perforated leachate collection pipes are located on the bottom of the cell to facilitate leachate movement to the leachate removal sumps and were completely imbedded in the granular drainage layer during construction. This granular material is practically incompressible and provides a sound structural environment for the pipes (i.e., transferring stress around the pipe walls) - thus, there is no reason to believe that the leachate collection pipes are crushed or their functionality is compromised. Further, Ohio EPA has evaluated the leachate collection system in light of the vertical expansion and has concluded that the leachate collection integrity will be maintained under the increased waste load. Calculations for leachate collection system pipe integrity are presented within the vertical expansion modification (Volume 2 document entitled "Cell M - Phase 3 Leachate Removal System Pipe Evaluation, December 2003).*

Comment 2: "Is Ohio EPA concerned about permitting an expansion of a cell where there has been a prior failure in the collapse of the leachate collection pipes? What steps has ESOI taken to ensure that another collapse will not occur?"

Ohio EPA Response: *Please refer to the response to Comment 1 above regarding the leachate collection pipes.*

As a clarification, the solid wall pipes, which are installed on internal slopes of Cell M ("riser pipes"), serve to access the leachate sumps and to allow pumping of leachate to the surface. In 2000, some of the "riser" pipes were indeed found deformed under the pressure of the waste because of weak foam bedding, but they were not "crushed". Fourteen out of the total of eighteen riser pipes were retrofitted with the stainless steel pipe inserts which can withstand several times the pressure from the waste at its highest elevation proposed in the Cell M modification request. This measure will provide long-term reliable access to the sumps.

Comment 3: "Was the deformation (collapse) of the Cell M leachate collection pipes a localized problem or systemic failure of the piping system? Was the original pipe made of PVC or HDPE? Because HDPE is more flexible, it can handle uneven load distribution better than PVC piping."

Ohio EPA Response: *Please refer to the response to Comment 2 above. The original riser pipes are constructed of HDPE.*

Comment 4: "What investigation of the secondary riser pipe collapse did US EPA or Ohio EPA do at the time? What caused the collapse? Did ESOI underestimate the load from the waste on the landfill? Were concerns raised at the time over the overall stability of the leachate collection system or of the landfill cell itself?"

Ohio EPA Response: *Please refer to the response to Comment 2 above.*

Comment 5: "Who is the manufacturer of the steel inserts proposed for the existing leachate collections pipes? Where else have these inserts been used? Would these inserts impede the flow of leachate in the leachate collection system?"

Ohio EPA Response: *As detailed above, the riser pipes serve to access the leachate sumps and to allow pumping of leachate to the surface. Again to clarify, these are the pipes which were retrofitted with stainless steel inserts - not the leachate collection pipes. Thus, these inserts would not impede the flow of leachate in the leachate collection system. Complete details on the inserts are available in the permit application.*

Comment 6: "What load testing has been done (or will be done) by ESOI related to the expansion of Cell M? Will load testing be done after the inserts are placed into the existing piping?"

Ohio EPA Response: *All information on any load testing of materials is available in the Part B permit application and the Vertical Expansion Modification application. No load testing of the in-place stainless steel riser pipe inserts is being required.*

Comment 7: "What is the composition of the primary liner system for Cell M?"

Ohio EPA Response: *The liner for Cell M at ESOI is a composite of gravel drainage layer, high density polyethylene (HDPE) geomembrane and engineered and recompacted clay with a secondary liner underneath the primary liner comprised of another composite of leak detection system, HDPE geomembrane and recompacted clay. The recompacted clay is several feet thick in both the primary liner (2 feet thick) and the secondary (9 to13 feet thick) liner system. The liner system design standards are detailed in the Part B application, Section D.*

Comment 8: "What steps will ESOI take to prevent excessive leachate head (hydraulic pressure) from building up in the primary liner system? Has ESOI done head buildup calculations for the primary liner system? What is the effect on head buildup if all leachate collection pipes are assumed crushed and non-functional?"

Ohio EPA Response: *The Permittee is required to operate pumps continuously as needed to prevent excessive leachate build-up. Leachate head calculations are detailed in Appendix D.31 of the Part B permit application. As noted in the response to Comment 1 above, there is no reason to believe the leachate collection pipes have deformed. The collection pipes are a component of a multifaceted collection system which also includes a geonet and a 12 inch gravel drainage layer. Even if the pipes are assumed to be non-functional, there is sufficient redundancy in the system with the geonet and gravel layer to assure adequate liquid transfer to the collection sumps.*

Comment 9: "Has any leachate ever been found in the secondary leachate collection system (or the leachate detection system for the secondary leachate collection system)?"

Ohio EPA Response: *No. Although liquid is removed from the secondary system at times, this liquid has never been found to contain chemical compounds which would be indicative of leachate.*

Comment 10: "How many sump points does ESOI have in the primary leachate system? How many sump points in the secondary leachate collection? ESOI should demonstrate to regulators' satisfaction that leachate will end up in the sumps for collection and removal."

Ohio EPA Response: *Cell M is comprised of six sub-cells (M1 - M6). Each sub-cell has one sump point for each system (primary & secondary).*

Comment 11: "What is the composition of the bottommost layer? Is it standard clay or a geosynthetic clay liner (GCL) system?"

Ohio EPA Response: *Please refer to the response to Comment 7. There is no GCL in use in the bottom liner system.*

Comment 12: "What slope stability analysis/testing will ESOI do? In addition to testing the slope stability of the sides of the cell, what testing will ESOI carry out of the stability of the whole or expanded Cell? (There are examples of entire landfill structures "sliding" and becoming displaced, particularly if the waste material is heavy.)"

Ohio EPA Response: *Deep seated slope stability modeling as well as modified infinite slope stability modeling was completed by the Permittee. This analysis is provided in detail in Volume 2 of the Class 3 Cell M vertical expansion modification application.*

Although routine in-situ testing of waste's shear strength is not a common waste disposal operational requirement, it has been prescribed for Cell M as an additional control measure. Permit Conditions within the approved modification require periodic in situ sampling, laboratory strength testing by unconfined compressive strength test method (ASTM D 2166-00)and submission of a detailed report of the strength testing results. This information must be submitted to Ohio EPA.

Comment 13: "What is the composition of the gravel that is part of the primary leachate collection

system? Does it contain carbonates? Does Ohio EPA consider the gravel to be stable and not subject to erosion by the leachate?"

Ohio EPA Response: *The initial testing of the aggregate used in the primary leachate collection system was outlined in the initial permit application (August 15, 1983) and subsequent revisions. The results from these tests did indicate that some fraction of the aggregate was composed of carbonate minerals or were carbonate rocks such as limestone or dolomite. However, a complete analytical composition of the aggregate was not required to be determined prior to issuance of ESOI's 1991 permit and therefore the exact composition of the aggregate is not known.*

Chemical erosion of carbonate-bearing aggregate may be significant when the waste leachate is acidic (USEPA, 1995). Chemical erosion is also a function of the solubility of those leachable components of the aggregate. The solubility of minerals that make up limestone or dolomite aggregate are affected by the chemistry of the leachate. If the leachate does not contain the same chemicals as the aggregate, leaching may be more pronounced. Conversely, if the leachate already contains those same chemical components of the aggregate, leaching will be less significant. Geoscientists refer to this phenomena as the saturation of a fluid. Leachate undersaturated with those chemicals contained in the aggregate will tend to leach those components. A saturated solution is where the leachate is in equilibrium with aggregate and little leaching will occur. This is because the saturated leachate holds as much of those chemical components as is possible before precipitation of new minerals may begin to occur (oversaturated conditions). In order to understand the erosion potential of leachate from Cell M., Ohio EPA personnel examined the pH of the leachate and saturation of the leachate with respect to common carbonate minerals. The pH of the leachate ranges from 8 to 12 standard units. For example, subcell leachate analyses in November 2000 in Cell M had the following pH values:

Sample	*Date*	*pH*
subcell 1	*11/28/2000*	*8.79*
subcell 2	*11/28/2000*	*9.25*
subcell 3	*11/30/2000*	*10.25*
subcell 4	*11/28/2000*	*11.9*
subcell 5	*11/28/2000*	*11.9*

These pH values are typical of leachate analyses for Cell M. Therefore, Cell M primary leachate is alkaline in nature. These values are significantly different from leachate used to test the aggregate outlined in ESOI's Part B Application which was near a pH of 7. Therefore, the pH of the leachate is not expected to cause significant chemical decomposition of the aggregate.

To test the saturation of carbonate minerals (calcite (CaCO3) and dolomite (CaMg (CO3)2), the U.S. EPA geochemical model MINTEQA2 (www.epa.gov/ceampubl/mmedia/minteq/index.htm) was used. Average values of chemical components from the November 2000 sampling event were used as input for the model. The input values and selected output values are presented in the following tables:

Table of MINTEQA2 input values

Leachate Chemistry	Concentration (mg/L)	Leachate Chemistry	Concentration (mg/L)
Ca2+	96	F-	45
Cd2+	0.02	Fe3+	20.8
Cl-	4280	K+	2440
CN-	0.29	Mg2+	40
Cr2+	0.65	Na+	5567
SO42-	5868	Zn2+	26.7
NH4+	187	Alkalinity (CO32-)	3514
pH	10.4 (fixed, s.u.)	Temp (°C)	12

Table of MINTEQA2 Results

Sum of Cations	Sum of Anions	Charge Difference %	Ionic Strength
2.57e-1	3.13e-1	9.47	0.355

Table of MINTEQA2 Saturation Indices

Mineral	Saturation Index
Calcite	-0.002
Dolomite (disordered)	0.000
Dolomite (ordered)	0.605

Note: *Unsaturated conditions have large negative Saturation Indices*
Saturated conditions have Saturation Indices close to 0.0
Oversaturated conditions have large positive Saturation Indices

The results indicate that leachate from Cell M is very near saturation for dolomite and calcite constituents which are the common carbonate containing aggregates in north west Ohio. The saturation of these minerals is not expected to originate from the drainage layer aggregate. The pH of the water which comes in contact with treated K061 waste is estimated to increase to above 9 standard units prior to entering the leachate collection system drainage layer. This estimation is

based on results of testing completed on treated K061 during an extensive Bin Mix Study of the waste that was completed in 2001 (Ohio EPA, 2001). In the initial step of the TCLP extraction process, de-ionized water was placed in contact with treated waste and the resulting solution was analyzed. A slurry pH is taken of the treated waste with water and this value is used to determine the proper extraction fluid type. For example, results of some typical pH analyses from these studies are as follows:

DATE	10/27/99	10/27/99	11/03/99	11/03/99	12/09/99
Sample ID	TR-2A	TR-5B	TR-6A	TR-1B	TR-6A
pH (s.u.)	9.84	10.19	11.61	10.30	9.78

These pH values are of the range that are observed for Cell M leachate analyses. Therefore under these conditions, chemical erosion of aggregate in the primary leachate collection system within Cell M is not expected to occur.

References:

U.S. EPA (1995) CALCIUM CARBONATE DISSOLUTION RATE IN LIMESTONE CONTACTORS. By Raymond D. Letterman, Syracuse University, Syracuse, New York 13244. Under contract for U.S. EPA Risk Reduction Engineering Laboratory, United States Environmental Protection Agency Cincinnati, OH 45268. EPA/600/R-95/068 July 1995.

Ohio EPA (2001) Treatability Study of Envirosafe Services of Ohio K061 Treatment Process, Bin Mix Report, Columbus, Ohio, October 2001.

Responses to written comments received from the City of Oregon's consultant ARCADIS dated 08/2005:

Comment 1: "We understand that the Ohio Environmental Protection Agency (OEPA) may permit this expansion without the benefit of a complete engineering set of permit drawings. It has been shown previously that the engineering interpretation of design and permit conditions relative to this site can vary substantially. Therefore, it is impossible for ARCADIS to finalize any comments regarding expansion until final engineering drawings are made available. It is not standard practice for a waste disposal landfill project of this magnitude and complexity to be constructed without final engineering drawings available for state and public review."

Ohio EPA Response: *Ohio EPA disagrees with the assertion that complete plans and design requirements have not been available to the public. The modification application is complete. The general plan drawings and design requirements of the proposed modification are detailed in the three volume modification application submitted by Envirosafe in January 2004 and last updated in February 2005. Specific design requirements for Cell M are found in Module J of the permit. Copies of the modification application have been and continue to be available for public viewing at the Oregon Public Library, our Northwest District Office in Bowling Green, and in our Central Office in Columbus.*

As detailed in the draft permit, a Class 1A permit modification is being required to simply update the application and make minor revisions to the drawings, consistent with the design requirements specified in the draft permit. The Class 1A permit modification cannot change the design specifications authorized in the final permit and as such is appropriately classified as a change that

does "not necessitate substantial alteration of the permit conditions and do not reduce the capacity of the facility to protect human health and the environment" (OAC Rule 3745-50-51(E)).

Envirosafe submitted a Class 1A permit modification on August 9, 2005 in anticipation of final issuance of the renewal/modification permit. Although not required by law, a 30 day comment period was announced for the Class 1A permit modification. Therefore, Ohio EPA believes Oregon and citizens have been given ample opportunity to provide comments throughout the permitting process.

Comment 2: "One of the basic concepts of landfill liner design is separation of the clay portion of the liner system from contact with the uppermost aquifer system. This concept as a design requirement is clearly illustrated in Ohio EPA's municipal solid waste regulations, which require an isolation zone of 15 feet between the bottom of the recompacted liner system and the uppermost aquifer system. While this requirement is stated for municipal solid waste landfills, one should expect an equivalent or more protective standard for hazardous waste facilities. This requirement is designed to eliminate the possibility of diffusion of contaminants directly into groundwater through the clay portion of the liner. Diffusion of contaminants through the recompacted clay liner increases the speed at which the contaminant will travel and thereby reduces the overall effectiveness of the composite liner. Based on our review of the groundwater well data, the groundwater elevation surrounding Cell M averages Elevation 585. The bottom of the liner is more than 30 feet below this elevation and is clearly placed into the upper groundwater system. Over time, the clay portion of the liner will become saturated and highly ineffective."

Ohio EPA Response: *Although there are typically two saturated zones above the bedrock formation on the site, these zones are low yielding and are not considered to be aquifers. OAC Rule 3745-50-10 defines "uppermost aquifer" as the geologic formation nearest the natural ground surface that is an aquifer. At the Otter Creek Road facility, the uppermost aquifer is the bedrock aquifer and is found to begin at an elevation of approximately 500 feet above mean sea level. The lower till (located above the bedrock) ranges from 12 to 30 feet in thickness. The lowest point of the three foot recompacted clay secondary liner is located no less than six feet above the top of the lower till. Therefore, the clay portion of the liner system is adequately separated from the upper most aquifer system. In any case, Cell M's double liner system, which includes a minimum of two clay liners installed over a minimum of six feet of recompacted clay (for a total thickness of 11 to 15 feet) and two High Density Polyethylene (HDPE) plastic liners, is an appropriate barrier to contaminant migration. Lastly, because of the design of the cell, any contaminant migration that would breach the primary liner would first be detected by the secondary leachate collection system (or leak detection system) before it could move beyond the secondary liner system. No contamination has been detected in the leak detection system.*

Comment 3: "Another basic concept of any composite liner system design is intimate and consistent contact between the geosynthetic liner, HDPE in this case, and the recompacted clay liner. If there is direct and consistent contact between the HDPE liner and the clay liner, leakage from any holes in the HDPE liner will be limited to small amounts with very slow leakage rates. When there are folds in the HPDE liner and areas having no contact with the clay, leakage through holes in the HDPE liner can be rapid. This concept is mandated in the federal EPA liner design criteria regulations for composite liners for municipal solid waste landfills and is stated as follows: "The liner component must be installed in direct and uniform contact with the compacted soil component." For this reason, the wrinkles, or "furrows," in the liner component identified in the initial construction of Cell M are of

concern.

The initial Construction Quality Assurance (CQA) document for Cell M, Phase 3, South Slideslope Liner System, dated January 29, 2002, and revised May 24, 2002, discusses the numerous wrinkles encountered during the placement of the gravel drainage system during construction. Typically, material placed on the liner is placed on the membrane only during the cool hours of the morning to eliminate the development of wrinkles and the necessity to cut and repair wrinkles. It appears that this standard level of care was not required and, consequently, the excessive wrinkles that formed in the membrane had to be cut out.

The unusual number of wrinkles removed using this approach can cause excessive stress on the liner, resulting in future liner system failure. The liner stress reduces the safety factor for long-term operation of the facility. Additional review of the resolution of the wrinkle problem at this site found that during construction, some wrinkles were left in place and others were repaired using a non-standard approach, i.e., "sand bridging" of the wrinkles. In the repair approach document prepared by The Mannik and Smith Group, Inc., the wrinkle is shown holding some form of its shape open after soil is placed over and around the wrinkle. If this is the method used to repair the wrinkles, it is likely that the wrinkle would collapse on itself when the cover soil was placed over it. This could result in a fold and failure of the membrane in that area. Total control of this approach during the bridging activities is imperative. The manufacturer of the membrane recommends that if this type of wrinkle control is attempted, 100 percent, third-party monitoring of sand placement is critical. Based on review of the certification documentation, however, this third party review was not performed. Even if these repairs are made, the liner in these areas would not be in direct contact with the clay."

Ohio EPA Response: *During construction of the final phase (Phase 3), furrows or "wrinkles" in the HDPE liner material were observed. These wrinkles were generally found on side slope and/or transitional (Phase 2 to Phase 3) areas and were caused by differential tensile forces created by waste placement in adjacent operating portions of the cell. Because the area where wrinkles were observed had not yet received waste, they were typically repaired by cutting the HDPE, overlapping the excess material and then sealing/welding the material back together. Where the cut/repair approach was infeasible (some side slope areas), the wrinkles were addressed by building sand "bridges" around the wrinkle to prevent liner fold-over.*

When the liner was cut to be repaired, the repair procedure was consistent with the liner welding requirements outlined in the permit application including appropriate QA/QC procedures and independent engineer oversight. This is the same liner welding process used to join liner sheets as the cell was constructed and there is no reason to believe the repaired joints have diminished liner integrity.

In the sand bridging situations, there were no new welds or liner joints to test or certify. Further, the placement of sand on the liner system does not require the use of specialized equipment or technicians as would liner welding. As a part of the standard design of the cell, sand/aggregate is always placed on top of the liner as a part of the leachate collection system. In this situation, additional sand was just added in the areas of the discovered wrinkles. On-site staff observed and documented in field logs all sand bridging activities to assure appropriate placement of the sand.

Comment 4: "An operational leachate collection system is an important aspect of hazardous waste landfills. Typically, leachate collection systems have two components: a granular short path system and a piping system, which the granular system feeds. The piping system transports the leachate to

a sump for removal. It should incorporate a cleanout and management program to keep the piping system fully functional. This is done to ensure leachate can always be transported to the leachate pump for removal from the cell. Removal of the leachate is required to always maintain a liquid head on the liner of less than 1 foot (30 cm). At this time, the sump riser pipes for this landfill have begun to fail. Stainless steel inserts were installed in an attempt to assure their operation. Design calculations demonstrate that the existing leachate collection piping will not carry the anticipated load induced by the waste placed over it, causing it to fail.

Without an operational leachate collection piping system, the cell must rely on the gravel drain to carry all of the leachate to the sumps for removal. Gravel systems can be fouled from fines and substances washed in from the waste, which could lead to excessive liquid head on the liner system. The piping system and the granular material used in a leachate collection system offer redundancy and an increased safety factor for the leachate system. It appears this facility may no longer have this redundancy for its long-term success."

Ohio EPA Response: *The perforated leachate collection pipes are located on the bottom of the cell to facilitate leachate movement to the leachate removal sumps and were completely imbedded in the granular drainage layer during construction. This granular material is practically incompressible and provides a sound structural environment for the pipes (i.e., transferring stress around the pipe walls) - thus, there is no reason to believe that the leachate collection pipes are crushed or their functionality is compromised. Further, Ohio EPA has evaluated the leachate collection system in light of the vertical expansion and has concluded that the leachate collection integrity will be maintained under the increased waste load.*

Comment 5: "Landfill stability is an engineering and practical concern in landfill development. An unstable landfill can collapse and/or cause a rupture in the containment system resulting in substantial harmful effects to the environment and to the public. EPA has established widely recognized standards for landfill stability. According to EPA design documents, the calculated stability of a municipal solid waste landfill must have a factor of safety for static conditions equal to 1.5 and a factor of safety for dynamic conditions of 1.0 using earthquake loadings defined for the site location. Ohio EPA also enforces these requirements when evaluating municipal solid waste landfills. In the model used to evaluate stability, substantiated values based on actual conditions for both cohesion and friction angle should be used. Whenever possible, test data are obtained to get proper numbers for both of these values. With better test data, one can assume that the model will provide more accurate results. If values based on site test data are not available or not used, higher factors of safety should be used. In the stability analysis, the impact of the cohesion (c) and friction angle (0') has an important impact on the computed factors of safety for the landfill. In their permit modification request, Envirosafe Services of Ohio Inc., prepared an evaluation of the stability of the proposed landfill expansion. Five remolded waste samples were tested in consolidated undrained (CU) triaxial tests and effective strengths were reported in the Mannik and Smith report Cell M Class 3, Permit Modification Request, Volume 2, Parameter Selection, Table 21, page 12. The following table shows the reported test results for the remolded samples in a consolidated undrained test. The in situ samples listed in Table 21 were not used because they were only "one point tests" and may not be representative of the proposed waste.

Sample Type	c' (psf)	0'(degree)

Remolded	0	46
Remolded	0	020
Remolded	1,300	40
Remolded	2,200	24
Remolded	700	22.5

In the permit application, a cohesion value for the waste of 2,000 pounds per square foot (psf) was used and a friction angle of 24 degrees was used to calculate the reported stability safety factors. Only one value of the four reported values for cohesion was shown to be 2,000 psf or above.

It is not unusual in design practice to use the two-thirds rule (assume two-thirds of the test strengths are higher than the appropriate value for modeling) when determining the value of cohesion to be used in the stability model. Following typical design practices, the value of 700 psf for cohesion should be used to determine the safety and stability of this landfill based on the information provided. In order to better understand our concerns with the analyses performed for the permit application, we performed a sensitivity analysis for the cohesion values holding all of the design requirements the same.

The slope stability model was run with various cohesion values for the waste while holding the friction angle constant at 24 degrees. The following table and figure show the resulting safety factors when the cohesion is assigned values of 2,000, 1,500, 1,000, 500, and 0 psf while keeping the friction angle constant at 24 degrees. Acceptable safety factors are 1.5 for the static case and 1.0 for the seismic case.

Cohesion (psf) (0=24)	Number of Samples Equal to or Above This Point	Factor of Safety (static)	Factor of Safety (seismic coefficient)
2,000	1	1.5	1.1
1,500	1	1.4	1.0
1,000	2	1.3	1.0
500	3	1.2	1.0
0	5	1.1	1.0

The sensitivity analysis shows that any value of cohesion less than 2,000 psf would result in a

reported factor of safety for this landfill expansion less than 1.5 for the static condition.

In our opinion, a substantial increase in the number of samples run showing a cohesion value of 2,000 psf and above would be required to represent that this landfill meets the 1.5 factor of safety for stability."

Ohio EPA Response: *The treated K061 waste, which represents the majority of waste disposed in Cell M, is pozzuolanic-like. Therefore, after the waste is treated to meet land disposal requirements, the mixture begins to harden and strengthen. To obtain true waste strength characteristics, cured samples must be tested. Within the parameter section of the Vertical Expansion modification application, results of in-situ waste strengths obtained directly from Cell M by core sampling were provided. These core samples exhibited cohesive strengths of 5000 psf and above and were presumed to have cured since they were taken from historically placed waste. Because the landfill will be developing as the waste is curing, a representative remolded sample which has partially cured was chosen as the most conservative design tool for slope stability analysis. The waste sample which was remolded and allowed to cure resulted in a cohesive strength of 2200 psf. Within the Vertical Expansion Modification the deep seated slope stability analysis was completed using 2000 psf.*

Although routine in-situ testing of waste's shear strength is not a common waste disposal operational requirement, it has been prescribed in Cell M as an additional control measure. The final permit conditions require periodic in situ sampling, laboratory strength testing by an unconfined compressive strength test method (ASTM D 2166-00) and submission of a detailed report of the strength testing results.

Responses to written comments received from the City of Oregon's consultant Charles A. Moore, Ph.D., P.E., undated:

Issue 1: Background. OEPA's refusal to adopt generally accepted models for groundwater regimes in glacial terrain, exacerbated by their insistence that the landfill is effectively isolated from the surrounding groundwater regime has caused them to overlook the true potential for environmental contamination at the site. The incorrectness of OEPA's assumption with respect to ground water is evidenced by the high degree of cross-correlation among the wells at various elevations and positions around the landfill.

The consequence of this is that groundwater circulates more freely around the landfill than OEPA originally thought, and there is more potential for contaminant transport. OEPA's lack of understanding became obvious when bubbles formed under the landfill's synthetic liner. Further evidence of OEPA's misinterpretation of the groundwater regime can be found in the RCRA RFI Phase I report.

In order to drain these bubbles, cuts were made in the liner which subsequently had to be repaired. This resulted in a compromised liner. It is my understanding that Arcadis will address this issue further.

Issue 1: Groundwater regime. The original ODNR interpretation of the groundwater regime is consistent with the way in which most glacial hydrogeologic regimes in Ohio behave. Conversely,

OEPA's interpretation that there is an aquiclude overlying the bedrock aquifer is inconsistent with other interpretations.

Cross-correlation studies between the levels in the wells at the site and bedrock hydraulic heads show that they strongly track each other. This would indicate that the hydrologic regime has interconnectivity.

The RCRA RFI Phase I report's finding of organics at the till interface shows that the hydrologic regime is more complex and shows more interconnectivity than OEPA represents.

Conclusion 1: Because of underestimation of the complexity of the groundwater regime, there is increased potential for contaminant release into the groundwater, and there is increased likelihood that the performance of the landfill will be adversely affected."

Ohio EPA Response: *As required in OAC Chapter 3745-50, the basis for issuance of a renewal and/or modification permit is a complete and technically adequate application and a history of compliance. In response to the comment, Ohio EPA believes the application is complete and appropriately represents the hydrogeologic conditions at the site. Ohio EPA has been evaluating ground water monitoring information from the over 120 wells at the site for over a decade, and thus has a solid understanding of the hydrogeologic environment. Nonetheless, Ohio EPA has historically evaluated any additional information that has been made available and will continue this practice in the future. Absent any clear citation or inclusion of studies referred to in the comment (e.g., "cross-correlation studies" and "ODNR interpretation"), Ohio EPA is unable to provide an additional specific response. Also, it is unclear in what sense the RFI Phase 1 report would be different than what "OEPA represents" in that the report is ultimately subject to Ohio EPA approval.*

The comment also implies that past liquid formation under the plastic liner is related to a misunderstanding of hydrogeological conditions at the site and that removal of liquid comprised the integrity of the liner system. In 1998, after requiring the Permittee to do a comprehensive study of the "bubble" issue, Ohio EPA concluded that the source of the liquid was deemed to be pore water squeezed from the clay material as waste was loaded into the cell and not ground water. This evaluation and report is available upon request. Also, any liner cuts that were made were repaired in accordance with the requirements outlined in the facility's permit and certified by the independent engineer with Ohio EPA oversight. Thus, Ohio EPA has no reason to believe the liner system integrity was compromised.

Issue 2: Background. A second area of concern has been previously articulated to OEPA in a report entitled ESOI Oregon Landfill - Leachate Control System Pipe Design and Installation. That report, read into this record by reference, shows that the landfill was further compromised when design engineers made analytical errors in the design of the leachate collection and removal pipes, resulting in their being greatly under-designed. The consequence of this was that the riser pipes crushed. It is not possible to observe the crushed collection pipes because the design made no provision for access to these pipes for inspection. Standard engineering analysis indicates that the collection pipes should be crushed.

Standard engineering practice would have included access points which would allow the condition of the collection pipes to be inspected. In addition, had OEPA taken my suggestion that the collection pipes be inspected as part of the southward expansion of cell M, we would know whether these pipes

are crushed.

Issue 2: Flawed leachate collection and removal system. The leachate collection and removal system is badly under-designed (a) because the design engineer performed erroneous calculations, and (b) because the operator failed to install the pipes in accord with industry standard manufacturer's recommendations.

Conclusion 2: It would be inappropriate to permit a vertical expansion that would add additional loading to these under-designed and improperly installed pipes. Moreover, effort should be expended to repair the existing leachate collector pipes so that they function properly.

Ohio EPA Response: *The solid wall pipes, which are installed on internal slopes of Cell M ("riser pipes"), serve to access the leachate sumps and to allow pumping of leachate to the surface. In 2000, some of the "riser" pipes were indeed found deformed under the pressure of the waste because of weak foam bedding, but they were not "crushed". Fourteen out of the total of eighteen riser pipes were retrofitted with the stainless steel pipe inserts which can withstand several times the pressure from the waste at its highest elevation proposed in the Cell M modification request. This measure will provide long-term reliable access to the sumps.*

The perforated leachate collection pipes are located on the bottom of the cell to facilitate leachate movement to the leachate removal sumps and were completely imbedded in the granular drainage layer during construction. This granular material is practically incompressible and provides a sound structural environment for the pipes (i.e., transferring stress around the pipe walls) - thus, there is no reason to believe that the leachate collection pipes are crushed or their functionality is compromised. Further, Ohio EPA has evaluated the leachate collection system in light of the vertical expansion and has concluded that the leachate collection integrity will be maintained under the increased waste load.

Issue 3: Background. A third area of concern is in the analyses performed for the slope stability for the proposed expansion. In particular, it is noted that there is extremely high scatter in the data being relied upon to characterize the strength of the waste. Standard engineering practice would preclude decisions being made on the basis of such poor data. Certainly, the best available technology (minimum risk) requirement for hazardous waste landfill cannot be conducted using these data.

The operator was required by permit to keep records of the placement of the various types of waste at the site and to document the strength of the waste through tests. This did not occur. Thus the physical properties required to perform the slope stability analyses were not available because they were not quantified as required by permit. It would be poor engineering practice to add additional material on top of existing material whose strength properties are not adequately known.

Issue 3: Slope stability. The operator (a) failed to provide required documentation of the strength of the wastes placed in the landfill, and (b) failed to provide required maps of the locations at which these highly variable wastes have been placed. Without knowledge of the distribution of different waste types in the landfill, and without knowledge of the strength properties of the wastes it is not possible to perform an acceptable analysis of the stability of the landfill slopes. Thus, because the operators failed to provide documentation of the materials in the landfill as required by permit, the information required to accurately calculate the stability of the landfill slopes is not available.

Conclusion 3: It would be inappropriate to construct a higher landfill on top of materials whose strengths have not been adequately characterized in accord with requirements of earlier permits."

Ohio EPA Response: *In its application, the Permittee has adequately addressed the strength of waste materials being disposed in Cell M and has selected appropriate parameters (cohesion and friction angle) for the slope stability calculations. Based on these parameters, after Cell M's south 3:1 slope has been revised to become a compound slope of 4:1 from the toe to elevation 670 ft and 3:1 from there to the crest of the completed landfill, both Ohio EPA and ARCADIS (letter dated February 21, 2005) conducted their own slope stability analyses, and concluded that the calculated factors of safety satisfy the 1.5 (for static conditions) and 1.0 (for earthquake conditions) requirements.*

Issue 4: Background. A fourth area of concern is the lack of adequate quality control for the proposed expansion. As few as one strength test every two months could be performed under the proposed protocol. Moreover, only the unconfined compression test is proposed to document the strength of the material. This test does not give a measure of the frictional characteristics. The slope stability analyses performed relied upon both cohesion and friction. Finally, the propose protocol allows the operator to perform the testing rather than having it performed by an independent third party. Historically, the operator has failed to perform required strength tests at all, let alone perform them in accord with ASTM standards.

Issue 4: Inadequate quality control. The testing protocol proposed for evaluating the strength of the disposed wastes is woefully inadequate both with respect to the quantity of testing, the type of testing, and third party oversight for the testing.

(1) Under the conditions of the propose expansion permit, as few a one sample every two months could be tested for quality control. Far more frequent testing with multiple sampling points would be required for appropriate quality control. Tests performed should also accurately reflect the diversity of waste products being landfilled.

(2) The slope stability analyses performed for the proposed expansion characterized the strength of the waste by a cohesion component and by a frictional component. The proposed quality control protocol specifies that unconfined compression tests be performed. The unconfined compression test gives an adequate assessment of the cohesion of the material, but does not measure the friction. Thus the proposed quality control protocol verifies the cohesion of the waste but does not verify the equally important friction component.

(3) The proposed quality control protocol for the expansion allows the operator to perform the laboratory testing. Quality control must be done by an independent third party. Moreover, the results should be required to be submitted to OEPA and made available as public records.

Conclusion 4: The quality control for the proposed expansion falls far short of acceptable engineering practice.

Ohio EPA Response: *Although routine in-situ testing of waste's shear strength is not a common waste disposal operational requirement, it has been prescribed for Cell M as an additional control measure (not as a substitute for the triaxial compression test which is considered a conventional design tool). As such, Ohio EPA believes the testing frequency outlined in the permit is appropriate. The proposed unconfined compressive strength test method (ASTM D 2166-00) can provide "approximate value of the strength of cohesive soils (waste, in this case) in terms of total stress".*

The permit condition requires the ASTM standard to be followed no matter the testing location or

personnel. Moreover, the condition already requires submission of a detailed report of the strength testing as suggested by the comment. This information must be submitted to Ohio EPA and is subject to public record requirements. Ohio EPA's evaluation of the strength testing report will ensure proper quality control protocols are being followed.

The unconfined compressive strength test provides an indirect determination of shear strength by dividing obtained compressive strength by two. Therefore, the measured maximum compressive strength prior to the sample yielding must be at least 4000psf in order to meet the required minimum 2000psf shear strength. The friction angle is a characteristic of the material and is not expected to change (for the treated K061) from the triaxial compression test pre-determined value of 25 degrees. As such, ASTM D 2166-00 method is considered adequate for periodic confirmation of the needed waste's strength for consolidation and slope stability reassurance. Results of the triaxial compression tests are provided in the renewal application documents.

Issue 5: Background. Fifthly, I want to re-emphasize that my ability to review this proposed expansion has been greatly hampered by the lack of complete plans and specifications. It is unthinkable that OEPA would ask the public to review and comment on any action without having complete plans and specifications made available.

Issue 5: Lack of complete plans and specifications. Many important details of construction, construction monitoring, and quality control for the proposed expansion are vaguely described in the draft permit. The submissions of important details is left to future Class 1 permit modifications or, in case of the south slope design, simply future "revised plans..." which are not subject to public review.

Conclusion 5: The citizens of Oregon and their consultants are entitled to <u>complete</u> plans and specifications <u>before</u> issuance of the permit so that they can make rational assessments of the proposals."

Ohio EPA Response: *Ohio EPA disagrees with the assertion that complete plans and design requirements have not been available to the public. The modification application is complete. The general plan drawings and design requirements modification are detailed in the three volume modification application submitted by Envirosafe in January 2004 and last updated in February 2005. Specific design requirements for Cell M are found in Module J of the permit. Copies of the modification application have been and continue to be available for public viewing at the Oregon Public Library, our Northwest District Office in Bowling Green, and in our Central Office in Columbus.*

As detailed in the draft permit, a Class 1A permit modification is being required to simply update the application and make minor revisions to the drawings, consistent with the design requirements specified in the draft permit. The Class 1A permit modification cannot change the design specifications authorized in the final permit and as such is appropriately classified as a change that does "not necessitate substantial alteration of the permit conditions and do not reduce the capacity of the facility to protect human health and the environment" (OAC Rule 3745-50-51(E)).

Envirosafe submitted a Class 1A permit modification on August 9, 2005 in anticipation of final issuance of the renewal/modification permit. Although not required by law, a 30 day comment period was announced for the Class 1A permit modification. Therefore, Ohio EPA believes Oregon and citizens have been given ample opportunity to provide comments throughout the permitting process.

Responses to written comments received from the City of Oregon dated 08/02/2005:

Comment 1: "ORC 3734.05 (H) requires the director shall consider a 'report regarding the facility's compliance or non-compliance' prior to issuing the draft report. The initial notice of the proposed height modification stated that a record of violations could be obtained by writing to Ohio EPA. Oregon submitted a request for the list of permit violations from the facility. The list provided by the OEPA in 2004 is incomplete, and understates the number of violations at the facility. In July 2005, Oregon requested a current list of violations but was informed there was no updated list."

Ohio EPA Response: *The director did consider, among other things, the facility's compliance or non-compliance with applicable rules as a basis to issue the draft permit. Ohio EPA found that the facility has the requisite history of compliance. The list of violations provided to the City in 2004 was complete. Any compliance or violation information succeeding the 2004 list has been made available for the City's review. City representatives have visited both Ohio EPA's Central Office and Northwest District Office numerous times during the summer of 2005 to perform record reviews.*

Comment 2: "The applicant's record of violations and non-compliance shows that the permit renewal and modifications must be denied because the applicant failed to operate in accordance with ORC Chapter 3734, the regulations, and the permit."

Ohio EPA Response: *Ohio EPA disagrees. As noted above, the director has determined that the facility has the requisite history of compliance to support this action.*

Comment 3: "The applicant failed to show the requisite reliability, competence and expertise in the hazardous waste industry for issuance of a renewal or modification."

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA considered the applicable criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action.*

Comment 4: "The application is incomplete as required by the OAC and ORC."

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA believes the application is complete and meets the applicable statutory and regulatory requirements*.

Comment 5: The application contains false, misleading and inaccurate statements in violation of the ORC and OAC.

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA believes the application is complete and meets the applicable statutory and regulatory requirements.*

Comment 6: The Ohio EPA denied the public participation rights set out in the ORC and OAC.

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA followed all public participation requirements set forth in OAC Chapter 3745-50. In fact, Ohio EPA has gone beyond public participation requirements specified in law by holding a public information question and answer session on June 27th at Clay High School and by extending the public comment period well beyond the 45 days specified in the rules.*

Comment 7: "Envirosafe is conducting RCRA corrective action. The current permit and draft permit

allow Envirosafe to request that the Director reimburse these expenses from the "surplus" in the closure and post-closure funds. The Director, at his sole discretion, can choose to reimburse these expenses of Envirosafe and its consultants.

The Director is a political appointee of the governor. The Ohio Attorney General is an elected official involved in making enforcement and supervising disclosure requirements.

The Ohio Bureau of Workers' Compensation scandal shows such situations are not a theoretic concern, but instead an active threat to effective regulation of the landfill. The "coingate" scandal, brought to light by the *Toledo Blade,* shows that monies in a trust fund meant for sick and disabled workers can be converted to political contributions and private gain. We must insure that funds meant for the long term protection of our families and Lake Erie are not at risk.

The Bureau of Workers' Compensation scandal showed that trust funds were invested in things like a coin fund, Cuban cigars, an off-shore Bahamas fund, and in other insecure, strange, and unusual ways. The Worker's Compensation scandal revealed that the trust funds were not adequately audited by experienced, independent outside auditors.

In order to insure the integrity of the system and to preserve the funds for the long term protection of Lucas County's residents and our Lake Erie environment, the draft permit must be modified:

> ***Paragraph B.37.E:*** **Strike out Sub-paragraph E that allows Envirosafe to seek reimbursement from the closure and post-closure trust funds.**
>
> **Sufficient safeguards on the investments and yearly independent audits must be added."**

Ohio EPA Response: *Ohio EPA believes it is appropriate to allow reimbursement of expenses related to RCRA Corrective Action activities from the more than $17 million that is in excess of the $37 million required for closure/post-closure and perpetual care. As has historically been the case and which continues today, there are strict investment criteria to ensure the security of the trust fund. These criteria are detailed in Attachment C of the permit and represent sufficient safeguards on trust fund investments. Reimbursement activities are documented in Ohio EPA files and available for viewing through public records requests.*

Comment 8: "Closure and Post-closure Fund Estimates: The method for the closure/post closure trust fund estimates under-estimate the actual costs that will be incurred.

First, the funds are based on the premises of a thirty year post-closure period. This period is based upon the idea that the hazardous waste will act like "coffee grounds." As rainwater filters through the landfill it will at first make a strong "toxic coffee" or leachate. Over time, it will make weak leachate and the coffee grounds will biodegrade. Neither is true at ESOI. Closed cells F, G, H, I, and active Cell M contain significant metal bearing wastes that will never degrade. The leachate from the closed cells is still very potent and not declining in toxicity. The metals in the Cell M leachate are rising. In sum, the landfills will not arrive at the point where no further leachate collection is necessary for centuries, if ever.

Question: How long does OEPA anticipate that leachate collection will be necessary for a period beyond thirty years at Cell F, G, H, I or M?

Question: How long will the wastes in Cells F, G, H, I, and M remain hazardous?"

Ohio EPA Response: *Leachate collection systems will remain in the units indefinitely and leachate will continue to be collected and removed as long as it continues to be generated. Absent any change in the legal definition of hazardous waste in the cells, the material will continue to be considered hazardous waste in the future.*

"Second, there are no provisions in the post-closure care estimates for component malfunctions/failures/repairs. The design life for these components is active life of the landfill plus thirty years. But, because leachate collection will be necessary for a far longer period, these components will need to be replaced. In fact, expensive repairs will occur during the thirty-year post-closure period. For example, degradation of the steel pipe inserts in Cell G and I already occurred.

Third, there is no provision for mishap in the construction of the closure of Cell M. During construction there were always significant problems like improperly rolled clay, anchor trench pull-out, etc. At the end of the construction of each phase of Cell M, there has been an extremely large "punch list" of items to be corrected and serious problems that cropped up shortly thereafter. These included the bubble problem, the wrinkles and furrows, etc.

In order to insure the adequate estimation of the closure and post-closure trust funds, draft Term B.36 must be amended to include these additional new conditions:

> **The post-closure care period must be extended beyond thirty years to a reasonable estimate of when the waste and leachate will no longer be toxic. (We suggest this reasonable period cannot be less than 100 years and the actual period is much longer.)**
>
> **The costs to replace components once within thirty years, and each thirty years thereafter for the time until the wastes and leachate are rendered nontoxic, and**
>
> **The calculations require a large contingency added to the closure costs of Cell M reflecting the track record of construction difficulties experienced. (We suggest this figure to be 50% to 75% above current levels.)**"

Ohio EPA Response: *In addition to the regulatory requirements for financial assurance to conduct closure and post closure activities, the facility was also compelled by its initial Hazardous Waste Facility Board permit to maintain additional funds for "perpetual care". The additional funds specified for the perpetual care were $11.5 million (1991 dollars) based on an assumed catastrophic event which would require replacement of the caps on both Cells M and G. ESOI has maintained a trust which is fully funded for closure, post-closure and perpetual care. The trust is currently valued at around $53.7 million. The current cost estimate for closure, post-closure <u>and</u> perpetual care is $36.4 million leaving around $17.3 million in excess of the required amount. The cost for necessary replacement or maintenance of components is already included within the estimate calculation for post-closure care.*

Comment 9: "The permit terms and conditions, to include but be not limited to those at B.1 thru B.3 and its related Part B materials, do not meet the terms of the Land Ban provisions or meet other state and federal requirements for land disposal and are otherwise unreasonable and unlawful."

Ohio EPA Response: *Absent any specific information in the comment that would indicate how the referenced permit conditions and application do not meet requirements for land disposal, Ohio EPA has no basis to conclude that the permit conditions are unreasonable and unlawful .*

Comment 10: "The prior comments and reports drafted by Dr. Rakish Govind previously submitted to the Ohio EPA are incorporated by reference."

Ohio EPA Response: *Generally, over the years Ohio EPA has considered the City's concerns (as expressed through Dr. Govind's correspondence) with the Agency and responded as appropriate. As indicated previously, Ohio EPA's determination is that the applicable standard has been met and a modification permit should be issued.*

Comment 11: "The permit and its terms, to include but be not limited to Module K, do not meet the requirements of the Ohio groundwater protection standards and are otherwise unreasonable and unlawful."

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate how the referenced permit conditions and application do not meet requirements for ground water protection, Ohio EPA has no basis to conclude that the permit conditions are unreasonable or unlawful.*

Comment 12: "The permit and its terms, to include but be not limited to Module E, do not meet the requirements of the RCRA corrective requirements and are otherwise unreasonable and unlawful."

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate how the referenced permit conditions do not meet requirements for RCRA Corrective Action, Ohio EPA has no basis to conclude that the permit is unreasonable and unlawful.*

Comment 13: "The alternate concentration limits and risk assessment provisions do not protect human health and the environment, nor do they meet the requirements of the ORC and OAC and are otherwise unreasonable and unlawful.

Ohio EPA Response: *Absent specific information in the City's comment that would indicate how the referenced permit conditions do not meet requirements for RCRA Corrective Action, Ohio EPA has no basis to conclude that the permit is unreasonable and unlawful.*

Question: Under Ohio's solid waste regulations what contaminants must be tested for in the monitoring wells at a solid waste facility?"

Ohio EPA Response: *In a detection monitoring program, the facility must test for the constituents listed in Appendix I of OAC Rule 3745-27-10. In an assessment monitoring program, the facility must test for the constituents listed in Appendix II of OAC Rule 3745-27-10.*

"Question: Why is a lesser standard appropriate at this hazardous waste

facility?"

Ohio EPA Response: *The standards are the same. A statistical increase in concentration of indicator constituents for the waste disposed is the standard.*

"Question: The facility calls the pre-RCRA units "sanitary landfills." As this is an integrated groundwater monitoring program, why isn't the list required for solid waste landfills appropriate?"

Ohio EPA Response: *The term integrated means that the ground water monitoring program is designed to coordinate the requirements of three programs: detection monitoring, compliance monitoring, and RCRA corrective action. Sampling and analysis of a comprehensive monitoring list, the Appendix to OAC Rule 3745-54-98, has been conducted at all monitoring wells and is conducted annually at all affected wells. Based on this sampling program, Ohio EPA believes that the indicator constituent list is appropriate and capable of detecting any releases from the waste units.*

"Question: Is there a deep well "left" or "right" of the contaminants leaking from the low point of the central sanitary landfill?"

Ohio EPA Response: *Without a point of reference, it is unclear what is meant by "left" or "right". Well locations related to the Corrective Action investigation are detailed in the RCRA Facility Investigation Work Plan and Phase 1 report.*

"Question: Is the flow in the bedrock portion of the aquifer uniformly to the northeast? Don't the Envirosafe reports show it also flows to the northwest? Isn't it true that this bedrock portion of the aquifer shifts and flows south when it is recharging from the BP pumping?"

Ohio EPA Response: *Most generally the flow direction in the bedrock is to the northeast. When BP is not pumping, the potentiometric surface becomes more flat and sometimes in the southwestern corner of the site there is a temporary slight gradient to the southwest and in the northwest corner of the site there is a slight gradient to the northwest.*

"Question: When the flow shifts south in the bedrock portion of the aquifer, doesn't it travel toward the deep wells along York street and Cell M?"

Ohio EPA Response: *Sometimes there may be a slight gradient to the southwest or northwest but, most generally, it is to the northeast.*

"Question: If this is an "integrated system" how does the Agency justify not checking the deep wells north, south, east and west of the pre-RCRA units and Cell F for the contaminants known to be leaking from these units?"

Ohio EPA Response: *The entire site is ringed with monitoring wells. If an indicator constituent is detected at any well in the Integrated Ground Water Monitoring Program (IGWMP) indicating a release, then sampling and analysis of a more comprehensive monitoring list is required at that well*

and adjacent wells. In addition, a more comprehensive monitoring list is required yearly at all affected wells.

"Question: How does the Ohio EPA justify not conducting the yearly Appendix 9 monitoring at all these deep wells?"

Ohio EPA Response: *The entire site is ringed with monitoring wells. If an indicator constituent is detected at any well in the IGWMP indicating a release, then sampling and analysis of a more comprehensive monitoring list is required at that well and adjacent wells. In addition, a more comprehensive monitoring list is required yearly at all affected wells. Indicator parameters are the constituents that will be detected first when there is a release either due to the constituents' concentration in leachate or due to their mobility.*

"Question: Can Ohio EPA provide a legal citation for its authority to remove a known groundwater contaminant from the monitoring requirement for all wells?"

Ohio EPA Response: *For those wells in detection monitoring, indicator parameters are selected in accordance with OAC Rule 3745-54-98(A). For affected wells in compliance monitoring, the more comprehensive list of monitoring parameters are selected in accordance with OAC Rule 3745-54-99(A)(1), 3745-54-93(A), and 3745-51-11. Constituents listed in the appendix to OAC Rule 3745-51-11 can be excluded from the list of hazardous constituents specified in the facility permit in accordance with the requirements of OAC Rule 3745-54-93(B).*

Comment 14: "Oregon incorporates by reference all of its comments, letters, and communications with the Ohio EPA to include, but not limited to, those of Dr. Alison Spongberg on the issues of groundwater, geologic, statistical monitoring etc.."

Ohio EPA Response: *A specific listing of Dr. Spongberg's concerns/ correspondence that the City is incorporating by reference into its comments, as well as their relevance to the Agency's action is lacking. Ohio EPA has in the past considered the City's concerns, as expressed through its consultant Dr. Spongberg, and responded as appropriate. As indicated previously, Ohio EPA's determination is that the applicable standard has been met and a modification permit should be issued.*

Comment 15: "The statement of geologic conditions to include groundwater, soils, and geologic units at the facility contain false and erroneous information and do not meet the requirements of the ORC and OAC."

Ohio EPA Response: *Absent specific information in the City's comment that would indicate how the referenced statements are false and erroneous and do not meet requirements for the ORC and OAC, Ohio EPA cannot concur with the City's comment*.

Question: Can the Ohio EPA list the scientific studies in the peer reviewed literature that it believes support the claims the permeability of the shallow till and deep till units under the site are 10 to the minus 8, or 10 to the minus 9?

Ohio EPA Response: *The permeability of the till comes from site measurements including slug tests conducted in the field and laboratory conducted permeability tests as reported in the permit application, Volume 4A, Comprehensive Hydrogeologic Report, page 5-27 through 5-33.*

Question: Can geologic units with these permeabilities explain how the contaminants reached the groundwater at the deep till/shallow till interface?"

Ohio EPA Response: *While the contaminants detected are not consistent with the permeability measurements conducted at the site, this does not necessarily mean that the information is either "false or erroneous" as claimed by the commenter. The presence of contamination can have a number of causes. The site-wide Ground Water Monitoring and Corrective Action portions of the permit address this contamination.*

Comment16: "The permit requirement allowing more than one foot of leachate violates the requirements of state and federal law. Further it is deleterious to the liner performance and does not minimize the risk of long term escape of contaminants to the environment. A one-foot limitation should be specified.

"Question: Is it technically possible to keep the leachate level below one foot?

Question: Could more storage for leachate be constructed?

Question: Could higher capacity pumps be used?

Question: How much money does Envirosafe save by not building the additional tanks and increased pump capacity?"

Ohio EPA Response: *Leachate levels are routinely measured below the one foot level and is evident from the Permittee's periodic leachate level reports. There is nothing preventing the facility from constructing additional storage capacity for leachate. However, the Permittee is required to run leachate pumps continuously whenever leachate head is above the one foot level. If pumping under these conditions is discontinued because of a lack of storage space for leachate, then the Permittee will be out of compliance with the permit requirements and subject to enforcement action. With respect to pump adequacy, the pumping capacity in the collection sumps exceeds the percolation rate of leachate into the sumps. A financial evaluation of not building tanks or using different pumps was not evaluated in the permit renewal review and is not required by the applicable rules.*

"Question: If sections of the landfill were closed phase by phase as originally set out in the 1991 permit, wouldn't this have greatly reduced the problem of leachate exceeding one-foot?"

Ohio EPA Response: *The sub-cells of the landfill that have ceased to receive waste (generally Phase 1) received a temporary cap as envisioned in the permit application which has reduced leachate generation in those areas.*

"Question: In the 2000 modification for a 'modified phase 3,' did not both the US EPA and ESOI claim that one benefit to the modification was that closure would occur sooner and thus would eliminate the

exceedences?"

Ohio EPA Response: *The Class 3 permit modification that authorized a revised design for Phase 3 of the landfill was approved on September 18, 2001. The proposed date of closure was not a criteria that was germane to the Director's basis for approval of that modification.*

Comment 17: "The permit terms and conditions, to include but not limited to those at Module F, do not meet the terms of the Land Ban, the ORC and OAC and are otherwise unreasonable and unlawful."

Ohio EPA Response: *Absent specific information in the City's comment that would indicate how the referenced permit conditions do not meet requirements of the Land Ban, Ohio EPA has no basis to conclude that the permit is unreasonable and unlawful.*

Comment 18: "Condition F.1(b) that begins: "Permit Condition F.1(a) and F.2 must not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34." This part of the condition and the condition as a whole makes no sense or is not specific enough. What is it that the agency is trying to do? What is allowed? What isn't?"

Ohio EPA Response: *This condition clarifies that generator activities at this facility are not governed by the hazardous waste installation and operation permit but instead are regulated by the generator rules. As a result, the permit condition clarifies that this permit condition does "not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34."*

Comment 19: "The use of K061 (and other wastes) as treatment chemical should be prohibited.

Question: **The permittee is using K061 to treat other wastes. What provision of the Land Ban rules allows K061 as a treatment chemical? For which waste is this allowed?**

Question: **What tests has Ohio EPA or US EPA done to determine the long term efficacy of hazardous wastes treated with K061?"**

Ohio EPA Response: *There are no prohibitions in Ohio Administrative Code Chapter 3745-270 to mixing compatible listed wastes and treating the mixture within a treatment process. The requirement that must be met is that the treated batch must meet the LDR treatment standards for all wastes in the mixture at the point of compliance. K061 is not the sole active reagent in treating other wastes. Ohio EPA does recognize, by ESOI's admission, that K061 does have desirable properties that will work in conjunction with other reagents to effect treatment. U.S. EPA and Ohio EPA view this as a desirable by-product of the waste because it reduces the volume of reagent and therefore the volume of waste being disposed of in a cell.*

Comment 20: "Attached is a letter submitting comment to the US EPA. Those comments also apply to the Ohio Permit.

Question: **Does the Ohio EPA agree that the K061 is treated a narrow pH band, about pH 10, in order to pass the TCLP?"**

Ohio EPA Response: *Ohio EPA does agree that the probability of successful treatment is correlated with the TCLP extract pH. Ohio EPA's investigation of ESOI's treatment process (as summarized in the Bin Mix report, 2001) indicated that when the final pH of the TCLP extraction fluid used to test the waste is between 8.5 to 11, the probability of successful treatment was high. Outside of extraction fluid pH range the probability of successful LDR treatment diminished.*

Furthermore, a report prepared for the City of Oregon (Analysis of Tracker Data on Envirosafe's Chemical Stabilization Process (Feb. 2000), by Dr. Rakesh Govind of the University of Cincinnati, indicated that successful treatment pH range can also vary as a function of the waste's % free lime. For example, wastes that had little free lime content had a narrow extract pH range of 8.8 to 10.9 where waste was determined to be successfully treated compared to wastes that had higher free lime content (>8% free lime) where the extract pH range was approximately 7.8 to 11.5. Ohio EPA does not agree that successful treatment can be solely predicted or based upon a single pH value or even a narrow range of values. For this reason, Ohio EPA has denied ESOI the use of extraction pH as an indicator of successful treatment. ESOI must perform the TCLP extraction and analyze the extract as required in ESOI's permit and the LDR rules to determine whether treatment has been successful.

"Question: Is cell M a mono-cell receiving only K061?"

Ohio EPA Response: *No.*

"Question: What is the current pH in the sub-cells of Cell M? What is the historic trend of pH in these sub-cells?"

Ohio EPA Response: *The most current data that DHWM has on leachate pH values comes from the 2004 annual report submitted by the facility. The pH values for each sub-cell are listed in the following table.*

Year	M1	M2	M3	M4	M5	M6
2004	8.40	8.8	11	12.3	12.91	9.4

The table shows that pH values differ between sub-cells. The combination of having differing wastes deposited in each sub-cell, which were deposited at varying times, may account for some of the differences in pH values. It should be noted that each sub-cell has pH values in alkaline pH range. In addition, sub-cells that have been inactive for some period of time (e.g. sub-cell M1) have more neutral pH values than more active sub-cells (e.g. M5).

The time-series data show that pH values are relatively stable for each sub-cell. Older, inactive sub-cells, such as M1, have lower more neutral leachate values compared to more alkaline values observed in more recently active sub-cells. For each sub-cell there does not appear to be a strong trend in pH values. Sub-cells M4, M5 and M6 do display an initial upward trend as the sub-cells were filled, but once waste has been established the pH data tend to stabilize over a narrow pH range.

"Question: What is the current level of each dissolved metal in the leachate in the sub-cells of Cell M? What is the historic trend of metal in these sub-cells?"

Ohio EPA Response: *The most current data that DHWM has on leachate chemistry values comes from the Permittee's 2004 annual report. Chemical parameters for metals are required to be reported in ESOI's annual leachate analysis. In general, the data for metals (cadmium, lead, and chromium) do not display any general trend. The metals data for each sub-cell do show a high degree of variance through time but do not display a consistent trend.*

Comment 21: "The comments in the letter to the US EPA regarding ambiguous language are applicable to the Ohio EPA permit. At term F.5, there are nearly identical terms as in the federal permit which are reviewed. These are given as examples. But, this problem occurs over and over and over and over again in the permit's many sections and all through out the Part B. These must all be corrected."

Ohio EPA Response: *The language in Permit Condition F.5(a)(i) in question (i.e.,"significant cracks") is taken directly from the regulatory requirements for containment building operating standards (OAC rule 3745-205-101(C)). Absent any other specific instances of "ambiguous language," Ohio EPA has no basis to make any changes to the permit.*

Comment 22: "All records and tests required in the permit should be submitted to the Ohio EPA and made public record. Those that must be redacted for confidential information can be redacted."

Ohio EPA Response: *Any record kept by Ohio EPA is a public record unless release of the record is prohibited or otherwise exempted by state or federal law.*

Comment 23: "All reports, letters, etc. should be submitted in both hard copy and electronic format."

Ohio EPA Response: *The form in which Ohio EPA maintains its records is within the discretion of the Agency.*

Comment 24: "The draft permit, which includes the Part B application, is internally inconsistent. As just one example, the permit at F. 10 and F.11 sets out that there is macro-encapsulation and micro-encapsulation. But, throughout Appendix I the terms "micro-" and "macro-" are struck out."

Ohio EPA Response: *As a point of clarification, Ohio EPA believes the commenter is referring to Section I of the permit application and not "Appendix I" - Section I includes language as described in the comment. Although the language in Section I does indicate that the terms "micro-" and "macro-" have been stricken, Ohio EPA does not view this as an inconsistency with the draft permit. The term "encapsulation" is sufficiently broad to incorporate both micro and macro encapsulation. No changes were made to the permit.*

Comment 25: "The permit, which includes the Part B application, cites to the wrong or nonexistent terms."

Ohio EPA Response: *Absent specific information in the City's comment that would indicate which permit conditions cite to wrong or nonexistent terms, Ohio EPA has no basis to make any changes to the permit.*

Comment 26: "The permit terms and conditions, to include but not limited to those at Module J 'Cell M,' do not meet the terms of the ORC, OAC, and federal law and are otherwise unreasonable and

unlawful."

Ohio EPA Response: *Absent specific information in the City's comment that would indicate how the referenced permit conditions do not meet the applicable legal requirements, Ohio EPA has no basis to conclude that the permit is unreasonable and unlawful.*

Comment 27: "Section "J" and the accompanying Part B sections are inaccurate and misleading. The history of construction failures should be accurately documented; as examples, the bubbles, liner wrinkles, liner repairs, the crushing of the secondary leachate pipes."

Ohio EPA Response: *Ohio EPA disagrees. These issues mentioned have been raised and satisfactorily addressed and form no basis to conclude that issuance of this permit is unwarranted.*

Comment 28: "The engineer drawings show the liner lying flat, directly on the smooth clay. Yet ESOI reported repeated instances of water under the liner:

Question: **Was the liner designed to have a layer of water between it and the clay?**

Question: **Why don't the "as constructed" drawings show this water?**"

Ohio EPA Response: *The liner was not designed to have a layer of water between it and the clay. It is not detailed on the "as constructed" drawings because the landfill was not constructed as such. This issue mentioned has been satisfactorily addressed and forms no basis to conclude that issuance of this permit is unwarranted.*

Comment 29: "The permit and regulations required that an engineer <u>certify</u> the landfill components were correctly installed. In the Permit Modification, Mannik and Smith contradict this certification. The modification states that correct installation is an 'Assumption.'

The manufacturer's and ASTM's specifications require that pipes be placed in a trench. It required that gravel be hand tamped under the haunches of the pipe. All design procedures assume that it was placed in a trench. The photographs of construction show no trenches were constructed. Instead the leachate collection pipes were simply laid out on the liner without trenches. The photographs and records of construction show no gravel hand tamped under the haunches. Instead a photograph documents that a bulldozer simply spread the gravel.

The assumption that a bulldozer spreading gravel is the equivalent of trained personnel hand tamping the haunches of a trenched pipe is not an "assumption." It is a violation of the construction requirements. This construction compounded original serious design flaws.

The leachate collection system is a redundant system to collect leachate. The primary component is the leachate collection pipes. The secondary system is the gravel layer surrounding the pipe.

Question: **What is the required design life of the leachate collection pipes?**

Question: **Is a redundant system, as described, required?**

Question: **How much money does the agency believe that ESOI saved by (a) not constructing the trenches, (b) not hand tamping the gravel, and (c)**

not repairing."

Ohio EPA Response: *There is no required design life specified in the hazardous waste rules for leachate collection pipes. Furthermore, a redundant system is not specifically required for leachate collection design. Specific design requirements for leachate collection are detailed in OAC Rule 3745-57-03(A)(2). A financial evaluation of different design alternatives was not evaluated in the permit renewal review and is not required by the applicable rules.*

"Agency communications indicate that the leachate collection pipes are now buried underneath the hazardous waste and there is no way to test that they are collapsed or will collapse. It, therefore, concludes there is no proof the pipes collapsed.

Question: If the pipes cannot be inspected, doesn't this indicate a need for heightened caution?"

Ohio EPA Response: *The perforated leachate collection pipes are located on the bottom of the cell to facilitate leachate movement to the leachate removal sumps and were completely imbedded in the granular drainage layer during construction. This granular material is practically incompressible and provides a sound structural environment for the pipes (i.e., transferring stress around the pipe walls) - thus, there is no reason to believe that the leachate collection pipes are crushed or their functionality is compromised. Further, Ohio EPA has evaluated the leachate collection system in light of the vertical expansion and has concluded that the leachate collection integrity will be maintained under the increased waste load. Calculations for leachate collection system pipe integrity are presented within the vertical expansion modification (Volume 2 document entitled "Cell M - Phase 3 Leachate Removal System Pipe Evaluation, December 2003)*

OHIO EPA NOTE: *There was no comment # 30 included in the City's submission. For clarity, Ohio EPA maintained the enumeration for the remaining comments from the City as they were received.*

Comment 31: "The original weight of Cell M was for 80 pcf. The weight actually placed in the landfill was 140 pcf. The original column of waste was about 80 feet. Thus the waste exerted about 6,400 psf on the bottom of the column. At 140 pcf, the column exerts 11,200 exerts psf. In the draft height modification, the column would about double in height and exert about 22,000 pounds per square foot.

Question: What happens to the safety factors in each of the components of the landfill as the weight increases?

Question: Was the landfill initially designed for this greater weight?"

Ohio EPA Response: *The weight and height of disposed waste are only two of several parameters that may (in a different fashion) affect different landfill components. In order to assess their influence, i.e., to see "what happens to the safety factors in each of the components of the landfill as the weight increases", it is best to use appropriate mathematical models. Calculations based on such models and addressing various factors of safety (for settlement, slope stability, buried pipe deflection, etc), which took into account increased weight of waste material and the proposed increase in landfill height, can be found in the Vertical Expansion modification application.*

As noted in the comment, the weight of waste material in Cell M's original design (permit) was 80 pcf. However, calculations included in the Vertical Expansion modification application show that the landfill's integrity and functionality of its components are not compromised when the weight of waste is increased to 140 psf.

Comment 32: "The draft permit, to include the application, fails to adequately protect human health and the environment. It does not meet the requirements that it minimize the risk of sudden or non-sudden releases to the environment at the 1991 permit height (forty feet above grade). The proposed vertical expansion only increases the problems. It is otherwise unlawful and unreasonable."

Ohio EPA Response: *The proposed vertical expansion has been reviewed by staff of Ohio EPA and found to meet the applicable requirements of the ORC and OAC.*

Comment 33: "The permit renewal and the permit modification should be denied. Instead, the current landfill should be closed and measures instituted to install protective measures that adequately address the technical deficiencies."

Ohio EPA Response: *Ohio EPA disagrees. The modification permit is protective of human health and the environment.*

Responses to verbal comments made on the record at the City of Oregon Council Chambers, 5330 Seaman Road, Oregon, Ohio, on Tuesday, August 2, 2005, commencing at 7:00 p.m.:

Comments of Marge Brown, Mayor of Oregon

Ohio EPA Response: *Mayor Brown's comments were also submitted in written form. Please refer to Ohio EPA's responses to the City's written comments and comments prepared by the City's consultants, ARCADIS and Dr. Charles A. Moore.*

Comment of Marilyn Cashen

Ms Cashen expressed a general concern of the potential environmental impact of the facility on the City of Oregon and Lake Erie and about "leaks" or migration of contamination off-site.

Ohio EPA Response: *Ohio EPA recognizes that the facility is located in an area near a valued natural resource (Lake Erie). There are several mechanisms detailed in the facility's existing permit that serve to protect human health and the environment. Cell M has been constructed with a double liner design that includes a leak detection system. Ground water (several zones) beneath the site is monitored using around 120 monitoring wells to ensure any unsafe contamination does not migrate off-site. In addition, the facility is required to operate the facility and manage waste in a safe and protective manner.*

The RCRA Corrective Action investigation currently underway at the facility is designed to evaluate past waste management areas of the facility and determine the need for environmental remedies in these areas. Significant work in investigating these areas has been completed (RFI Phase 1) and the results of this work have been made available to the public in various forms. Cell M is constructed with a dual liner system, leachate collection and leak detection. In addition, waste placed in Cell M is treated to minimize contaminate mobility. There is no evidence that contaminants have migrated beyond the liner systems of Cell M, the only active cell at the facility.

Comments of Doris Levy

1) Ms. Levy expressed concerns that nuclear waste had been deposited in Cell M by mistake was a potential threat to human health.

Ohio EPA Response: *There is no evidence of large quantities of radioactive materials being systematically or inadvertently deposited in Cell M. The Ohio Department of Health (ODH) and DHWM performed a study on radiological data from the facility's leachate collection systems. ODH and DHWM designed the study to determine the activity of individual radionuclides in samples taken from each of the closed and operating landfill cells at the facility. The data indicates the radiological activity is predominately due to the presence of potassium-40, a naturally occurring radionuclide. Furthermore, ODH concluded that the levels of radioactivity do not pose a major health risk to the public. However, the Permittee is continuing to monitor radiation activity in leachate collected from Cell M as a precautionary measure.*

2) Ms Levy expressed concerns about the integrity of the landfill cell and that the "...expansion would tear the liner from all the weight..." She also expressed concerns with the possible explosion of chemicals managed at the facility and impacts to the City of Toledo raw water lines that run through the property.

Ohio EPA Response: *Ohio EPA has evaluated the existing cell liner system and components and has determined that the existing structure will adequately support the additional waste volume without compromising the integrity of the cell. The hazardous waste management standards described in the permit application and defined in the permit language are designed to minimize the potential for an explosion or release of hazardous constituents into the environment. The City of Toledo raw water lines are monitored via a system of adjacent monitoring trenches.*

Comments of Joann Schiavone

1) Ms. Schiavone made several references to the facility's compliance history and questioned the basis for issuance of a permit.

Ohio EPA Response: *The director did consider, among other things, the facility's compliance or non-compliance with applicable rules as a basis to issue the draft permit. Ohio EPA found that the facility has the requisite history of compliance.*

2) Ms. Schiavone commented that funds have not been set aside for site-wide clean-up under the Corrective Action program.

Ohio EPA Response: *The facility will be required to provide financial assurance for implementation of corrective measures once those measures have been defined by Ohio EPA.*

3) Ms. Schiavone expressed concerns about delays related to the site-wide investigation under the Corrective Action program.

Ohio EPA Response: *While it is true that certain investigation activities have been delayed, Ohio EPA believes that overall, adequate progress is being made with the investigation. Significant investigative work has been completed (RFI Phase 1) and the results of this work have been made*

available to the public in various forms. Additional work further defining the nature and extent of contamination will be conducted in the near future.

4) Ms. Schiavone references the findings of the TOSC group and the adequacy of bedrock monitoring wells.

Ohio EPA Response: *Ohio EPA's comments on the final TOSC report (which was reviewed by Ohio EPA staff prior to the May 24, 2005 final release date) are included in a March 24, 2005 letter from Lynn Ackerson, Ohio EPA, NWDO to Kirk Riley, TOSC Coordinator. Copies of the letter are available upon request.*

5) Ms. Schiavone asked whether the stainless steel inserts installed in the leachate riser pipes were able to go all the way to the leachate collection sumps and if so, what documents show this.

Ohio EPA Response: *Fourteen out of the total of eighteen riser pipes were retrofitted with the stainless steel pipe inserts. The Permittee submitted reports and "as-built" drawings after installation of the inserts. These reports and as-built drawings show that the inserts have been installed to reach into the leachate collection sumps. These reports for Cell M are dated: October 8, 2001, October 16, 2002, November 3, 2003 and November 3, 2004. These report are available for review upon request. Moreover, the fact that leachate is routinely removed from the sumps is clear evidence of access to the sumps.*

6) Ms. Schiavone asked about the presence of contamination near Otter Creek and the City of Toledo water lines. She also asked about the concentration of these contaminants relative to drinking water standards and whether horizontal migration is occurring.

Ohio EPA Response: *The contamination seen on the northern, mainly pre-regulation portion of the property is from cells and areas of past waste management that were not constructed or operated according to today's standards. Even so, this contamination is largely in upper saturated zones and has never been confirmed in the bedrock aquifer. Specific concentration data can be found in the facility's RCRA RFI Phase 1 report. Based on the results of the investigation to date, there is no reason to believe that there is any threat to human health from contamination migrating off-site.*

7) Ms. Schiavone expressed concerns about the integrity of the leachate collection systems and the impact of the proposed expansion.

Ohio EPA Response: *The perforated leachate collection pipes are located on the bottom of the cell to facilitate leachate movement to the leachate removal sumps and were completely imbedded in the granular drainage layer during construction. This granular material is practically incompressible and provides a sound structural environment for the pipes (i.e., transferring stress around the pipe walls) - thus, there is no reason to believe that the leachate collection pipes functionality is compromised. Further, Ohio EPA has evaluated the leachate collection system in light of the vertical expansion and has concluded that the leachate collection integrity will be maintained under the increased waste load.*

Comment of Robert Gillingham

Mr. Gillingham ask why the vertical expansion is being considered since "multiple incidents of

leakage" have occurred at the site.

Ohio EPA Response: *The Corrective Action investigation underway at the facility is designed to focus on past waste management areas at the site which were not constructed to today's standards. Contaminant migration has been discovered in these areas of past waste management activities and are not associated with the active unit, Cell M. Cell M is constructed with a dual liner system, leachate collection and leak detection. In addition, waste placed in Cell M is treated to minimize contaminate mobility. There is no evidence that contaminants have migrated beyond the liner systems of Cell M.*

Comments of Steve Miller

Mr. Miller noted: "...and it seems to me that this cell was constructed for a certain volume and weight of waste and now they want to double it or at least add considerable weight to it." Further, he asks about the long term integrity of the cell considering the proposed additional weight.

Ohio EPA Response: *Cell M was originally designed in accordance with the requirements of the hazardous waste rules and the "best available technology" (BAT) of the time. Based on the past waste disposal experience, the unit weight of the waste was assumed to be 80 pounds per cubic foot (pcf). The design for the proposed expansion of Cell M now takes into account the disposal of the treated electric arc furnace dust by assessing unit weight of waste in a range between 140 and 150 pcf. Using these numbers, the feasibility study of vertical expansion has been conducted (through appropriate geotechnical analyses) and the calculations have shown that the Cell M's subbase, liner and the leachate collection system are all able to withstand the added weight of waste without the loss of structural integrity or functionality.*

Comments of Tom Hays

Mr. Hays remarked: "...if they don't use the money, eventually it goes back to the governor, goes back to the Ohio EPA rather than being spent here and saved and preserved for the purpose it was meant, the long-term protection of the public."

Ohio EPA Response: *Ohio EPA disagrees. The funds set aside in the irrevocable trust, by law and conditions of the permit, can only be used for closure, post-closure, perpetual care and remedial activities at the Permittee's facility.*

Comment of Paul Lambrecht

Mr. Lambrecht asked "what is in place to protect our community?"

Ohio EPA Response: *There are several mechanisms detailed in the facility's permit that serve to protect human health and the environment. These include but are not limited to design & construction specifications, monitoring requirements and management standards. For example, Cell M has been constructed with a double liner design that includes a leak detection system. Ground water (several zones) beneath the site is monitored using around 120 monitoring wells to ensure any unsafe contamination does not migrate off-site. And, the facility is required to adhere to waste management standards to ensure waste is properly handled to prevent impacts to human health and the environment..*

Comment of Michael Sheehy, Oregon City Council President

Mr. Sheehy commented that the findings of the City's technical experts has been "routinely ignored by the Ohio EPA."

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA staff has reviewed and considered every consultants' report that has been submitted to the Agency. Specifically, with respect to the vertical expansion modification, the Agency addressed the recommendation put forth by City consultants regarding Factor of Safety limits for the slope stability analysis. This was acknowledged by the City's consultants in a letter to the Agency dated February 21, 2005.*

Responses to written comments received from Envirosafe Services of Ohio, Inc.:

Comment 1:

Ohio EPA revised existing permit language to eliminate the word "shall" and replaced it with the word "must". In some cases, the word "**must**" is confusing and may not maintain the original meaning of the permit condition. The following is a list of permit conditions, the modified text and the suggested correction:

1.01 A.1(a)

"… These units **must** not be reactivated for management of hazardous waste."

Change to: "… These units **may** not be reactivated for management of hazardous waste."

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. However, Ohio EPA does not agree that the word "may" is appropriate because it is not consistent with the intent of the condition to prevent reactivation of the units. The language in this condition has been revised to "shall" consistent with the previous permit language and for clarity in meaning.*

1.02 A.4

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, **must** not be affected thereby.

Change to: "… the remainder of this permit, **will** not be affected thereby."

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.03 A.7

It **must** not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce a permitted activity in order to maintain compliance with the conditions of this permit.

Change to: "It **will** not be a defense…"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.04 A.11(b)

Any record, report or other information obtained under the hazardous waste rules or Chapter 3734 of the Revised Code **must** not be available to the public upon the Permittee's satisfactory showing to Ohio EPA that all or part of the information would divulge methods or processes entitled to protection as trade secrets pursuant to Ohio Trade Secret Law and OAC Rule 3745-50-30.

Change to: "… of the Revised Code **will** not be available to …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.05 B.3(g)

"… A composite sample **must** be acceptable only if it is composed of subsamples of the same WSID. Shipments containing multiple WSID's may require multiple composite samples. One hundred percent of the drums must be opened and inspected for free liquids prior to disposal."

Change to: " A composite sample **will** be acceptable only if it is …"

Ohio EPA Response: *Ohio EPA agrees, use of the word "must" in this condition is confusing. The language in this condition has been revised to "shall" for clarity and consistency.*

1.06 B.3(k)(iii)(c)

" For each sequence of 5, 10 or 20 "on-specification" batches treated, it **must** be acceptable to collect a sample from the "on-specification" batch immediately preceding or immediately following the numerical batch in the sequential count specified to be tested.

Change to: " …batches treated, it **will** be acceptable to collect a sample …"

Ohio EPA Response: *Ohio EPA agrees, use of the word "must" in this condition is confusing. The language in this condition has been revised to "shall" for clarity and consistency.*

1.07 B.37(g)

Any excess monies remaining in the closure trust fund after the entire facility has been closed and certified in compliance with the applicable Ohio hazardous waste rules, **must** be transferred to the post-closure trust fund with the approval of Ohio EPA.

Change to: "… waste rules, **may** be transferred to the post-closure trust …"

Ohio EPA Response: *Ohio EPA does not agree that use of the word "must" in this condition is confusing or has changed the meaning of the language. No change has been made to the permit.*

1.08 C.1(d)

Permit Conditions C.1(a) and C.2 **must** not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34.

Change to: "… Conditions C.1(a) and C.2 **do** not apply to the …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.09 D.1(a)

"…The Permittee **must** store in tanks only the EPA hazardous waste numbers specified in the permit application and summarized below:"

Change to: "The Permittee **may** store in tanks only …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised - see Comment #16 and associated response.*

1.10 D.1(b)

The provision of Permit Condition D.1(a) **must** not apply to the Permittee's activities as a generator storing hazardous waste in tanks on-site in compliance with the provisions of OAC Rule 3745-52-34.

Change to: "… Condition D.1(a) **does** not apply to …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.11 D.2(b)

The provision of Permit Condition D.2(a) **must** not apply to the Permittee's activities as a generator treating hazardous waste in tanks on-site in compliance with the provisions of OAC Rule 3745-52-34.

Change to: "… Condition D.2(a) **does** not apply to …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.12 D.3(a)

The Permittee **must** construct tanks S-4, S-5, S-6, and S-7 in accordance with Section D of the

permit application.

Change to: "The Permittee **may** construct tanks S-4, …"

Ohio EPA Response: *Ohio EPA agrees, use of the word "must" in this condition is confusing. The language in this condition has been revised to "shall" for clarity and consistency.*

1.13 F.1(b)

Permit Conditions F.1(a) and F.2 **must** not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with OAC Rule 3745-52-34.

Change to: "… Conditions F.1(a) and F.2 **does** not apply …"

Ohio EPA Response: *Use of the word "must" in this condition of the draft permit was inadvertent. The language in this condition has been revised to "shall" for clarity and consistency.*

1.14 J. MODULE HIGHLIGHTS

Site Staging Area O is located within the active area(s) of Cell M. Area O has a total staging capacity of 1,200 cubic yards. Also, some treatment processes (e.g., solidification, stabilization) **could** occur within the landfill as described in Section D of the permit application.

Change to: "… **may** occur within the landfill as described in Section D …"

Ohio EPA Response: *Ohio EPA believes changing to the word "may" in lieu of "could" in this module's highlights language is not needed to clarify intent and is therefore unnecessary. No change has been made to the permit.*

1.15 J.2(b)

"…In-situ density tests **must be** required to verify the desired degree of compaction. Any construction utilizing earthfill must be in accordance with Appendix D.6 of the permit application. The material must be brought to the proper water content."

Change to: "… density tests **are** required to verify …"

Ohio EPA Response: *Ohio EPA agrees with the suggested language change. The language of the final permit language for this condition has been revised to "are".*

1.16 J.2(c)

The Permittee **must require** leak testing and certification of the entire length of each seam in each synthetic liner, including caps, sump welds, and connections, by vacuum box, unless an equivalent or more rigorous test method is used.

Change to: "… Permittee **must** ~~require~~ **perform** leak testing and …"

Ohio EPA Response: *Ohio EPA agrees with the suggested language change. The language of the final permit language for this condition has been revised as suggested.*

Comment 2:

B.3(c)

The Permittee must verify the analysis of each waste stream annually or within 60 days following the anniversary of the acceptance of the first shipment of the waste from the same generator as part of its quality assurance program, in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the director. At a minimum, the Permittee must maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee must inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this permit.

Change to: "… If the Permittee uses a contract laboratory to perform analyses, then the Permittee must **either** inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this permit **or verify by reviewing the laboratory report that the appropriate EPA Publication SW-846 method(s) were used and that the analysis meets the requirements of this permit.**"

Reason: Analysis results acceptable for use in meeting the requirements of Permit Condition B.3(a) [Update Analysis] are often obtained from the generator. Contractual agreements with ESOI's customers typically require the generator to bear the cost of obtaining an annual update analysis.

Ohio EPA Response: *To be clear, irrespective of any contractual agreements the Permittee may have, it is the Permittee's obligation to verify analysis of waste streams as outlined in the condition. The language in the condition pertaining to contract laboratories is specific to laboratories the Permittee would possibly use for analytical services to assure off-site labs operate in accordance with the waste analysis condition. It is not the intent of the permit to "reach-out" to generators. However, if the Permittee is relying on the generator's analytical information to meet its obligation under the condition, the Permittee must obtain the necessary information to assure confidence in the results. No change has been made to the permit.*

Comment 3:

B.3(d)

For each hazardous waste stream, the Permittee must obtain from the generator a Waste Product Questionnaire (WPQ) as found in Appendix C.1 of the permit application before accepting waste for treatment, storage and/or disposal.

Change to: "…Waste Product Questionnaire (WPQ) **such** as found in Appendix C.1..".

Reason: The WPQ form in Appendix C.1 is an example of Envirosafe's current WPQ form.

Generators often use older versions of the standard forms when submitting information about new waste streams. More recent and/or older versions of the WPQ form should be acceptable for use by generators. The information on the forms is reviewed by Ohio EPA during the WPR process; if the forms or the information on the forms is inadequate, Ohio EPA can require changes to be made prior to, or as a condition of, approval of the waste material for acceptance at ESOI.

Ohio EPA Response: *It is Ohio EPA's expectation that the Permittee accept only the authorized WPQ found in Appendix C.1 of the permit application. Older versions of the forms may not include certain information or ask for it in a way that is inconsistent with the approved form. Asking generators to use the approved form should not be a significant burden considering that the form is readily available on the Permittee's web site. No change has been made to the permit.*

Comment 4:

B.5(c)(ii)

The Permittee must monitor and inspect each scale and surrounding area for structural integrity, cleanliness, and to assure that there are no obstacles or other blockages. Each inspection must include the removal of all scale deck plates to ensure that all scale beams, load cells, etc., are free of structural damage (e.g., broken load cells, etc.) and obstructions (e.g., waste, treatment reagents/additives, ice, etc.) that could result in measurement errors. Any structural damage or obstacles identified during the inspection must be repaired or removed prior to the next use of the affected scale(s).

Change to: "… ~~Each inspection must include the removal of all scale deck plates to ensure that all scale beams, load cells, etc., are free of structural damage (e.g., broken load cells, etc.) and obstructions (e.g., waste, treatment reagents/additives, ice, etc.) that could result in measurement errors.~~ Any structural damage or obstacles identified during the inspection **that would affect the accuracy of the scale readings** must be repaired or removed prior to the next **commercial** use of the affected scale(s)."

Reason: It is not possible to pull the deck plates off the main outdoor scales at ESOI, as they are welded in place. The Containment Building scales require a crane to be used to pull off the large, one-piece deck plates. This is clearly an operation that cannot be performed on a weekly basis, nor is it recommended by the manufacturer of the scales as a method to inspect under the decking, which can be seen by looking underneath the scale. The weekly inspections performed by ESOI are sufficient to identify damage or obstructions to the scales so that a scale can be taken out of service if it is damaged and any necessary repairs can be made prior to placing it back in service. Some cosmetic damage to the scales may be noted in the weekly inspections; however, it is not necessary to take the scale out of service for cosmetic damage that does not affect the accuracy of the readings.

Ohio EPA Response: *Based on the information provided in the response, Ohio EPA believes there is a sound basis for revising the permit language in question. The final permit has been revised as suggested with the exception of the addition of the word "commercial". The Permittee provides no rationale for the inclusion of that word and thus Ohio EPA has no basis for making that change to the condition.*

Comment 5:

B.5(c)(iii)

The Permittee's inspection must include a review of service records for all scale equipment. Any routine testing and verification of the scales required by the equipment manufacturer must be scheduled. Routine testing and verification of the scales must be performed, at a minimum, on a quarterly basis.

Change to: "… Routine testing and verification of the scales **being used for commercial purposes** must be performed, at a minimum, on a ~~quarterly~~ **semi-annual** basis."

Reason: Testing and verification of the scales is presently required on an annual basis. Government verification of the accuracy of the scales is also performed annually. ESOI tests and verifies the accuracy of the scales that are being used in commerce on a voluntary basis at a frequency that is based on the business levels at the site, and presently checks the main scales quarterly. ESOI should not be required to perform quarterly testing when the level of business traffic across the scales does not warrant that frequency of checking. ESOI should not be required to perform quarterly checks of scales that are not being used in commerce. Requiring semi-annual testing of scales being used in commerce is a reasonable compromise.

Ohio EPA Response: *Ohio EPA generally concurs with the notion that frequency of scale use should be used to guide frequency of scale testing and verification and that semi-annual testing is adequate. However, as noted in the previous response, the Permittee has provided no definition of rationale for use of the phrase "commercial purposes". As such, Ohio EPA has no basis for including that phrase in the condition. The permit language has been revised to change the frequency to "semi-annual".*

Comment 6:

B.5(d)(ii)

All secondary gates must be closed and locked unless attended by facility personnel. All main gates must be monitored during regular business hours by persons trained in security procedures. During non-operating hours, proper surveillance must be provided to monitor and control entry onto the active portion of the facility, as required by OAC Rule 3745-54-14(B).

Change to: "… closed and locked unless attended **or actively monitored** by facility personnel…"

Reason: A permit modification to the existing permit condition was approved by Ohio EPA on July 23, 2004 that added the "or actively monitored" language in order to clarify that ESOI is permitted to remotely monitor an open gate in lieu of having an employee personally attend the gate while it is open. ESOI presently uses camera surveillance to allow security guards to monitor the rail gate while it is open. The modified language should be restored to continue this clarification.

Ohio EPA Response: *The suggested language addition is acceptable to Ohio EPA. The final permit has been revised accordingly.*

Comment 7:

B.5(d)(iii)

The Permittee must inspect the facility's two-way radio communications system for proper operation and required maintenance, at a minimum, on a weekly basis. External communication checks must be performed as part of the inspection schedule. Service records for the radio and video surveillance equipment must be checked as part of the inspection.

Change to: "… Service records for the radio and video surveillance equipment**, if any,** must be checked as part of the inspection."

Reason: This permit condition could imply that ESOI is required to have video surveillance equipment, which is not the case. Inspection of video equipment should only be performed if ESOI is actively using such equipment to monitor the facility for compliance purposes.

Ohio EPA Response: *It was not the intent of the permit condition to imply a requirement for video surveillance equipment. To clarify, the permit language has been revised as follows:*

"… Service records for the radio and video surveillance equipment, if such equipment is being used, must be checked as part of the inspection."

Comment 8:

B.5(g)(iii)

The Permittee must inspect records for equipment decontamination records, and chemical compatibility test results for problematic procedures and waste materials on a weekly basis. Problems and deficiencies must be noted on the inspection checklist and in the operating records, and the need for modification of the process must be investigated.

Change to: " ~~The Permittee must inspect records for equipment decontamination records, and chemical compatibility test results for problematic procedures and waste materials on a weekly basis. Problems and deficiencies must be noted on the inspection checklist and in the operating records, and the need for modification of the process must be investigated.~~ **Reserved.**"

Reason: This permit condition is a carryover from the original 1991 permit that was originally intended for treatment in tanks. ESOI is not permitted to perform treatment in tanks and the condition was modified in the May 7, 1996 version of the permit from *"The Permittee shall inspect on a weekly basis records for* ***each tank storage system,*** *equipment decontamination records, and chemical compatibility test results for problematic procedures and waste materials."* to *"The Permittee shall inspect on a weekly basis records for ~~each tank storage system,~~ equipment decontamination records,…"*. This change made the permit condition confusing and unusable (i.e., "inspect records for equipment decontamination records"). This permit condition should be removed entirely.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit accordingly.*

Comment 9:

B.5(g)(vii)

The Permittee must inspect all sumps located within the Stabilization/Containment Building on a daily basis (primarily during 2nd shift operating hours) for the presence of waste and/or liquid accumulation.

Change to: "… on a daily basis (~~primarily~~ **preferably** during 2nd shift operating hours **or after the building has been in sustained active use for the workday**)…"

Reason: The revised wording should eliminate compliance problems for the timing of the inspection, which should be done after the building has been in use and there has been enough activity for significant amounts of liquids or solids to have accumulated in the blind sumps. ESOI should not be expected to perform the inspection during the second shift hours if, for some reason, there has been no significant activity during the previous shift.

Ohio EPA Response: *Ohio EPA agrees that the "2nd shift" language is not necessary and has revised the condition to remove the parenthetical.*

Comment 10:

B.7(b)

The Permittee must provide electrical grounding for all containers and tanks, and transport vehicles during all operations involving the handling of ignitable or reactive wastes.

Change to: "… involving the handling of ignitable or reactive wastes **that could be ignited by static discharge**."

Reason: The word "reactive" has been substituted for the word "combustible" in the original permit condition. There is a subset of RCRA-reactive wastes that may also be ignitable, but not all RCRA-reactive wastes have this characteristic. For example, RCRA-reactive wastes containing low concentrations of cyanide and sulfide are not necessarily ignitable.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 11:

B.7(c)

The Permittee must provide, and require the use of, spark proof tools during all operations involving the handling of all ignitable or reactive wastes.

Change to: "… involving the handling of all ignitable or reactive wastes **that could be ignited by tool sparks**."

Reason: The word "reactive" has been substituted for the word "combustible" in the original permit condition. There is a subset of RCRA-reactive wastes that may also be ignitable, but not all RCRA-reactive wastes have this characteristic. For example, RCRA-reactive wastes containing low concentrations of cyanide and sulfide are not necessarily ignitable.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 12:

B.27

The Permittee must implement those procedures detailed within Section I of the permit application, in accordance with OAC Rules 3745-55-10 through 3745-55-20. In addition, the Permittee must submit to Ohio EPA within ninety (90) days after permit journalization, an updated Section I of the permit application which addresses all the comments outlined in Attachment B of this permit.

Change to: "… updated Section I of the permit application which addresses all the comments outlined in Attachment B of this permit**, including the "Comments Related to Drawings" section**."

Reason: Clarification of the proposed permit language to clearly state the mechanism by which the drawings listed in the "Comments Related to Drawings" section of Attachment B should be formally revised.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 13:

Section C, Module Highlights

… Area O is not a permitted container storage area; and, containers containing hazardous waste can only be stored in this area for a period of 90 days or less.

Change to:"…Area O is not a permitted container storage area; and, containers containing hazardous waste **that are not undergoing treatment** can only be stored in this area for a period of 90 days or less."

Reason: In rare instances, a waste material that is resistant to stabilization treatment that has been stabilized originally and is then re-treated to comply with land disposal restriction standards prior to disposal may need to remain in Area O for an extended period while it is curing (which is part of the treatment process). This permit condition should be clarified to allow such containers to remain in Area O while they undergo extended treatment. ESOI can provide documentation to verify the status of such containers upon request.

Ohio EPA Response: *Ohio EPA does not believe it is appropriate to craft the permit for what is*

being described as "rare instances". The treated waste being stored in Area O is viewed as as-generated waste and is subject to the generator requirements including applicable storage time limitations. If such "rare instances" as described in the comment do arise, the Permittee should consult with Ohio EPA on-site staff to determine an appropriate response.

Comment 14:

C.1(c)

For the purpose of compliance with the capacity limitation of this permit, each container will be considered to be storing an amount of hazardous waste equal to its capacity, regardless of the actual quantity stored in the container.

Change to: "… will be considered to be storing an amount of hazardous waste equal to its capacity, ~~regardless of the actual quantity stored in the container~~ **unless the actual volume stored in the container is stated on the container label**."

Reason: This permit condition could penalize ESOI for storing empty or partially full containers in a storage area. A reasonable compromise is to require ESOI to provide the volume of a partially full container or to identify a container as being empty.

Ohio EPA Response: *Although not opposed to the concept of "actual quantity" for determination of storage amount, Ohio EPA does not believe the permit application adequately describes how actual quantity will be measured. Therefore, the permit language has not been changed. If so desired, the Permittee may propose to include quantity measurement procedures into the application via the permit modification process found in OAC Rule 3745-50-51.*

Comment 15:

C.8(d)

Any gondola or intermodal rail car that is not lined with a polyethylene liner upon arrival at the facility must be rejected by the Permittee.

Change to: "~~Any gondola or intermodal rail car that is not lined with a polyethylene liner upon arrival at the facility must be rejected by the Permittee.~~ **The Permittee must advise the generator to line gondola railcars and intermodal freight containers with a polyethylene liner (or the equivalent) prior to shipment of waste to the facility.**"

Reason: Requiring an unlined railcar to be sent back to the generator in its loaded and unlined condition may result in additional risk to the environment from leakage. ESOI is capable of properly handling waste in a railcar that is not lined. Intermodal railcars do not require liners, as they are generally flatbed cars that carry independent freight containers that can be delivered to their final destination by truck (i.e., "intermodal").

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 16:

D.1(a)

The Permittee may store a total volume of 160,000 gallons of hazardous waste in 8 tanks, subject to the terms of this permit and as detailed in the table below. The Permittee must store in tanks only the EPA hazardous waste numbers specified in the permit application and summarized below:

Change to: "… The Permittee **may** store in tanks only the EPA hazardous waste numbers specified in the permit application ~~and summarized below~~:"

Reason: Waste stored in tanks may exhibit characteristics or have waste codes in addition to the codes listed in the Table. The codes in the Table should be considered to be informational and not binding. For example, waste stored in tanks S-100 through S-400 are occasionally identified as D002 and K061 in addition to the F039 waste code. Oily waste from the old oil pond is usually non-hazardous, but has been identified as D018 in the past and could exhibit other D-code characteristics as determined by a TCLP analysis.

Ohio EPA Response: *Ohio EPA has clarified the language in question as follows:*

"… The Permittee is authorized to store in tanks only the EPA hazardous waste numbers specified in the permit application and summarized below:"

The codes in the table should not be considered information and are binding. Ohio EPA has revised the table to define the authorized waste codes to be consistent with Section D of the permit application.

Comment 17:

D.4(a)

… New tanks at the facility are: S-100, S-200, S-300, and S-400. New tanks as yet to be constructed are: S-4, S-5, S-6, and S-7.

Change to: "…~~New~~ **Existing** tanks at the facility are: S-100, S-200, S-300, and S-400." ~~New~~ **T**anks as yet to be constructed are: S-4, S-5, S-6, and S-7."

Reason: Tanks S-100 through S-400 are existing tanks. It is not necessary to identify the unconstructed tanks S-4 through S-7 as "new" tanks.

Ohio EPA Response: *"New tank" is defined in OAC Rule 3745-50-10 and means a tank system or component that will be used for the storage or treatment of hazardous waste and for which installation has commenced after July 14, 1986. Likewise, an "existing tank" means a tank system or component that is used for the storage or treatment of hazardous waste and that is in operation, or for which installation has commenced on or prior to July 14, 1986. Based on these definitions, the Permittee's tanks (constructed or not) are all considered to be "new". Ohio EPA's preference is to use terms within the permit which are consistent with their regulatory definitions.*

No change has been made to the permit.

Comment 18:

D.6(c)(ii)

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

Change to: "… monitoring and leak detection equipment (e.g., **volume,** pressure or temperature gauges, ~~monitoring wells~~)…"

Reason: There are no "monitoring wells" associated with the existing tank systems.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 19:

D.7(b)

Unless the requirements of Permit Conditions D.7(b)(i) through D.7(b)(vi) are satisfied, the Permittee must close its tank system in accordance with OAC Rule 3745-55-97 and its closure plan if there has been a leak or spill from the tank system, from a secondary containment system, or if a system becomes unfit for continual use.

Change to: "… or if a system becomes unfit for ~~continual~~ use."

Reason: The use of the word "continual" implies that intermittent use might be acceptable. The permit condition can be clarified by deleting the word "continual".

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 20:

E.1

Corrective Action at the Facility

In accordance with OAC Rule 3745-50-10, “waste management unit” means any discernible unit at which solid waste, hazardous waste, infectious waste (as those terms are defined in ORC Chapter 3734), construction and demolition debris (as defined in ORC Chapter 3714), industrial waste or other waste (as those terms are defined in ORC Chapter 6111) has been placed at any time, irrespective of whether the unit was intended for the management of waste or hazardous waste. Such units include any area at a facility at which wastes have been routinely and systematically managed or released. For the purpose of Corrective Action, facility is defined as all

contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA. The terms Interim Measure (IM), RCRA Facility Investigation (RFI), Corrective Measures Study (CMS) and Corrective Measure Implementation (CMI) are defined in U.S. EPA's Corrective Action Plan (CAP)(OSWER Directive 9902.3-2A, May 1994).

Change to: "… Such units include any area at a facility at which wastes have been routinely and systematically managed or released. **As used in this permit, the term "waste management unit" shall be consistent with and equivalent to the term "solid waste management unit" as that term is defined in Section 3004(u) of RCRA. As Corrective Action was initiated under U.S. EPA, the Permittee may continue to use the terms interchangeably throughout the process.** For the purpose of Corrective Action, facility is defined as all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.…"

Reason: This project was initiated under the authority of U.S. EPA and all documents and references to date have used the term SWMU. For consistency purposes and to minimize any confusion, ESOI requests to continue using the term SWMU throughout the remainder of the process. This same request was made and granted in the in the Ohio EPA permit modification to incorporate the Corrective Action Module journalized on January 27, 2004.

Ohio EPA Response: *The language in Ohio EPA's model permit was recently revised to remove the statement referencing Section 3004(u) of RCRA. This was done because "solid waste management unit" is, in fact, not defined in that section. As requested for consistency purposes, Ohio EPA has included language in the final permit noting the equivalency of the terms "waste management unit" and "solid waste management unit."*

Comment 21:

F.2(a)

The Permittee is authorized to treat hazardous waste in the Stabilization/Containment Building at a rate not to exceed 150 tons per hour or no more than 250,000 tons of incoming and on-site generated waste can be processed by the Permittee in any calendar year, whichever is less. The Permittee must treat hazardous waste in the Stabilization/Containment Building in the manner described in Section D of the permit application.

Change to: "… at a rate not to exceed 150 tons per hour or no more than 250,000 tons of incoming and on-site generated waste can be processed by the Permittee in any calendar year~~, whichever is less~~…."

Reason: ESOI is limited to 235,000 tons per year of off-site waste by permit condition B.1(c). F.2(a) provides for processing an additional 15,000 tons of on-site generated waste. It is unlikely that operating at a rate of 150 tons per hour will cause ESOI to process any less than 250,000 tons, since 150 TPH for 8 hours per day for 252 days would result in over 300,000 tons; ESOI operates its stabilization plant two or three 8-hour shifts per day. The "whichever is less" wording of this permit condition implies that a formal comparison or calculation should be made on an annual basis, which is not necessary. The off-site tonnage limit in B.1(c) effectively limits Stabilization/Containment Building throughput.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 22:

F.2(b)(iii)

...bench scale test data that shows the composition of treatment reagents, waste material, or filler materials added to the waste, contact time, operating parameters to be monitored, safety precautions and measures, final product analysis and the rate of the final waste product; and,

Change to: "…safety precautions and measures, final product analysis ~~and the rate of the final waste product~~; and,"

Reason: The wording of this permit condition is confusing and perpetuates an error made in previous version of the Permit. The "rate of the final waste product" is not quantifiable. The original permit condition probably meant to say "fate of the final waste product". This, too is unnecessary information as it is already known that ESOI will dispose of the treated waste in a RCRA secure chemical landfill.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 23:

F.2(b)(iv)

Toxicity Characteristics Leachate Procedure test results, land disposal restrictions, California list requirements, and any other applicable regulatory requirements that the waste must meet prior to its final disposal.

Change to: "… land disposal restrictions, ~~California list requirements,~~ and any other…"

Reason: The California List no longer exists within the Federal RCRA rules.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 24:

F.2(e)

The Permittee may use the stabilization/solidification additives referenced in Appendix C.13 or Volume 7 of the permit application, or may use such other reagents as are deemed necessary to improve a waste handling characteristic or to achieve compliance with a treatment standard specified in OAC Rule 3745-270-40. The Permittee must request authorization from Ohio EPA

(via a Class 1 prior approval modification) for any additions made to this list and submit any relevant technical and analytical data that supports the effectiveness of the treatment additive.

Change to: "… The Permittee must request authorization from Ohio EPA (via a Class 1 ~~prior approval~~ modification) for any additions made to this list …"

Reason: The original Ohio permit condition [F.2(v)] was based on the original Federal permit condition [V.H.2.e.v] that only requires notification to Ohio EPA and U.S. EPA prior to using a new reagent in the stabilization treatment process. Requiring a Class 1A permit modification process unnecessarily slows the process of implementing a new treatment reagent. ESOI is required by draft permit condition F.2(b) to "submit an analytical/treatment report along with the WPR package" to Ohio EPA that would provide all necessary information on the treatment reagents being used. ESOI believes that a Class 1 modification request is adequate to address Ohio EPA's concerns and would allow faster implementation of new reagents when they become available.

Ohio EPA Response: *Ohio EPA disagrees with the proposed change and supporting rationale. Ohio EPA believes it is important to evaluate and proactively authorize any new reagents prior to their use to ensure the material is conducive with the authorized treatment process. In addition, Ohio EPA does not believe the 60 day Class 1 modification process would significantly slow down new treatment reagent implementation. No change has been made to the permit.*

Comment 25:

F.4(e)(ii)

The Stabilization/Containment Building is designed and operated in a manner that assures that waste will not actually come in contact with these openings.

Change to: " The Stabilization/Containment Building is designed and operated in a manner that assures that waste will not ~~actually come in contact with~~ **penetrate** these openings **when they are closed**."

Reason: Permit condition F.5(a)(iv) requires ESOI to operate doors, windows and etc. so there are no visible emissions from these types of openings. It is not possible to design a usable window or door that will not come in contact with the waste being handled in the Stabilization/Containment Building.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 26:

F.4(j)

A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detection failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

Change to: "A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents ~~into~~ **beyond** the **secondary** barrier, and a leak detection**-collection** system that is capable of ~~detection failure~~ of **collecting fluids from** the primary barrier **if that barrier should leak** ~~and collecting accumulated hazardous wastes and liquids at the earliest practicable time~~."

Reason: The wording of this permit condition is confusing. The secondary leak detection and collection systems in the Stabilization/Containment Building have already been designed and installed. The proposed permit condition has been revised to describe what the secondary detection-collection system actually does.

Ohio EPA Response: *The language in question comes directly from the rules for design and operation of containment buildings, specifically OAC Rule 3745-205-101. Ohio EPA believes the language is clear and represents a continuing obligation in terms of maintaining the existing secondary containment system design as constructed. No change has been made to the permit.*

Comment 27:

F.5(a)(iii)(a)

Within fifteen minutes after a hazardous waste transportation vehicle leaves the Stabilization/Containment Building area after exiting the building or unloading waste into the building, the Permittee must inspect the Stabilization/Containment Building entrance apron, or if appropriate, the containment pad used by the vehicle and commence with the removal of any tracked or fallen waste within fifteen minutes of the inspection.

Change to: "… inspect the Stabilization/Containment Building entrance apron~~, or if appropriate, the containment pad~~ used by the vehicle and commence with the removal of any tracked or fallen waste …"

Reason: This permit condition seeks to codify a procedure that ESOI has been following since the implementation of an April 24, 2000 Consent Order. It goes beyond the original requirement by including the containment pads outside doors 121, 122, 125, 126, 127, 133, 134 and 135. These containment pads are designed to catch spillage during the waste off-loading process and are used to decontaminate trucks after they have discharged their waste loads. Because of this, the pads are constantly dirty when they are in use. Requiring that the containment pads be cleaned every 15-30 minutes throughout the working day is unreasonable and could slow site production throughput greatly. The containment pads are attended by ESOI personnel who inspect the pads after each days use and perform cleanup activities as needed. The containment pads are designed to capture spillage and hold it for temporary periods without consequence to the environment. The containment pads should not be included in this permit condition.

Ohio EPA Response: *Ohio EPA agrees that the draft permit language could be clarified in response to the concern identified and has accordingly revised the language as follows:*

"*Within fifteen minutes after a hazardous waste transportation vehicle leaves the Stabilization/Containment Building area, the Permittee must inspect the Stabilization/Containment*

Building entrance apron used by the vehicle and remove all tracked or fallen waste at the time of the inspection. By the end of each day's use, the containment pads around the Stabilization/Containment Building must be inspected and all tracked or fallen waste must be removed at the time of the inspection."

Comment 28:

F.5(a)(iii)(b)

The Permittee must maintain a log that records the inspection of and any actions taken at the entrance aprons and containment pads of the Stabilization/Containment Building.

Change to: "The Permittee must maintain a log that records the inspection of and any actions taken at the entrance aprons ~~and containment pads~~ of the Stabilization/Containment Building."

Reason: Refer to the response for permit condition F.5(a)(iii)(a), above.

Ohio EPA Response: *As noted in the response to Comment # 28, Ohio EPA has revised the permit language to make a distinction between the requirements for the entrance aprons and containment pads. As such, the suggested change is no longer needed. No change has been made to the permit*.

Comment 29:

F.5(f)(iii)

In the event that liquids freeze within a sump, the Permittee must note in the daily inspection log that accumulated materials are in the sump and the time of discovery. The Permittee must immediately remove the accumulated material by thawing the frozen liquid or by other means that will not compromise the integrity of the sump. The Permittee must note in the daily inspection log the date and time the material was removed.

Change to: "… The Permittee must ~~immediately~~ remove the accumulated material by ~~thawing~~ **allowing** the frozen liquid **to thaw** or by other means that will not compromise the integrity of the sump. …"

Reason: Manually force-thawing frozen liquids in a blind collection sump could damage the sump. Frozen material will thaw soon enough on its own and there is no need for "immediate" removal. In discussions with Ohio EPA on-site inspectors during 2004, it was agreed that this was the safest way to remove frozen liquids from collection sumps.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 30:

G. Module Highlights

…The liquids removed from dewatering Trenches 3, 4 and 5 are pumped to an on-site vacuum truck and handled as F039 (leachate). Trench locations can be found on drawing number F20D2A in Volume 8 of the permit application.

Change to: "The liquids removed from dewatering Trenches 3, 4 and 5 are pumped to an on-site vacuum truck and handled ~~as~~ **by placing the liquids along with** F039 (leachate). Trench locations can be found on drawing number F20D2A in Volume 8 of the permit application."

Reason: Trench 3, 4 and 5 liquids are not defined by the RCRA regulations as F039 Multi-Source Leachate. ESOI elects to handle this waste along with its F039 leachate in order to avoid having to perform expensive and time-consuming characterization analyses each time the waste is generated. This procedure defaults the handling of this waste to maximum regulatory protection, what would occur if the waste did test as an actual hazardous waste. However, ESOI would like to maintain its option to recycle these waters or test the waste and determine if it is actually a hazardous waste should disposal or economic conditions change in the future.

Ohio EPA should add a general statement to the permit that all statements provided in the "Highlights" sections of the Permit are for informational purposes only and do not restrict ESOI from managing the facility in another acceptable manner.

Ohio EPA Response: *Ohio EPA views the Module Highlights text as informational in nature. The language does not impose any limitation on how the Permittee may wish to appropriately manage the liquids generated from the trenches. No change has been made to the permit.*

Comment 31:

G.2 Monitoring Trench Constituents List

Within 90 days of permit issuance, the Permittee must submit a Class 1 permit modification, in accordance with OAC Rule 3745-50-51, to include in the permit application, a listing of the various analytical methods utilized to evaluate the constituents listed in Table G-1 below.

Change to: "~~Within 90 days of permit issuance, the Permittee must submit a Class 1 permit modification, in accordance with OAC Rule 3745-50-51, to include in the permit application, a listing of the various analytical methods utilized to evaluate the constituents listed in Table G-1 below.~~"

Reason: ESOI proposes to use a subset of the constituents listed in Table K-1 instead of the proposed Table G.1. In that case, the analytical methods would be the same as those used for the parameters in Table K-1, which have already been disclosed and are included in the Permit Application.

Ohio EPA Response: *As noted in the response to Comment 32, Ohio EPA did not agree that the subset of constituents listed in Table K-1 was appropriate for the trenches. Therefore, the suggested change has not been made to the permit.*

Comment 32:

Table G-1: Monitoring Constituent List

Monitoring Constituent List	Constituent Limit
Volatile Organic Compounds	PQL
Semivolatile Organic Compounds	PQL
Lead (Dissolved)	0.01 mg/L
Cadmium (Dissolved)	0.005 mg/L
Chromium (Dissolved)	0.05 mg/L
Iron (Total)	48.54 mg/L
Manganese (Total)	1.12 mg/L
Gross Alpha	6.4 pCi/L
Gross Beta	11.2 pCi/L
Radium	34.5 pCi/L

Change to:

Monitoring Constituent List	Constituent Limit
~~Volatile Organic Compounds~~	~~PQL~~
~~Semivolatile Organic Compounds~~	~~PQL~~
Acetone	0.01 mg/l
Benzene	0.001 mg/l
Chloroform	0.001 mg/l
1,1-Dichloroethane	0.001 mg/l
1,2-Dichloroethane	0.001 mg/l
1,4-Dioxane	0.05 mg/l
Ethylbenzene	0.001 mg/l

Methylene chloride	0.001 mg/l
Methyl ethyl ketone	0.01 mg/l
Total Phenols	0.005 mg/l
Tetrahydrofuran	0.002 mg/l
Toluene	0.001 mg/l
1,1,1-Trichloroethane	0.001 mg/l
Trichloroethene	0.001 mg/l
Vinyl chloride	0.002 mg/l
Total Xylenes	0.001 mg/l
Cadmium (dissolved)	0.005 mg/l
Chromium (dissolved)	0.05 mg/l
Lead (dissolved)	0.01 mg/l
~~Iron (Total)~~	~~48.54 mg/L~~
~~Manganese~~	~~(Total) 1.12 mg/L~~
~~Gross Alpha~~	~~6.4 pCi/L~~
~~Gross Beta~~	~~11.2 pCi/L~~
~~Radium~~	~~34.5 pCi/L"~~

Reason: The "Volatile Organic Compounds" and "Semi-Volatile Organic Compounds" listed in revised Table G-1 introduce hundreds of new compounds which must be analyzed and compared against PQL as the action limit two times per year. These trenches are not monitoring wells. They intercept and collect surface waters and shallow groundwater at the facility and keep these waters away from the Toledo Waterlines. It is more appropriate for these trenches to be analyzed for the Table K-1 organic constituents, which include all of the organic constituents listed in the original Table G-1. The radiological parameters are no longer monitored in ESOI's groundwater and are of no value as constituents for the Monitoring Trenches (Refer to groundwater monitoring alternate source demonstrations and Ohio EPA correspondence in agreement with the conclusions of those reports). Likewise, these parameters should be dropped from revised Table G-1. Iron and Manganese are indicator parameters which might provide some useful information, but should not have limits associated with them for which actions must be taken. Designating a "Monitoring Trench" to be a "Dewatering Trench" should not be required on the strength of indicator parameters alone. Iron and Manganese should also be removed from the constituent list for revised Table G-1.

Ohio EPA Response: *The monitoring trenches are in place to detect any impacts from nearby units. It is Ohio EPA's view that monitoring for this potential impact should not be limited to a subset of volatile and semi-volatile compounds. It would not be a significant burden for the Permittee to analyze and report this data in that a typical volatile or semi-volatile scan includes all these compounds. Ohio EPA agrees that inclusion of radiological parameters (gross alpha and beta) and indicator parameters (iron and manganese) is not needed and has revised the permit condition accordingly.*

Comment 33:

G.3(a)(i)

If the analysis shows any constituent in Table G-1 at or above the Limit specified for that constituent, then the Permittee must either designate the effected trench as a dewatering trench or withdraw a confirmation sample from the affected trench within 30 days of receipt of the original analytical results by the Permittee.

Change to: "…the Permittee must either designate the ~~effected~~ trench as a dewatering trench or withdraw a confirmation **split-**sample from the affected trench within 30 days of receipt of the original analytical results by the Permittee. **The split sample must be analyzed by two different qualified laboratories.**"

Reason: A waterline trench should be designated as either a "monitoring " trench or a "dewatering" trench. Analysis and evaluation of a Monitoring Trench should be conducted in substantially the same manner as the existing Permit condition. Detection of constituents in a Monitoring Trench should be subject to split-sampling confirmation as is the common practice for contaminant verification.

Ohio EPA Response: *Ohio EPA agrees with the initial part of the comment regarding trench designation and has revised the condition as suggested. However, Ohio EPA does not agree that the suggested additional split-sample confirmation process is needed. The confirmation process included in the permit language should serve as an effective contaminant verification method. No further changes were made to the permit condition.*

Comment 34:

G.3(a)(ii)

If the analysis and the confirmation analysis shows any constituent in Table G-1 at or above the Limit specified for that constituent, then the Permittee must designate the affected trench as a dewatering trench.

Change to: "If ~~the analysis and the~~ **both** confirmation ~~analysis~~ **analyses** ~~shows~~ **show** any constituent in Table G-1 at or above the Limit specified for that constituent, then the Permittee must designate the ~~affected~~ **monitoring** trench as a dewatering trench."

Reason: Analysis and evaluation of the Monitoring Trenches should be conducted in substantially the same manner as the existing Permit condition. Detection of constituents in a Monitoring

Trench should be subject to split-sampling confirmation as is the common practice for contaminant verification. A waterline trench should be designated as either a "monitoring " trench or a "dewatering" trench.

Ohio EPA Response: *As noted in the response to Comment 33, Ohio EPA concurs with the part of the comment regarding trench designation and has revised the condition as suggested. Ohio EPA does not agree that the suggested additional split-sample confirmation process is needed as noted previously. No further changes were made to the permit condition.*

Comment 35:

G.4(a)(i)

the cell boundaries for potential degradation and/or damage to the liner;

Change to: "the ~~cell~~ **waterline easement** boundaries for potential degradation and/or damage to ~~liner~~ **cover systems of nearby waste management units**;"

Reason: The wording of this permit condition is confusing. It is not possible to see the actual liner system under the protective soil cover (the cap). The suggested revision more clearly describes what is to be inspected.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 36:

G.4(b)

In the event that degradation and/or damage to the cell boundaries or liner system on the cells adjacent to the City of Toledo Waterlines, erosion or damage to the monitoring trench cap, or damage to the collection sumps, is observed during the weekly inspections required by Permit Condition G.4(a)(i) through G.4(a)(iii), the Permittee must immediately notify Ohio EPA and make necessary repairs within 30 days.

Change to: " In the event that degradation and/or damage to the ~~cell~~ **cover systems of nearby waste management units along the waterline easement** boundaries ~~or liner system on the cells adjacent to the City of Toledo Waterlines~~,…… the Permittee must ~~immediately~~ notify **the on-site** Ohio EPA **inspector**, **document the problem on the inspection form** and make necessary repairs within 30 days."

Reason: It is not possible to see the actual liner system under the protective soil cover (the cap). The suggested revision more clearly describes what is to be inspected. The nature of potential problems that are likely to be detected by weekly Waterline inspections do not warrant "immediate" notification to Ohio EPA. The on-site Ohio EPA inspector should evaluate the situation and determine if further notification is required.

Ohio EPA Response: *Ohio EPA agrees with the initial part of the comment with respect to*

evaluation of nearby waste management units and has revised the condition as suggested. To clarify notification requirements, the word "immediately" was replaced with "within 24 hours". Also, the suggestion to require the notification to be specifically made to an on-site inspector did not seem practical since on-site staff are not always available (e.g., weekends) and was not added to the permit. The suggested language on documentation on the inspection form was included in the final permit.

Comment 37:

G.4(c)

In the event that evidence of leakage from the waterlines is observed during the weekly inspections required by Permit Condition G.4(a)(iv), the Permittee must immediately contact the City of Toledo and Ohio EPA.

Change to: "… leakage from the waterlines is observed during the weekly inspections required by Permit Condition G.4(a)(iv), the Permittee must ~~immediately~~ contact the City of Toledo and **the on-site** Ohio EPA **inspector**."

Reason: The nature of potential problems that are likely to be detected by weekly Waterline inspections do not warrant "immediate" notification to Ohio EPA. The on-site Ohio EPA inspector should evaluate the situation and determine if further notification is required. The City of Toledo will be notified of leakage in accordance with the Waterline Agreement.

Ohio EPA Response: *To clarify notification requirements, the word "immediately" was replaced with "within 24 hours". Also, the suggestion to require the notification to be specifically made to an on-site inspector did not seem practical since on-site staff are not always available (e.g., weekends) and was not added to the permit.*

Comment 38:

G.5(a)

For monitoring trenches, the Permittee must submit a monitoring trench report (due 30 days after receipt of all analytical data and statistical analysis required by Permit Condition G.3) to Ohio EPA and City of Toledo. The report must contain the analytical results from the constituents listed in Table G-1.

Change to: "… monitoring trench report (due 30 days after receipt of all analytical data and ~~statistical analysis~~ **data evaluation** required by Permit Condition G.3)…"

Reason: The evaluation of the waterline Monitoring Trench data by comparing the results to the limits listed in Table G-1 of the Permit does not involve any statistical analysis.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 39:

Module I – Post-Closure Care, Cell G

…The second and final phase of the closure as initiated upon receipt of the final waste on June 9, 1994. Ohio EPA approved the final closure of Cell G on July 13, 1995. Documentation relevant to Cell G is provide in Appendix G of the Description of Current Conditions, revised March 23, 2001.

Change to: "… Documentation relevant to Cell G is ~~provide~~ **provided** in Appendix G of …"

Reason: Typographical error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 40:

Module I – Post-Closure Care, Cells H and I

… The double composite liner system included a primary system (two feet of recompacted clay and 80 mil synthetic liner on the base of the cell and 80 mil synthetic liner along the sideslopes) overlain on an independent secondary system (three feet of recompacted clay and 60 mil synthetic liner). Documentation relevant to Cell I is provide in Appendix I of the Description of Current Conditions, revised March 23, 2001.

Change to: "… Documentation relevant to Cell I is ~~provide~~ **provided** in Appendix I of the Description of Current Conditions,…."

Reason: Typographical error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 41:

I.2(b)

The Permittee must maintain and monitor the ground water monitoring system and comply with all other applicable requirements of OAC Rules 3745-54-90 through 3745-54-100during the post-closure period. Ground water must be monitored in accordance with Module K, Integrated Ground Water Monitoring Program.

Change to: "… requirements of OAC Rules 3745-54-90 through 3745-54-**100 during** ~~100during~~ the post-closure period.…"

Reason: Typographical error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language*

accordingly.

Comment 42:

I.2(d)(iii)(b)

The facility must be inspected monthly or after every major rainfall (approximately two inches per eight hour period). Erosion or pooling of water must be corrected.

Change to: "… after every major rainfall (~~approximately~~ two **or more** inches per eight hour period).…"

Reason: The wording of this permit condition is confusing. For consistency with similar permit conditions, the word "approximately" has been removed.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 43:

I.2(d)(v)(a)

Grass cutting must be performed as needed, but at least annually. Damaged or dead vegetation must be removed and replaced with equivalent vegetation. No trees, shrubs, or other deep rooted plants must be allowed to grow on closed waste units. Areas damaged by erosion must be repaired and revegetated. The Permittee must remove trees, shrubs or other deep-rooted plants in the fall quarter of each year. The Permittee must notify an Ohio EPA on-site inspector verbally, by letter, or by telephone at least 48 hours prior to beginning the vegetation removal efforts. Any damage to the closed waste unit cover system caused by the growth or removal of trees, shrubs or other deep-rooted plants must be promptly repaired.

Change to: "… The Permittee must notify an Ohio EPA on-site inspector verbally, by letter, or by telephone ~~at least 48 hours~~ prior to beginning the vegetation removal efforts. **If no Ohio EPA on-site inspector is available, Ohio EPA will be notified at least 48 hours beforehand.**…"

Reason: During the season that this vegetation is removed, an employee may become available to perform this work on short notice. ESOI would like to be able to take advantage of available workforce, and should be able to do so without making a 48-hour notification when an Ohio EPA inspector is on-site or can be reached by telephone.

Ohio EPA Response: *The 48 hour notification requirement was included to assure that on-site staff have sufficient notice for scheduling oversight of such activities . The suggested revised language eliminates this advanced notice for on-site staff and is unacceptable to Ohio EPA. To address the Permittee's concern about flexibility to use available workforce, the following language was added to the final permit:*

"...to beginning the vegetation removal efforts. On-site staff, at their discretion, can exempt the Permittee from the 48 hour notification requirement."

It is envisioned that onsite staff may use this option if they are available to oversee activities before the 48 hour period is over or, do not think oversight is required in a particular situation.

Comment 44:

J.1(d)(v)

polychlorinated biphenyls (PCBs) regulated by the Toxic Substances Control Act (TSCA) (> 50 ppm);

Change to: " polychlorinated biphenyls (PCBs) regulated by the Toxic Substances Control Act (TSCA) (**>** **greater than or equal to** 50 ppm);"

Reason: Typographical omission.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 45:

J.1(d)(xiii)

any wastes exhibiting a flashpoint below 100 degrees Fahrenheit.

Change to: "… any **liquid** wastes exhibiting a flashpoint below 100 degrees Fahrenheit…."

Reason: Solid waste materials cannot be tested by the SW-846 Method designated for determining flashpoints. Solid waste materials tested by ESOI's proprietary method for determining a "flashpoint" in a solid material should still be acceptable for disposal in accordance with Sections C and D of the Part B Permit Application.

Ohio EPA Response: *In accordance with Permit Condition J.1(d)(i), the Permittee is already prohibited from disposal of waste containing any free liquids. Thus, Permit Condition J.1(d)(xiii) is specific to solid waste materials. To clarify the intent of the permit language, a reference to Sections C-2(f)(11) through C-2(f)(13) of the permit application has been included in the final permit.*

Comment 46:

J.1(d)(xiv)

any waste that will not achieve after 4 weeks of placement and maintain thereafter a minimum shear strength of 2000 pounds per square foot.

Change to: "any waste that will not achieve**, by itself or by being mixed at the time of disposal with other treated or untreated wastes,** ~~after 4 weeks of placement and maintain thereafter~~ a minimum shear strength of 2000 pounds per square foot **after 4 weeks of curing time and maintain this minimum strength thereafter**. **Compliance with this permit condition is to be**

determined in accordance with J.2(s)."

Reason: The wording of this permit condition could be interpreted such that Envirosafe might not be permitted to accept any waste that would not be treated by stabilization or had not been laboratory tested to determine if it met shear strength requirements on its own physical merits. In addition, the use of the word "placement" is not appropriate for this permit condition as the curing process slows in low temperatures such as are common during the winter. The permit condition has been revised to meet the requirements of J.2(s) and to state that compliance is to be determined in accordance with J.2(s).

Ohio EPA Response: *The condition in question speaks to restrictions on disposal in the cell, not acceptance. As such, Ohio EPA does not agree that the wording could be interpreted as suggested in the comment. Ohio EPA agrees that a reference to permit condition J.2(s) is appropriate and has revised the permit accordingly.*

Comment 47:

J.2(q)

For each phase of landfill construction, the Permittee must have an independent, qualified, registered professional engineer monitor and examine the construction and certify, in accordance with OAC Rule 3745-50-42(D)(1), that construction is in accordance with the document, statements, designs, and plans contained in the permit application and the terms and conditions of this permit. Said engineer must be selected and paid for by the Permittee and approved by Ohio EPA.

Change to:"… Said engineer must be selected and paid for by the Permittee and approved by Ohio EPA **(DHWM Engineering Section, or equivalent)**.".

Reason: Establish the method of approval of the Professional Engineer consistent with past practices.

Ohio EPA Response: *How Ohio EPA internally evaluates/approves the Professional Engineer does not need to be detailed in the permit terms and conditions. No change has been made to the permit.*

Comment 48:

J.2(r)

Within 30 days of the effective date of this permit and prior to beginning construction activities related to the vertical expansion modification, the Permittee shall submit revised plan drawings, cross sections and related details in accordance with the compound slope specifications as outlined in their February 10, 2005 revised slope stability calculations. The revised drawings and design specification must be consistent with the slope factor of safety requirements specified in Permit Condition J.2 (o)(iv) above. Within this same period the Permittee must also submit revised application pages for all other sections of the vertical expansion modification (received by Ohio EPA on January 22, 2004) that are affected by the February 10, 2005 submission (e.g.,

settlement calculations, surface drainage, etc.). The information required by this condition must be submitted as a Class 1 permit modification requiring director's approval (Class 1A) in accordance with OAC Rule 3745-50-51.

Change to: "~~Within~~ **At least** 30 days ~~of the effective date of this permit and~~ prior to beginning construction activities related to the vertical expansion modification, the Permittee shall submit revised plan drawings, cross sections and related details in accordance with the compound slope specifications as outlined in their February 10, 2005 revised slope stability calculations….".

Reason: ESOI assumes that the revised wording of this permit condition does not preclude early submittal of the required plan drawings and the permit modification request. This permit condition should be comparable with the existing permit condition A.26(a)(i)(a), which required ESOI to submit construction level drawings 30 days prior to the anticipated date that construction would begin.

Ohio EPA Response: *The permit condition in question was specifically designed to update the modification application to be consistent with the revised slope design information in the February 2005 submission. Thus, it is appropriate for this information to be updated within 30 days of final permit issuance. The language does not preclude early submission of this information. No change has been made to the permit.*

Change to:"… The ~~information~~ **revised application pages** required by this condition must be submitted as a Class 1 permit modification…"

Reason: The statement that "the Permittee must also submit revised application pages" separates the requirement to submit revised drawings from the requirement to submit revised application pages. This change clarifies that only the revised application pages, not the plan drawings, are to be submitted as a Permit modification.

Ohio EPA Response: *Revised application pages as well as updated drawings are to be submitted as a part of the Class 1A modification. Therefore, the language of the draft permit is appropriate. No change has been made to the permit.*

Change to:"… required by this condition must be submitted as a Class 1 permit modification ~~requiring director's approval (Class 1A)~~ in accordance with OAC Rule 3745-50-51**(D)(1)(a)**.".

Reason: A Class 1 modification submitted in accordance with OAC 3745-50-51(D)(1)(a) could be considered to be adequate for submitting the revised application pages as long as they are consistent with the requirements of the approved Permit. This type of modification is pre-classified as Class 1 in OAC 3745-50-51, Appendix: B.1, "Administrative and informational changes".

Ohio EPA Response: *Through issuance of this final permit, Ohio EPA has classified the modification as a Class 1 requiring prior Director's approval and retains the right to review the revised drawings and application information to ensure consistency with permit requirements prior to commencement of construction. No change has been made to the permit .*

Comment 49:

J.3(a)

The level of leachate accumulation on the primary synthetic liner, excluding the sumps, must not exceed the height of one foot, as required by OAC Rule 3745-57-03(A)(2), except for temporary excursions in Cell M following a precipitation event. A precipitation event which would trigger a temporary excursion is defined as 0.7 inches of rainfall (or more) as measured in 24 hours when preceded by generally dry conditions. Any new storm event of 0.7 inches of rainfall (or more) occurring within 48 hours of a previous event would allow for an extension of the initial excursion.

The Permittee must return to a leachate level of less than one foot in Cell M within 48 hours of the storm event which triggered the temporary excursion.

Change to: "… ~~A precipitation event which would trigger a temporary excursion is defined as 0.7 inches of rainfall (or more) as measured in 24 hours when preceded by generally dry conditions. Any new storm event of 0.7 inches of rainfall (or more) occurring within 48 hours of a previous event would allow for an extension of the initial excursion.~~

The Permittee must return to a leachate level of less than one foot in Cell M ~~within 48 hours of~~ **after** the ~~storm~~ **precipitation** event ~~which~~ **that** triggered the temporary excursion **by operating the pumps in the affected landfill collection sumps up to 24 hours per day, 7 days per week until such time as the level of leachate returns to less than one foot above the primary liner**. **To determine if the level of leachate has returned to normal, it may be necessary to temporarily discontinue operation of the pump to allow the sump area to recharge, stabilize and obtain an accurate reading of the level of leachate.**"

Reason: It is not possible in all cases to return levels of leachate to less than one foot above the liner within set time periods in response to precipitation events. Infiltration rates of precipitation change constantly as waste materials are added to the landfill. Freezing conditions in the winter can prevent infiltration entirely for a time, only to cause massive infiltration from past precipitation events when weather conditions become warmer. ESOI can do no more than operate its pumping equipment up to 24 hours per day, 7 days per week until the level of leachate is retuned to below one foot above the primary liner. This permit condition has been modified in accordance with this limitation.

Ohio EPA Response: *Ohio EPA agrees that the maximum operation of 24 hours per day, 7 days per week is an appropriate response to address leachate excursions. In addition, to proactively address potential excursion events, Ohio EPA is incorporating a requirement into the final permit that the pumps in the primary sumps must be activated when the leachate level is at 10 inches or more. Ohio EPA has revised the condition as follows:*

> *"The level of leachate accumulation on the primary synthetic liner, excluding the sumps, must not exceed the height of one foot, as required by OAC Rule 3745-57-03(A)(2), except for temporary excursions in Cell M following a precipitation event. To minimize the potential for excursions, the Permittee must activate primary system pumps whenever the leachate levels on the liner exceed 10 inches.*

The Permittee must return to a leachate level of less than 10 inches in Cell M after the precipitation event that triggered the temporary excursion by operating the pumps in the affected landfill collection sumps 24 hours per day, 7 days per week."

Comment 50:

J.6(b)

Upon the discovery of leakage, a tear or puncture in the liner system or an imminent hazard of leakage, the Permittee must immediately notify the director and must expeditiously repair the damage. Within seven days after the completion of the repairs, the Permittee must complete and file a "Liner System Repair Report", and "Certification of Liner System Report", into the facility's operating record, both of which must be certified in accordance with OAC Rule 3745-50-42(D)(1).

Change to: "Upon the discovery of leakage~~, a tear or puncture in the liner system~~ or an imminent hazard of leakage, the Permittee must ~~immediately~~ notify the director **in accordance with the RAP** and must expeditiously repair ~~the~~ **any** damage **to the liner system**. **Upon discovery of a tear or puncture in the liner system, the Permittee must notify the Ohio EPA on-site inspector and must expeditiously repair the damage**…."

Reason: The RAP contains specific instructions about what situations trigger a report to Ohio EPA in regard to liquids detected in the secondary leachate collection system. A certain amount of liquid is considered to be normal, but any amount of liquid could be classified as "leakage" under this proposed permit condition. ESOI believes that the approved RAP adequately addresses response to leakage. A tear of puncture of the landfill liner system should be evaluated by the Ohio EPA on-site inspector, who can assess the severity of the damage and the need for expeditious repairs.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 51:

J.7(e)

The Permittee must provide to Ohio EPA analytical results of leachate from each sub-cell annually. Parameters to be tested are listed in Table K-1 (Constituents with Specified Comparison Standards), K-2 (Constituents with Comparison Standards) and K-3 (Ground Water Quality Parameters) of this permit and the radiological parameters in Table G-1.

Change to: "… and K-3 (Ground Water Quality Parameters) of this permit ~~and the radiological parameters in Table G-1~~."

Reason: ESOI has previously provided Ohio EPA with analysis results ESOI has submitted past demonstrations to Ohio EPA showing that radiological constituents in groundwater at the ESOI site are caused by naturally occurring compounds present in the soils and sediment. Ohio EPA has accepted these demonstrations and no longer requires ESOI to analyze groundwater samples for radiological parameters. ESOI is also providing comments for revised Table G-1

recommending that a subset of the Table K-1 parameters be analyzed; Table K-1 does not include radiological parameters.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 52:

J.13

Special Requirements for F020, F021, F022, F023, F026 and F027

OAC Rule 3745-57-18

EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027 must not be placed in a landfill unless the Permittee operates the landfill in accordance with a management plan for these wastes that is approved by the director pursuant to the standards set forth in OAC Rule 3745-57-18, and in accordance with all other applicable requirements of OAC Chapter 3745-57.

Change to: ~~Special Requirements for F020, F021, F022, F023, F026 and F027, OAC Rule 3745-57-18~~ **Reserved.**

~~EPA hazardous waste numbers F020, F021, F022, F023, F026, and F027 must not be placed in a landfill unless the Permittee operates the landfill in accordance with a management plan for these wastes that is approved by the director pursuant to the standards set forth in OAC Rule 3745-57-18, and in accordance with all other applicable requirements of OAC Chapter 3745-57.~~

Reason: This condition should be removed entirely since the OAC 3745-57-18 Rule was rescinded on December 4, 2004.

Ohio EPA Response: *The comment is correct in that OAC Rule 3745-57-18 was rescinded, but it occurred on December 7th , 2004 not December 4th. Moreover, the rule language was simply re-promulgated under a new designation, OAC Rule 3745-57-17. As such, it is appropriate for the condition to remain in the permit. The citation has been revised to reference OAC Rule 3745-57-17.*

Comment 53:

K.2(b)(i) Table K-1

Constituent	Comparison Standard for Unaffected Wells (µg/L)
Acetone	10
Benzene	1
Chloroform	1

1,1-dichloroethane	1
1,2-dichloroethane	1
1,4-dioxane	50
ethylbenzene	1
methylene chloride	1
methyl ethyl ketone	10
total phenols	5
tetrahydrofuran	2
toluene	1
1,1,1-trichloroethane	1
trichloroethene	1
vinyl chloride	1
total xylenes	1
cadmium (dissolved)	1
chromium (dissolved)	25
dissolved lead	5
cyanide	10

Change to: "…

trichloroethene	1
vinyl chloride	~~1~~ **2**
total xylenes	1…"

Reason: Typographical error.

Ohio EPA Response: *The comparison standard for vinyl chloride in the draft permit was 2 µg/L and remains as such in the final permit.*

Comment 54:

K.2(b)(iii) Table K-3. Ground Water Quality Parameters

Parameters

Iron

Manganese

Sulfate

Total Organic Carbon

pH

Specific Conductance

Temperature

Change to: "…

~~Iron~~

~~Manganese~~

~~Sulfate~~

~~Total Organic Carbon~~

pH

Specific Conductance

Temperature

Turbidity

Note: The parameters in Table K-3 will be measured in the field in accordance with the Permittee's Standard Operating Procedures for the collection of ground water samples as described in Appendix E.9 of the Part B Permit Application. These parameters will be collected to demonstrate that the collected groundwater samples are representative of formation water."

Reason: The collection of iron, manganese, sulfate and Total Organic Carbon (TOC) at the ESOI site have not yielded useful information over the years they have been analyzed. The constituents iron, manganese, sulfate, and TOC should be removed from Table K-3 and the Turbidity measurement should be added along with the footnote to denote the purpose of these

field measurements.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 55:

K.6(e)(iii)

All non-naturally occurring constituents reported to be present during the Appendix to OAC Rule 3745-54-98 sampling in accordance with Permit Condition K.6(e)(i) and (ii) must be considered elevated. For naturally occurring constituents, the Permittee must determine if the constituents are elevated by developing comparison standards in accordance with the requirements of Permit Condition K.2(b)(ii).

Change to: "All non-naturally occurring constituents reported to be present **at or above the practical quantitation limit (PQL)** during the Appendix to OAC Rule 3745-54-98 sampling in accordance to Permit Condition K6(e)(i) and (ii) must be considered elevated. For naturally occurring constituents, the Permittee must determine if the constituents are elevated by developing comparison standards in accordance with the requirements of Permit Condition K.2(b)(ii).

Reason: Clarification that only non-naturally occurring constituents that exceed the PQL must be considered to be elevated (i.e., results below the PQL are not automatically considered to be elevated).

Ohio EPA Response: *As specified in the permit, OAC Rule 3745-54-98 Appendix sampling is only conducted after a release has been confirmed. Confirmed detections above the method detection limit (MDL) are used to develop the list of constituents of concern for the risk evaluation in compliance monitoring. The PQL is used for statistical evidence of an increase in detection monitoring. The MDL is used as the limit to determine if the constituent is present in compliance monitoring. This is consistent with OAC Rule 3745-54-98(G)(2) which requires the Permittee to report any constituents that are "present". Permit condition K.6(e)(iii) has not been changed.*

Comment 56:

K.6(j)

For each elevated constituent the Permittee must report the extent of the plume. The report must include an isoconcentration map and isoconcentration cross section for each elevated constituent. The concentration or value of the parameter must be printed on the map and cross section next to the appropriate well location and concentration contours must be drawn on the map and cross section. The estimated extent of the plume must be indicated on the map and cross section. The report must include an evaluation of the need for additional monitoring wells to determine the full extent of the plume. If additional wells are needed to determine the extent of the plume, a Class 2 permit modification in accordance with Permit Condition K.1(c) must be included in the report. This report information must be included in each Final Data Report and Evaluation submitted in

accordance with the schedule in Permit Condition K.7(c)(vi).

Change to: "… The report must include ~~an isoconcentration map and isoconcentration cross section~~ **a map and cross-sections(s) showing the value of each elevated constituent. Isoconcentration maps and cross-sections must be constructed for each elevated constituent determined to be present in two or more monitoring wells.** ~~The concentration or value of the parameter must be printed on the map and cross section next to the appropriate well location and concentration contours must be drawn on the map and cross section~~. The estimated extent of ~~the~~ **each** plume must be indicated on the ~~map and cross section~~ **isoconcentration maps**…."

Reason: It is not possible to construct isoconcentration maps from one data point. "Mapping" one parameter at one location is not productive. An isoconcentration map should only be produced if there is something to contour.

Ohio EPA Response: *Ohio EPA generally concurs with the proposed changes. However, estimated extent of plumes should be indicated on both maps and cross sections. The final permit language reads as follows:*

"… The report must include a map and cross-sections(s) showing the value of each elevated constituent. Isoconcentration maps and cross-sections must be constructed for each elevated constituent determined to be present in two or more monitoring wells. The estimated extent of each plume must be indicated on the maps and cross sections..."

Comment 57:

K.7(c)(iv)

time series graphs for parameters listed in Permit Condition K.2(b)(iii);

Change to: ~~time series graphs for parameters listed in Permit Condition K.2(b)(iii)~~ "**Reserved**;"

Reason: Refer to comments for K.2(b)(iii). This permit condition should be eliminated as it refers to the time-series graphs for the parameters listed in Permit Condition K.2(b)(iii) that should be removed as indicator parameters. The remaining indicator parameters are being analyzed for the purpose of determining if the collected groundwater samples are representative of formation water. The results do not need to be presented in a time series.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 58:

L.1

The Permittee must maintain a document depository at a public library located in the City of Oregon. In accordance with OAC Rule 3745-50-30, such depository must consist of all documents and correspondence between the Permittee and Ohio EPA under the terms and

conditions of this permit. If permission to maintain such a document depository is denied by the library or the terms required for such **deposit** are or become unreasonable, then the Permittee must inform Ohio EPA and document such denial and/or circumstances.

Change to: "… maintain such a document depository is denied by the library or the terms required for such ~~deposit~~ **depository** are or become unreasonable,…"

Reason: Typographical error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Change to: "…such depository must consist of all **consequential** documents and correspondence between the Permittee and Ohio EPA under the terms and conditions of this permit **subject to the requirements of permit condition A.13 or germane to such documents**. …"

Reason: To avoid having to include inconsequential communication with Ohio EPA such as electronic mail correspondence as part of the public depository, language limiting the scope of what is to be included should be added to the permit condition. Permit condition A.13 reiterates the signatory and certification requirements of OAC 3745-50-58(K). The requirement to include germane correspondence would include subsequent communications that are directly related to the original documents, but are not required to be separately certified. Such limits would also make better use of the shelf space set aside for ESOI at the present depository location, the Oregon Library.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Ohio EPA General response to Permit Attachment A comments (noted below as comments 59 through 78): *Ohio EPA received Revision No. 18 of Section E (related to ground water monitoring and response) on June 30 as a part of a self implementing Class 1 permit modification. Ohio EPA has evaluated Revision 18 and determined that the Permittee has adequately addressed the comments of Attachment A of the draft permit with the exception of the following comments: Attachment A comment #1, #3 (partial), #17 and #19 (which are noted as Responsiveness Summary Comments #59, #61, #75 and #77 respectfully below). Therefore, all the comments of Attachment A of the draft permit have been removed in the final permit with the exception of the comments noted above. No further responses to these comments has been provided by Ohio EPA. The "Response:" notation in comments #59 through #78 represents the Permittee's comments on Attachment A.*

Comment 59:

Attachment A, Comment 1

1. Section E-1a, page E-3, last paragraph, last two sentences state, "The location of monitoring wells are included on Plate 2, and Plates GW-1 through GW-4. The boring logs for the various investigations are in Volume 4B and 4D." ESOI must update the drawings, boring logs, well construction logs, and abandonment reports to include any changes (new wells or abandonments) since the April 1992 permit revision. Also a replacement figure is needed for Figure 2-1 in the *Comprehensive Hydrogeologic Report* contained in Volume 4A.

Response: ESOI updated Plates GW-1, GW-2, and GW-3 and provided them to the Ohio EPA as part of Permit Revision No. 17 submitted on March 11, 2005. Plate GW-4 has been deleted and wells previously on Plate GW-4 are now included on Plate GW-2. Section E-1a , page E-3, last paragraph has been revised accordingly. The revised page is included in Attachment 3 of Revision No. 18 – Permit Application – Section E Revisions dated June 27, 2005 (See item No. 4 of Revision No. 18).

Comment 60:

Attachment A, Comment 2

2. Section E-1b, page E-4, first paragraph of the section states, "Bedrock under the site is found at depths of 70 to 90 feet and is known as the Greenfield dolomite, a member of the Bass Islands Formation (Silurian Age, approximately 410 million years old)." ESOI must revise this sentence to reflect the current terminology as defined by the Ohio Department of Natural Resources Division of Geological Survey. The Greenfield Dolomite Formation is a part of the Salina Group.

Response: Section E-1b, page E-4 has been revised as indicated. The revised page is included in Attachment 3 of Revision No. 18 – Permit Application – Section E Revisions dated June 27, 2005 (See item No. 5 of Revision No. 18).

Comment 61:

Attachment A, Comment 3

3.0 Section E-1c, page E-8, third paragraph; page E-10, first paragraph; and page E-11, last paragraph discuss permeability ranges. ESOI must update the permeability to include the range defined in the May 1996 and October 30, 1998 Permit Renewal Applications and any data obtained during the RCRA Facility Investigation (RFI).

Response: Section E-1c, page E-8, third paragraph; page E-10, first paragraph; and page E-11 were revised and included in Revision No. 18 – Permit Application – Section E Revisions dated June 27, 2005 (See item No. 6 of Revision No. 18).

3.1 The text should also be revised to include a calculation of permeability for the upper till.

Response: The third paragraph; page E-10 has been revised and included in Revision No. 18 – Permit Application – Section E Revisions dated June 27, 2005 (See item No. 6 of Revision No. 18).

3.2 The calculation should be based upon the initial placement of waste in the unit, the distance

traveled from the waste unit to the well and the time it took for contaminants to show up in monitoring wells.

Response: This portion of the question requests that ESOI estimate permeability based upon contaminant travel rates. Contaminant travel rate is not equal to permeability, although they are both expressed in units of distance per time (ft/day or cm/sec).

Flow (as defined by Darcy) within porous media is defined as $q = k*i*a$ rearranging we get:

Permeability (Hydraulic Conductivity) is defined as: $k = q / (i*a)$

Where:

"k" = hydraulic conductivity (length per time)

"i" = hydraulic gradient (dimensionless) = change in hydraulic head over length of flow

"a" = cross-sectional area (length squared)

"q" = volume of water pushed through the cross sectional area in response to the hydraulic gradient (length cubed)

This equation assumes uniformly porous media with fluid viscosity of 1 (i.e., water). Generally, both in-situ tests and laboratory determinations are based upon the basic Darcy equation.

Hydraulic conductivity is not an expression of travel rate. For that, the seepage velocity must be calculated as:

$$v = k/n$$

Where:

"v" = seepage velocity (distance per time)

"n" = effective porosity (dimensionless)

Since porosity is always less than unity (1), the seepage velocity is always greater than the hydraulic conductivity (permeability). (This of course is counter-intuitive until you realize that there are physical limits on the size of the molecule that can be squeezed through very fine grained porous media.

However, seepage velocity does not accurately reflect the rate (speed) at which a contaminant can move in groundwater. Each contaminant is subjected to chemical reactions, decay, and/or retardation. These factors are dependent upon chemical specific properties such as molecular size and charge and the cation exchange capacity of the soil for inorganics, the ½ life (decay rate) of the chemical and biodegradation rate (also expressed as decay), the organic-carbon partition coefficient (Koc) and the fraction organic content (foc) and/or clay content in soil (e.g., Kd (soil-water partition coefficient) = Koc*foc), and potential chemical reactions between various chemicals is soil and groundwater.

Also, in porous media, flow rate is not constant throughout the media. The seepage velocity reflects the theoretical flow rate of water. In reality, mechanical dispersion takes place resulting in some particles of water traveling faster and some slower than the seepage velocity. Mechanical dispersion occurs in three dimensions, and thus tends to "dilute" the edges of the plume in all directions. For very slowly moving water (such as in media with very low hydraulic conductivities) chemical diffusion may also be a significant influence on contaminant transport.

If we were to assume strictly advective (longitudinal) flow in a water bearing zone (i.e., ignored the effects of transverse and vertical dispersion), the flow rate of a contaminant could be expressed as follows:

$$Cv = (k/n) * r$$

Where:

Cv = contaminant flow rate (distance per time)

"k" = hydraulic conductivity (distance per time)

"n" = effective porosity (dimensionless)

"r" = chemical specific factor that combines the effects of retardation or sorption (R = 1+{(pd*Kd)/n}), longitudinal advection (Dx), biodegradation, and contaminant ½ - life.

We could therefore solve for hydraulic conductivity by:

"k" = Cv * n/r

Where:

Cv = the travel time/distance for the contaminant

"n" = effective porosity

"r" = chemical specific factor

In order to calculate "k", Cv, n, and r must be known with some certainty.

Of the parameters above, porosity (n) could be determined with the most certainty. However, porosity is usually not measured directly in the laboratory because it typically requires the use of mercury immersion methods, which are both toxic and expensive. For soils, porosity is usually calculated by the laboratory using measurements of dry bulk density and specific gravity. The values calculated by the lab are for total porosity. The effective porosity is less than the total porosity. Even with a laboratory determined porosity, effective porosity is not known with certainty.

The parameter Cv could be determined if:

1. The time of release of the specific contaminant were known;
2. The distance from the placement of the contaminant in the cell to the well were known;
3. The time of the appearance of the contaminant were known.

Cell F operated from 1980 to 1983; Cell G operated from 1990 to 1994; Cell H operated from 1983 through May 1987, Cell I operated from 1987 through 1990.

As far as ESOI knows, the monitoring wells were placed essentially at the edge of the former landfill. ESOI might be able to estimate the distance from the edge of the landfill to the well, but cannot state with any certainty the distance from the placement of the contaminant within the cell to the well, nor the hydraulic properties of the intervening material.

Semi-annual sampling has been conducted at this site since 1998. The first appearance of contaminants at wells occurred in 1998.

There are great uncertainties involved with estimations of both the distance contaminants have traveled and the times of travel at this site. Distances may range from a few feet to a few hundred feet. Times could range from a few months to more than twenty years.

Finally, great uncertainty exists in estimation of "r":

- All flow equations assume homogeneous media. Till is typically heterogeneous, and therefore dispersion may be greater or less than expected.
- Sorption of organic chemicals is both chemical specific and a function of the number of sorption sites within the soil matrix (foc and clay content). Sorption slows the transport of contaminants.
- Transport of inorganic constituents is subject to the cation/anion exchange capacity of the porous media and the chemistry of the water flowing though it.
- Microbial activity within the porous media may transform or consume chemicals.

Because of the factors listed above, ESOI believes it is inappropriate to estimate hydraulic conductivity (permeability) from apparent contaminant transport rates, even if those rates could be determined with any certainty, which they cannot.

The best use of time-rate travel for various contaminants is for calibration of flow models.

3.3 The potential permeability ranges shall include measured permeabilities and calculated permeabilities.

Please refer to other comments in this Section.

Comment 62:

Attachment A, Comment 4

4. Section E-1c, page E-9, third paragraph, discusses the contact zone. ESOI must revise this section to include the discussion of the contact zone found in the May 1996 and October 30, 1998 Permit Renewal Applications, (pages E-39 and E-40 of the 1998 Application). The text should also explain that sands found at the contact of the lower and upper tills are monitored as a part of the upper till/lower till contact monitoring system (D wells).

Response: Section E-1c, page E-9 has been revised to include text from pages E-39 and E-40 of the 1998 Application. The revised page is included in Attachment 3 of Revision 18.

Comment 63:

Attachment A, Comment 5

5. Section E-1c, page E-9, fourth paragraph, states "The upper till also contains isolated inclusions." ESOI must revise this section to include discussion of the 7 foot sand deposit identified in RFI monitoring well T-25D at a depth of 41 feet to 48 feet.

Response: Section E-1c, page E-10, third paragraph has been revised to include information about the sand identified at RFI monitoring well T-25D. The revised page is included in Attachment 3 of Revision 18.

Comment 64:

Attachment A, Comment 6

6. Section E-1d, page E-13, first paragraph, states "An isopach map, E-3C, details the aerial extent of the deposits at the contact zone beneath Cell G." ESOI must update Figure E-3C to include sands identified in all borings conducted to date, including those installed as part of the RFI. Note, Figure E-3C is not labeled; the Figure should be titled, Isopach Map of Sand Deposits. Also, the map shows zero feet of sand at monitoring well MR-4D. According to the boring log for MR-4D, the map should display 0.5 feet of sand at this location.

Response: Figure E-3C has had a title added and been revised to include 0.5 feet of sand at MR-4D. The revised figure is included in Attachment 3 of Revision 18. The RFI report will include boring information developed during the investigation activities

Comment 65:

Attachment A, Comment 7

7. Section E-2a(1), page E-37, second paragraph, discusses the velocity of ground water flow in the bedrock aquifer. ESOI must provide further discussion and current flow rate calculations. For example, the current discussion states that the velocity range is 28 feet/year to 45 feet/year, where as the range reported in the *Final Report of Groundwater Quality April 2003 Sampling*

Event, August 29, 2003 is 7.3 to 54 feet/year.

Response: The text has been updated to reflect recent ground water flow velocities. The revised page E-37 is included in Attachment 3 of Revision 18.

Comment 66:

Attachment A, Comment 8

8. Section E-2a(1), page E-37, last paragraph states, "In addition, data comparing static water levels in wells in the hardpan and in the bedrock refute the assumption that water moves downward through the hardpan into the bedrock." This statement is incorrect. Fluid level measurements in bedrock wells and upper till/lower till wells show a downward gradient indicating a potential for downward flow. Therefore, ESOI must delete this sentence.

Response: The indicated sentence has been deleted. The revised page E-37 is included in Attachment 3 of Revision 18.

Comment 67:

Attachment A, Comment 9

9. Section E-2b, page E-38, second and third paragraphs, discusses the vertical permeability of the lacustrine sediments, the horizontal permeability of the shallow till wells, and the vertical permeability of the lower till. ESOI must revise this section to provide the current ranges of the vertical permeability for each geologic unit (lacustrine, upper till, and lower till) and the horizontal permeability for each monitored zone (lacustrine/upper till and upper till/lower till).

Response: Section E-2b,, page E-38 and E-39 have been revised to include available permeability information. The revised pages are included in Attachment 3 of Revision 18.

Comment 68:

Attachment A, Comment 10

10. Section E-2b, page E-39, second paragraph, states, "Observations made during the excavation of the various cells indicate that the maximum dimension of the sand inclusions in any direction seldom exceeds 10 feet." ESOI must revise this text to identify the cells where this was observed. The Millard Road Landfill, Cell F, Northern Sanitary Landfill, and Central Sanitary Landfills do not have a depth reaching the contact zone. The text should also be revised to identify exceptions like the Cell G sand zone shown in Figure E-3C. In addition, the 7 foot thick sand zone identified at a depth of 41 to 48 feet within the upper till in well T-25 is likely to have a length longer than 10 feet.

Response: Information on sand inclusions has been provided in Section E, page 39. The revised page is included in Attachment 3 of Revision 18.

Comment 69:

Attachment A, Comment 11

11. OAC Rule 3745-50-44 (B)(3) requires the permit application to include on a topographic map a delineation of the waste management area, the property boundary, the proposed point of compliance as defined under rule 3745-54-95 of the Administrative Code, the proposed location of ground water monitoring wells as required under rule 3745-54-97 of the Administrative Code and, to the extent possible, the information required in paragraph (B)(2) of this Rule. In addition to the Attachment M-3 revisions required by the IGWMP, ESOI revised the text in Section E-3a, Page E-40 and E-41, describing the point of compliance on Page E-40 and deleted the map showing the point of compliance on Page E-41. The text defines the point of compliance as it is defined in OAC Rule 3745-54-95. However, the text then states the point of compliance for ESOI is the network of perimeter and internal groundwater monitoring wells at the facility. OAC Rule 3745-54-95(B)(2) states, "if the facility contains more than one regulated unit, the waste management area is described in an imaginary line circumscribing the several regulated units". ESOI must revise the text on page E-40 to delete the sentence stating, "The point of compliance for ESOI is defined as the network of perimeter and internal groundwater monitoring wells at the facility." Text shall be added stating that the point of compliance is a vertical surface as represented by a line circumscribing the regulated units. The line of compliance shall be shown on a map and be located at the edge of waste management areas and taking the line of shortest distance between units.

Response: Page E-40 has been revised as indicated and a reference has been added for the new Figure E-15, page E-41. The revised page and figure are included in Attachment 3 of this document.

Comment 70:

Attachment A, Comment 12

12. OAC Rule 3745-50-44 (B)(5) requires the permit application to include detailed plans and an engineering report describing the proposed ground water monitoring program to be implemented to meet the requirements of OAC Rule 3745-54-97.

Table E-3, pages E-43 and E-44 and Table E-4, pages E-49 through E-56 lists the well descriptions of the bedrock monitoring wells. These Tables provide the top of casing elevation for each well. The wells have been resurveyed; therefore, the Tables must be revised to provide the most recent survey elevations. In addition, it must be made clear that the top of casing includes the well head and that the elevation represents the elevation of the reference point for fluid level measurements. The total depth of the monitoring well and the screen depth must be from the elevation reference point and should be footnoted as such.

Response: Table E-3 and Table E-4 have been updated with current information. The revised pages are included in Attachment 3 of Revision 18. The total well depth and well screen depths will be updated as well maintenance is conducted.

Comment 71:

Attachment A, Comment 13

13. Section E-3b(2), page E-46, second paragraph of this section, states, "Drawings GW-2 and GW-4 (Cell G) show the locations of the wells monitoring the deep leak detection system ...screened at the interface between the late and lower till (contact zone)." In accordance with OAC Rule 3745-50-44 (B)(3):

a.ESOI must change the word "late" to "upper".

Response: The word "late" has been changed to "upper" on page E-46. The revised page is included in Attachment 3 of Revision 18.

b. Drawing GW-2 shows the location of the deep till wells and drawing G-4 shows the location of the sand zone wells. All the wells that have sand deposits at the upper till lower till contact are not included on drawing GW-4. However, since the wells with sand and wells without sand are all monitoring the same contact migration pathway, one map should be used to show the location of the wells monitoring the contact. Note, wells with sand are identified in Figure E-3C. Drawing GW-4 should be deleted and Drawing GW-2 should be revised to include the wells that were on Drawing GW-4.

Response: Drawings GW-1, GW-2, and GW-3 were provided in Permit Modification No. 17, dated March 11, 2005 and included the requested revisions.

Comment 72:

Attachment A, Comment 14

14. Section E-3b(2), page E-47, fourth paragraph states, "Each leak detection well has been fitted with a dedicated hand pump..." Many of these hand pumps have been replaced with downhole well wizard pumps. The hand pumps often produce too much sample agitation to obtain representative VOC analysis. In accordance with OAC Rule 3745-50-44 (B)(5), ESOI must revise the permit application to identify all wells with hand pumps and provide a schedule for replacing the hand pumps with BAT sampling equipment. The schedule must begin with replacing the pumps in affected wells first, then wells nested with or adjacent to affected wells, then wells in order of earliest to latest waste cell. The schedule must indicate that all hand pumps will be replaced no later than 3 years from the date of approval of the permit renewal.

Response: A note was added to Section E-3b(2), page E-47, fourth paragraph indicating that the hand pumps have been scheduled to be replaced by the end of 2006. The revised page is included in Attachment 3 of Revision 18.

ESOI is currently implementing the replacement of hand pumps with Well Wizard® pumps. As of the April 2005 sampling event, Well Wizards® were installed in all wells except the following: F2-S, H3-S, M-2S, M3S, M5S, F-1DA, F-2D, G-3D, I-5D, M-3D, and M-8D). Section E of the April 2005 Preliminary Report on Ground Water Quality (PRGWQ) presents a table of field readings collected during the April 2005 Semi-Annual Sampling Event. This Table indicates which wells are equipped with a Well Wizard® and which are equipped with dedicated hand pumps. Attachment 11 of the April 2005 PRGWQ presents documentation of the replacement of twelve

(12) pumps in April, 2005. ESOI is on schedule to complete replacement of the hand pumps with Well Wizard® pumps by the end of 2006.

Comment 73:

Attachment A, Comment 15

15. OAC Rule 3745-50-44(A)(19)(i) requires the permit application to include a topographic map showing a distance of one thousand feet around the facility....injection and withdrawal wells both on-site and off-site. Ohio EPA could not find a drawing in the permit application identifying all wells within 1000 feet of the facility boundary. Therefore, ESOI must add a map to the permit application that identifies all wells within 1000 feet of the facility boundary. In addition, since a release to ground waters in glacial deposits has been identified, a map showing all wells within one mile of the facility boundary should be included on the map. A list of well owners and addresses, a copy of the well logs, current status of each, depth, use, and where applicable, abandonment date should be included. In addition, well logs for wells in Oregon Township are currently provided in Appendix 7, Volume 4C, of the Comprehensive Hydrogeologic Report, beginning in Volume 4A. A new search of Ohio Department of Natural Resources well logs and Lucas County Health Department Drinking water Records should be conducted to locate wells. A map should be included showing the location of the wells.

Response: In accordance with OAC Rule 3745-50-44 (A)(19)(i) Figure 2-4, Facility Topographic Map identifying the 1,000 foot radius around the facility and an ODNR Well Log Location map identifying all wells within 1,000 feet and 1-mile of the facility boundary are provided in Attachment 5 of Revision 18 for insertion of ESOI's RCRA Part B permit Application, Volume 4C, with suggested insertion location at the beginning of Appendix 7. The well owners' addresses, a copy of the well logs, the current status of each, depth, use, and where applicable, abandonment date are included with the ODNR well logs in Appendix 7, Volume 4C, of the Comprehensive Hydrogeologic Report.

ESOI has also completed a "new" search of ODNR and Lucas County Department of Health well log records, and the search indicated no new wells or abandonment records since the last search was conducted. The Freedom of Information Act (FOIA) request and information received from the ODNR are included in Attachment 5 of Revision 18.

Comment 74:

Attachment A, Comment 16

16. OAC Rule 3745-50-44(B)(2) requires the permit application to include information identifying the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area).

Section E-2 of the permit application contains the identification of the uppermost aquifer and the description of ground water conditions in the glacial deposits, based on hydrogeologic investigations conducted through 1990 summarized in section E-1. There have been

hydrogeologic investigations conducted since 1990 (e.g., *Determination of Hydraulic Conductivity & Flow Velocities of Greenfield & Lockport Formations*, January 1993; *Cell M Phase 3 Contact Zone Removal*, October 1997; *Cell M Phase 1: Engineering Investigation Report - - Supplemental Investigation of the Source of the Bubble Liquid & Constituents*, October 1997; *Draft Final RFI Report Northern Sanitary Landfill*, June 1997; *RFI Phase I Report and Phase II Work Plan*, July 2003). To meet the requirements of OAC Rule 3745-50(B)(2), ESOI must revise permit application Sections E-1 and E-2 to include information from all hydrogeologic investigations conducted to date. Revisions to permit application Sections E-1 and E-2 should include information from all hydrogeologic investigations conducted to date. Section E-1 should be revised to include a summary of investigations conducted since 1990. Section E-2 should be revised to reflect any changes in flow directions and rates, and the extent of any sand deposits. ESOI may move the DVSOP to Appendix E.12 and use the 1996 renewal compendium (Appendix E.10) in addition to adding information since the compendium to respond to this deficiency.

Response: The DVSOP has had pages renumbered and moved to Appendix E-12. The revised DVSOP is included in Attachment 6 of Revision 18.

The Compendium, located in ESOI's May 1996 Permit Renewal Application Appendix E.10 (Volumes 12 – 17) has been included in Section E as Appendix E-10 by reference. Similarly, the other referenced documents have been included in Section E, Appendix E.10 by reference. The revised Appendix E.10 is included as Attachment 7 of Revision 18.

The Table of Contents for Section E has been revised in accordance with the changes above. The revised Table of Contents is included in Attachment 3 of Revision 18.

Comment 75:

Attachment A, Comment 17

17. OAC Rule 3745-50-44(B)(2) requires the permit application to include, for all borings/piezometers/wells, drilling logs, well construction logs, and abandonment reports, a map(s) showing their location and a Table listing all borings/wells identifying whether the borings/wells are active or abandoned and referencing the location of drilling logs, well construction logs, and abandonment reports.

- Section E-1a of the permit application, page E-2, second paragraph states "With few exceptions the borings and wells installed prior to1985, during the preceding studies, have been grouted." ESOI must revise the text to identify which borings/piezometer/wells have been plugged. ESOI should reference a table that includes a list of borings/piezometers/wells at the facility and lists whether the borings/piezometers/wells are active or abandoned. The table should be updated to include all existing knowledge of borings at the site and to reference the location in the permit application of drilling logs and abandonment reports.

- Section E-1a, page E-3, last sentence of third paragraph, "Figure E-1 shows the ESOI site with the locations of the borings done during the various studies up to 1987." ESOI must update this text and FigureE-1 or add a series of Figures to show

all borings, piezometers and wells (including shallow borings/piezometers/wells) to date.

Response: OAC Rule 3745-50-44(B)(2) requires the permit holder to identify the uppermost aquifer beneath the facility and provide documentation used to support the determination. OAC Rule 3745-50-44(B)(2) specifically states:

> *"Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from Hydrogeologic investigations of the facility area)"*

In accordance with the above-referenced rule citation, identification of the upper most aquifer is provided in Section E-2 of the Permit Application (page E-22). Section E-2a(1) of the Permit Application (page E-31) is entitled "*Groundwater Flow Rate and Direction*".

Section E-1a of the permit Application is entitled "*Geologic Information*." Pages E-2 and E-3 provide a listing of the hydrogeolgic investigations which have been completed at the ESOI site up through 1983. The sentence "With few exceptions the borings and wells installed prior to 1985, during the preceding studies, have been grouted" has been deleted because it did not add to the Section. The revised Page E-3 is included in Attachment 3 of Revision 18.

Section E-1a, page 3, paragraph 4 of the Permit Application includes a discussion of additional drilling programs which were completed at ESOI's site since 1987, and similarly includes references to Plates 2 and GW-1 through GW-3 which show the locations of soil borings and additional monitoring wells installed at the site since 1987.

Section E-1a of the Permit Application summarizes a number of hydrogeologic investigations which have been completed at the ESOI site and provides a description of the facility's geology. While OAC Rule 3745-50-44(B)(2) requires the identification of the uppermost aquifer beneath a facility and inclusion of data/Hydrogeologic information to support this determination, it does not require the inclusion of a figure or series of figures to show all borings/piezometers/wells installed to date.

Comment 76:

Attachment A, Comment 18

18. In accordance with OAC Rule 3745-50-44(B)(2), ESOI must update Figure E-2, Top of Bedrock, to show the top of bedrock as defined by all data to date.

Response: In accordance with your request, ESOI has updated Figure E-2, Top of Bedrock to show the top of bedrock on the site as defined by data available to date. The updated Figure E-2, is included in Attachment 3 of Revision 18.

Comment 77:

Attachment A, Comment 19

19. Figures E-3 through E-3B show cross sections of the geologic stratigraphy. In accordance with OAC Rule 3745-50-44(B)(2), ESOI must add additional cross sections to show the geologic stratigraphy along the whole line of compliance as described by OAC Rule 3745-54-95. The cross section should use data from all borings installed along the point of compliance to date. In addition, cross sections should be included across each waste unit showing the position of waste placement relative to the geologic strata.

Response: Figure E-3 is a geologic fence diagram and figure E-3A and E-3B are cross sections, all of which are based upon soil boring information. These figures illustrate the glacial geology of the ESOI site. OAC Rule 3745-50-44(B)(2) requires the Permitee to provide:

> "Identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, including ground water flow direction and rate, and the basis for such identification (i.e., the information obtained from Hydrogeologic investigations of the facility area)"

In accordance with the above-referenced rule citation, identification of the uppermost aquifer is provided in Section E-2 of the Permit Application (page E-22). Section E-2a(1) of the Permit Application (page E-31) is entitled "Groundwater Flow Rate and Direction." OAC Rule 3745-50-44(B)(2) does not specifically require ESOI to provide cross sections of the geologic stratigraphy along the entire line of compliance.

Comment 78:

Attachment A, Comment 20

20. OAC Rule 3745-50-44 (B)(4) requires the permit application to include a description of any plume of contamination that has entered the ground water from a regulated unit at the time that the application is submitted that: (a) delineates the extent of the plume on the topographic map required under paragraph (A)(19) of this Rule; and, (b) identifies the concentration of each constituent in the appendix to rule 3745-54-98 of the Administrative Code throughout the plume or identifies the maximum concentrations of constituent in the appendix to rule 3745-54-98 of the Administrative Code in the plume. The IGWMP and the RFI have identified ground water contamination in water table wells, lacustrine/upper till wells, and upper till/lower till wells. ESOI must revise Section E-2(b) to identify the extent of the plume(s) on the topographic map required under paragraph (A)(19) of OAC Rule 3745-50-44. Cross sections showing the extent of the plume(s) should also be included. The revision also needs to include the concentration of each constituent in the appendix to rule 3745-54-98 of the Administrative Code. The text should include a summary and status of the determination of the rate and extent being conducted in the RFI. The text should also reference Final Semiannual Data Reports for the current status of rate, extent, and concentrations of the plume.

Response: Cross sections and plan views illustrating the known extent(s) and concentrations of constituents reported in groundwater exceeding statistical comparison standards are already provided in the semiannual documents, (*Final Report on Ground Water Quality*) in accordance

with the IGWMP Permit Condition M.8(c)(vi) of ESOI's Modified Hazardous Waste Facility Installation and Operation Permit, effective January 27, 2004, which will be renamed Permit Condition K.7(c)(vi). Rather than duplicate this Permit Condition, text has been added to Section E-2(b), page E-39 indicating that this information is submitted with ESOI's semi-annual reports of groundwater quality. The revised page E-39 is included in Attachment 3 of Revision 18.

The RFI report is incomplete. Therefore, information on rate and extent discussion from RFI data would be premature. RFI information is available for review, but is not currently referenced in the Application.

Comment 79:

Attachment C

"… (iii) certificates of deposit properly secured at all times by collateral security described in (i) and (ii)above, (which agreements are only acceptable with commercial banks, savings and loan associations, and mutual savings banks); (v) commercial paper rated in one of the two highest rating categories by at least two nationally recognized rating agencies or commercial paper backed by a letter of credit or line of credit rated in one of the two highest rating categories;…

"…(A) such collateral is held by the Trustee or any agent acting solely for the Trustee during the terms of such repurchase agreement; (B) such collateral is not subject to liens or **clams** of third parties;…"

Change to: "… (iii) certificates of deposit properly secured at all times by collateral security described in (i) and (ii)above, (which agreements are only acceptable with commercial banks, savings and loan associations, and mutual savings banks); **(iv) the following investments fully insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation: (a) certificates of deposit, (b) savings accounts, (c) deposit accounts, or (d) depository receipts of banks, savings and loan associations and mutual savings banks;** (v) commercial paper rated in one of the two highest rating categories by at least two nationally recognized rating agencies or commercial paper backed by a letter of credit or line of credit rated in one of the two highest rating categories;…"

Reason: Typographical omission/error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Change to: "… any agent acting solely for the Trustee during the terms of such repurchase agreement; (B) such collateral is not subject to liens or ~~clams~~ **claims** of third parties;…".

Reason: Typographical error.

Ohio EPA Response: *Ohio EPA concurs with the comment and has revised the permit language accordingly.*

Comment 80:

"Module Highlights"

General comment applicable to all sections of the Permit.

Comment: Ohio EPA should include language in the "Module Highlights" sections of the Permit explaining that the text in these sections is informational in nature and they are not Permit conditions.

Ohio EPA Response: *As noted in the response to comment # 30, Ohio EPA views the Module Highlights text as informational in nature. Ohio EPA believes this is clearly noted by the fact that the text is titled as "Module Highlights". No change has been made to the permit.*

Responses to City of Oregon additional comments via letter received on October 24, 2005:

Comment 1:

A. "The earlier comments of the City of Oregon are incorporated by reference."

Ohio EPA Response: *Ohio EPA has provided responses to each of the comments made by the City during the previous comment period.*

B. "Attached is a mark-up of section D with comments and questions. These are a part of the City of Oregon's comments and questions."

Ohio EPA Response: *Ohio EPA has reviewed the marked-up Section D and has provided responses to comments and questions.*

C. "Our additional comments are below. We ask that the Ohio EPA respond to each comment and to answer each question as well."

Ohio EPA Response: *Ohio EPA has provided responses to each question.*

Comment 2: "Pages D-4 thru D-6 state that ESOI may "separate and accumulate recyclable materials" from debris etc. This is repeated at other locations in section D. The generator's intent was to discard these "recyclable materials" and dispose of them in a hazardous waste landfill. It manifested these to ESOI to accomplish this. The "recyclable materials" are thus hazardous waste like the rest of the debris they are a part of.

These "recyclable materials" are also mixed in with hazardous waste and they are also covered or coated with hazardous waste residues, dusts, particles etc. The permit specifies no standard for determining which materials are recyclable. It does not provide terms on how dusts and residues are removed, etc.

The provisions in Section D that purport to allow this "recycling" violate RCRA.

Question 1: Does ESOI do this? In the past five years, what quantities of so-called

"recyclable materials" has ESOI separated and shipped off-site? How many shipments of "recyclable materials" were made?"

Ohio EPA Response: *All materials received at the facility as hazardous waste must be managed as hazardous waste unless proven otherwise. Ohio EPA is not aware of any "recyclable materials" being shipped off in the last 5 years.*

Question 2: "Did ESOI use a hazardous waste manifest to ship these materials off-site? If so how is it manifested?"

Ohio EPA Response: *As noted above, Ohio EPA is not aware of any "recyclable materials" being shipped off in last the 5 years.*

Question 3: "If the original generator manifested the waste to Envirosafe as hazardous waste for disposal, under what legal authority can ESOI simply call the material "recyclable" and ship it off-site?"

Ohio EPA Response: *If the Permittee can show, through analytical results or other appropriate means, that the material should not be considered a hazardous waste, then it can be managed as such.*

Question 4: "Assume that the generator paid ESOI to dispose of a material as hazardous waste. If ESOI instead does not dispose of it but instead ships it off-site as recyclable (presumably for payment as scrap), does Ohio EPA sanction this conduct? Is this conduct a proper business practice? Is this what is happening?"

Ohio EPA Response: *As noted above, Ohio EPA is not aware of any "recyclable materials" being shipped off in last the 5 years.*

Question 5: "The Part A does not list "accumulating and shipping receivables off site to a non-RCRA facility" as a treatment activity for ESOI. Is ESOI permitted for this activity?"

Ohio EPA Response: *OAC rule 3745-50-10 defines "treatment" as "any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume." Accumulation and shipment of non-hazardous waste does not fall within the definition of treatment and is therefore not required to be listed as a treatment activity on the Part A or noted as an authorized activity within the permit.*

Question 6: "How does ESOI go about this "recycling" process? What does it do? How does it do it? What tests are used? Is OEPA involved with this in any way? Does OEPA supervise this? What do your on-scene coordinators do in this regard?"

Ohio EPA Response: *Again as noted above, Ohio EPA is not aware of any "recyclable materials" being shipped off in last the 5 years. If material were to be sent off as non-hazardous and*

destined for recycling, appropriate documentation (e.g., analytical data) would need to be on record at the facility. Ohio EPA would evaluate this documentation in the normal course of facility hazardous waste compliance inspections.

Comment 3: "Pages D-9 and D-10 and numerous other locations in section D concern the railroad shipments to ESOI. These pages state that the facility shall have a maximum of eight rail cars on-site (five loaded rail cars and three empty rail cars). Section D specifies the exact locations for these eight railways.

The siting criteria require that the shipment of hazardous waste to the ESOI facility must represent the minimum risk to human health and the environment. Permit terms must incorporate provisions to achieve this goal. The ORC and OAC also require that access to the facility must be controlled and a barb wire fence place around the facility. If the eight railers are at these locations then the gate for the rail spur can be closed and the perimeter fence secured. In addition, at the locations specified for the cars, most are inside the stabilization building or under a roof. This minimizes water infiltration from rain. It also limits the areas for potential spills. There are also inspections required for these designated car-areas. Section D also limit's the number of cars entering the facility to five at one time. These are necessary precautions to avoid the dangers of hazardous waste.

The rail yard is not a hazardous waste storage facility--and lacks all of the safeguards of such a facility. The permit provides eight spaces for rail cars on the ESOI property. It provides for no storage of railways in the rail yard. This rail yard adjoins farmlands and homes and a public cemetery.

There are indications that railers carrying hazardous waste to ESOI may be stored (or "back up") at the rail yard. Further, at several public hearings at which the OEPA was present, people familiar with the rail transport commented that waste was leaking in the rail yard or nearby tracks. The Ohio EPA cited the facility for leaving the rail yard gate open.

There are also indications that ESOI has more than eight rail cars on its property at one time.

The result is that the facility's rail transportation does not meet the regulatory standard. These standards must be strengthened to insure the gate is closed except for the brief passage time of five rail cars. Rail cars must be parked or stored only in the eight on-facility spaces. Storage or back-up of cars in the rail yard must be prohibited.

> **Question 7:** Are more than five loaded or three unloaded cars or eight total rail cars ever on the ESOI site? On how many occasions in the past two years?"

Ohio EPA Response: *No more than eight rail cars are ever on the site. Typically, there are five to six cars on site - two in the containment building, one in area N and two to three in area M. The actual length of available rail line at the facility serves as a physical constraint to the amount of space available for rail cars.*

> **Question 8:** "Are more than five railways ever delivered to ESOI at one time? On how many occasions in the past two years? Have rail cars ever been positioned such that

some are located inside the ESOI property while others are outside the gate? Do parked rail cars ever block the gate?"

Ohio EPA Response: *Ohio EPA is not aware of a situation when more than five rail cars were delivered at the site at one time. The facility gates at the rail spur swing out - Ohio EPA is not aware of any situations in which parked rail cars outside of the facility have blocked the gate.*

Question 9: "Has the Ohio EPA investigated how long and how often loaded rail cars remain in the Norfolk and Southern yard? How long do the loaded cars remain there? Do they ever "back up" or are stored there? Has the Ohio EPA ever investigated the demurrage charges for rail cars? If not, will it now do so?"

Ohio EPA Response: *The waste managed in cars at the rail yard is regulated under the hazardous waste transporter requirements of OAC Chapter 3745-53. Under these regulations, a transporter may store the waste for a period of ten days or less without triggering hazardous waste permitting requirements. Ohio EPA is not aware of any storage occurring at the rail yard beyond the ten day period. Ohio EPA has not investigated demurrage charges. Record keeping requirements of OAC rule 3745-53-22 can be used to determine if transfer facilities are complying with applicable requirements.*

Question 10: "At what other locations other than the eight proscribed locations has OEPA observed rail cars? How often? What has it done about this?"

Ohio EPA Response: *Ohio EPA has not observed rail cars at the facility outside of permit-defined areas.*

Question 11: "As part of the RCRA Corrective Action RFI is the rail yard being investigated? Isn't the RFI supposed to look for both on-site and off-site contamination?"

Ohio EPA Response: *In accordance with OAC rule 3745-54-101, the permittee is required to "...institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any waste management unit <u>at the facility</u>" (emphasis added). The adjacent rail yard is not a part of the facility. However, any contamination migrating from the facility to the rail yard would need to be addressed under the Permittee's corrective action program.*

Question 12: "Does the Ohio EPA agree that the rail yard is not an appropriate storage location for hazardous waste storage in railways?"

Ohio EPA Response: *As noted above, the waste managed in cars at the rail yard is regulated under the hazardous waste transporter requirements of OAC Chapter 3745-53. Under these regulations, a transporter may store the waste for a period of ten days or less without triggering hazardous waste permitting requirements.*

Question 13: "Does Ohio EPA agree that ESOI must be held accountable to meet the siting criteria and minimum risk for transportation of hazardous waste to the site?"

Ohio EPA Response: *Ohio EPA considered the applicable renewal issuance criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action.*

> **Question 14:** "Does the Ohio EPA agree that requiring the rail spur gates to be closed for all but the brief time for five cars to enter and exit provides the least risk and greatest protection against children or trespassers who try to enter the site?"

Ohio EPA Response: *Permit Condition B.5 (d)(ii) requires:*

> *"All secondary gates must be closed and locked unless attended or actively monitored by facility personnel. All main gates must be monitored during regular business hours by persons trained in security procedures. During non-operating hours, proper surveillance must be provided to monitor and control entry onto the active portion of the facility, as required by OAC Rule 3745-54-14(B)*."

Comment 4: "Pages D-22 and D-23 require ESOI to conduct annual tests on containers and to use ultrasonic tests. An independent engineer is to conduct these tests and do an evaluation. Similar requirements are imposed for the leachate tanks and components of the containment building (for example the floors) and elsewhere. Oregon believes that this testing is essential but should be increased to twice yearly. The facility is now aged fifteen years since the original 1991 permit issued. The increased age of these components demands greater scrutiny because, just like an old car, more things are likely to go wrong at an aging facility. Further, these tests should also be referenced to the ASTM standards and updated to the most modern testing procedures.

> **Question 15:** Each year has ESOI conducted the required testing of the containers? The leachate tanks? The containment building? Has an independent engineer certified each of these and provided an evaluation each year?"

Ohio EPA Response: *The language in question was revised as a part of a modification approved on September 15, 2005 and no longer requires annual ultrasonic testing of mixing bins and containers. As specified by Permit Condition A.27(c),the Permittee is required to submit a "clean" copy of the application within 90 days of permit issuance to make such updates. In any event, the Containment/Stabilization building where the bins are located is completely enclosed and underlain with a liner system to prevent migration of waste constituents into the environment. Ultrasonic testing for the leachate tanks is conducted on an annual basis and the accompanying engineer's certifications are available in the facility's operating record.*

> **Question 16:** "Have these tests and the engineer's report been placed in the facility's operating files as required by the permit and the OAC?"

Ohio EPA Response: *Testing results and the accompanying engineer's certification are available in the facility's operating record.*

> **Question 17:** "If ESOI did not do any required test or did not have an independent engineer certify the test or do an evaluation, then did ESOI report this non-compliance to Ohio EPA? How much money did this non-compliance save ESOI if there was non-

compliance?"

Ohio EPA Response: *Ohio EPA considered the applicable criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action.*

Comment 5: "At page D-85 ESOI states that it has an "incipient fire brigade" and that it will not immediately report fires to the Oregon Fire Department. This is downright dangerous and inexcusable. We believe that there have been fires at the ESOI site that were not reported to the Fire Department. If a fire were to take out the containment building or damage safety equipment serious human and environmental consequences could ensue. These provisions should be stricken. An absolute requirement to immediately notify the fire department and the other appropriate health and safety officials should be required. Certainly the number of fires occurring at the facility is germane to permit renewal. It bears on the competence to operate the facility. The failure to report these fires to the Oregon Fire Department is even greater evidence of indifference to public health and safety.

> **Question 18:** How many fires have occurred at the ESOI facility during the term of the permit? What were the dates and times of these fires and where was the fire located? What was on fire? How many of these fires were reported to Ohio EPA? How many were reported to the Oregon Fire Department?"

Ohio EPA Response: *Ohio EPA considered the applicable criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action. The comprehensive nature of the compliance history assessment encompasses all aspects of the facility's activities including the nature/frequency of any fire incidents. The facility's complete compliance history continues to be available for review by the City.*

> **Question 19:** "Please define what just exactly is an "incipient fire brigade"?"

Ohio EPA Response: *As discussed on Page D-52 of the application, the incipient fire brigade is the facility's on-site, first reaction fire response team. If a fire moves beyond the capabilities of the brigade, the brigade commander will request deployment of the local fire response authority*.

> **Question 20:** "What has Ohio EPA done to insure this "incipient fire brigade's" ability, competence and training to fight fires? Who is in this fire brigade? What equipment do they have?"

Ohio EPA Response: *Ohio EPA considered the applicable criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action. Section G of the application includes information on who is in the fire brigade, fire fighting equipment and training.*

Comment 6: "Page D-85 states that ESOI is managing leachate by transporting it to a "POTW, a pretreatment facility, or a commercial WWPT". Leachate is a hazardous waste F039. It must be manifested and shipped to an approved RCRA treatment/disposal facility.

Similarly at numerous other locations, Section D permits water used to decontaminate equipment, storage pads, and containers and even liquids derived from hazardous wastes to be similarly disposed as non-hazardous off-site or even to be discharged to ditches on site. All of these are either leachate or hazardous waste bearing the number of the waste the water mixed with. These "waters" are hazardous wastes and must be managed as such.

In contrast to these sections, Section D at several other locations states that these "waters" are liquid hazardous waste that must be labeled, handled, shipped and disposed off-site at a proper hazardous waste facility. At other locations ESOI states (correctly) that it is not authorized to handle liquid wastes. Further, the Part A does not authorize ESOI to treat or dispose of liquid wastes. However, even these sections must be strengthened to reflect RCRA requirements. Section D should be made consistent throughout to reflect the RCRA requirements for these liquid hazardous wastes.

> **Question 21:** Over the life of the permit, how has ESOI in fact managed: (1) waters/liquid solutions used to decontaminate equipment or buildings, (2) washing the containment building or other areas processing or storing hazardous wastes, (3) liquids separated from hazardous wastes, (4) liquid from sumps, (5) run-off from storage pads, (6) other waters in contact with hazardous waste?"

Ohio EPA Response: *All such liquids are deemed to be F039 listed hazardous waste and are managed accordingly.*

> **Question 22:** "Has ESOI discharged any waters in contact with hazardous waste or leachate to the Oregon City ditches? Or under its NPDES permit?"

Ohio EPA Response: *No, the permittee has not discharged any waters in contact with hazardous waste or leachate to surface water bodies.*

> **Question 23:** "Has ESOI manifested all such wastes to off-site RCRA facilities?"

Ohio EPA Response: *All such waste is managed as hazardous waste and is sent to appropriate off-site facilities.*

Comment 7: "Page D-149 states ESOI can "delist" or "decharacterize" hazardous wastes. These provisions should be stricken. This is odd language and raises questions as to just what ESOI is doing when it says it is "delisting" and "decharacterizing".

> **Question 24:** Which hazardous wastes has ESOI "delisted" or "decharacterized"? On how many occasions?"

Ohio EPA Response: *Under the hazardous waste regulations, characteristic waste can be treated to lose its hazardous characteristic (i.e., decharacterized) so that it is no longer a hazardous waste. "Delisting" refers to a process under the federal regulations for which a facility can petition for a particular waste to lose its "listing" based on certain criteria. The language in question is prospective in nature and Ohio EPA is unaware of any delisting petition granted to the facility by U.S. EPA.*

Comment 8: At Page 17-155 the calculations for insuring "negative" pressure in the containment building assumed 50% of the doors are open. There have been many problems with releases from the containment building and because of the dusty nature of K061 this is a big concern. Allowing 50% of the doors open is not protective of human health and the environment.

> **Question 25:** Has more than 50% of the door space at the containment building ever been open at once? Is there a computerized monitoring system to prevent this? Does ESOI report this? Does OEPA inspect this?"

Ohio EPA Response: *Ohio EPA has never observed more than 50% of the door space at the containment building open at the same time. Permit Condition F.5.a.v requires:*

> *"The Stabilization/Containment Building doors must remain closed at any doorway adjacent to waste handling activities and while waste is being processed, except when vehicles, personnel, or equipment are entering or exiting the building. The truck unloading side of the building must be equipped with a split curtain to control wind dispersal for unloading hoods and sort floors. The split curtain must be inspected periodically and be repaired or replaced as needed."*

Ohio EPA typically inspects for compliance with this requirement on a daily basis, Monday through Friday.

Comment 9: "At page D-156 is a discussion of which wastes should be treated in the Containment Building and which should be treated in the landfill. There should be no treatment in the landfill. The containment building provides controls to dust. Even then there has been release. These problems are magnified in the open landfill.

> **Question 26:** Does the Ohio EPA agree that during storage and treatment the containment building provides greater control of fugitive emissions than the landfill?"

Ohio EPA Response: *In accordance with the landfill operating requirements found in Permit Condition J.4, the permittee is prohibited from treating waste in the landfill if fugitive dust emissions are not under control.*

Comment 10: On page D-148 pozzalons are defined using the ASTM definition. There should be testing of all materials used as pozzolans to insure that the ASTM definition of pozzolans is met and that the waste pozzolan mixture results in a pozzolanic treatment. Not all materials presumed to be pozzolanic are effective. For example, a common use of pozzolanic materials is in road building. Fly ash is added to the concrete. In some instances the fly ash used was, in fact, deleterious to the concrete. In other instances it produced excellent results. The point is that not all fly ash has the same properties. There is a clear definition of pozzolan. But there is no test for silica, silica-alumina content or its efficacy in fact.

> **Question 27:** Fly ash is high in silica and silica-alumina content. What is the silica and silica- alumina content of K06l at ESOI?"

Ohio EPA Response: *Silica and silica-alumina content varies from generator to generator. Waste*

is tested to ensure compliance with treatment requirements.

The following are responses to written comments received on October 24, 2005, submitted by Tom Hayes, Assistant Law Director on behalf of the City of Oregon. The comments are specific to Section D - "Process Information" of the Permittee's application:

Agency Note: *The City included dozens of hand written notes/comments in the margins of a copy of Section D that was submitted as a part of their comments on the draft permit. Several of the comments of a similar nature have been grouped together into categories for a unified response from the Agency. Also, there were several modifications that impacted Section D that were authorized in the period between draft renewal permit issuance and today's action. Some of the City's comments have either been addressed or become moot because of changes authorized by these modifications. Lastly, several comments related to apparent redundancy, formatting and/or prospective language issues within the renewal application. Ohio EPA recognizes that these issues exist and as a result has required the Permittee to submit a "clean" copy of the application within 90 days of today's final action (see Permit Condition A.27(c)).*

Category 1 : The City made several references to the facility's compliance history and questioned the basis for issuance of a permit.

Ohio EPA Response: *The director did consider, among other things, the facility's compliance or non-compliance with applicable rules as a basis to issue the draft permit. Ohio EPA found that the facility has the requisite history of compliance to support issuance of today's final action.*

Category 2: The City suggested that Section D of the Part B application contradicts requirements in rule, previous ESOI permit modifications, and other sections of ESOI's Part B application. For example on page D-141 under the heading 'Containers Containing Liquids', the City indicates the following statement contradicts other sections of the permit application which states liquids will be removed and sent off-site for treatment: "Containers for landfill disposal will be inspected/spot checked and if free liquid is found in the container the free liquid will be removed prior to disposal in the landfill area. If the waste requires treatment to meet Land Disposal Restriction standards, or landfill stability requirements, the liquid will be remixed with the waste during treatment in the Stabilization/Containment Building."

Ohio EPA Response: *Ohio EPA has reviewed the application and considers it to be complete and technically adequate and therefore meeting the applicable regulatory requirements. As noted above, there were several modifications that impacted Section D that were authorized in the period between draft renewal permit issuance and today's action. Some of the City's comments have either been addressed or become moot because of changes authorized by these modifications.*

In response to the specific example noted in the category description, Ohio EPA does not agree with the assertion regarding management of liquids. The application language details how liquids are to be managed in specific situations and is not contradictory.

Category 3: The City states in several locations that Section D of the application is incomplete . An example of such a comment is provided on page D-32 in which the City indicates the following statement sets no standard and does not define a procedure: "The procedures for the management/movement and acceptance of these (rail) cars will be consistent with the procedures provided in relevant sections of the Part B Application." The City believes this section should itself set a standard and clearly define a procedure.

Ohio EPA Response: *Ohio EPA has reviewed the application and considers it to be complete and technically adequate and therefore meeting the applicable regulatory requirements.*

Category 4: The City would like a specified length of time for various tasks and compliance items to be completed. For example, under the heading 'Container Storage Areas' the City requested a maximum specified length of time for waste storage during the treatment process or after treatment.

Ohio EPA Response: *Ohio EPA has reviewed the application and considers it to be complete and technically adequate. In accordance with OAC Rule 3745-50-40 (D), today's permit is being issued with such terms and conditions as are necessary to protect human health and the environment. Where needed to assure compliance with performance standards, appropriate time frames and compliance standards have been included in the final permit.*

Category 5: The City notes that Section D of the application needs additional wording for detail or clarification. For example, on page D-38, under the heading 'Container Management Practices', the City asks whether the following statement was for trucks or rail cars: "Upon receipt at the scales, the initial weight of the vehicle will be recorded, and after unloading, the empty weight of the vehicle will be used to determine the weight of the shipment which will be directed to the mixing container, sort floor, or the campaign bin."

Ohio EPA Response: *Ohio EPA has reviewed the application and considers it to contain sufficient detail and is complete and technically adequate. In accordance with OAC Rule 3745-50-40 (D), today's permit is being issued with such terms and conditions as are necessary to protect human health and the environment. In response to the specific example noted above, the language as written is applicable to both railcars and trucks - no further clarification is needed.*

Category 6: In several locations of Section D, the text speaks to activities as "proposed" or in a future tense when many of these activities have already been accomplished or are on-going. For example, on page D-86, under the heading 'Landfill', the application states "Cell M will be excavated in a phased manner, as shown on Drawing PRMO-T01." The City notes that this activity has already occurred.

Ohio EPA Response: *Ohio EPA recognizes that some language in the application is prospective in nature and needs to be revised. However, Ohio EPA does not the view prospective language issues as significant deficiencies and considers the application to be complete and technically adequate in a manner that supports issuance of today's final action. As noted in the beginning of this part of the responsiveness summary, the Permittee is required to submit a "clean" copy of the application within 90 days of today's final action (see Permit Condition A.27(c)) to address these types of minor editorial issues.*

Category 7: The City commented that Section D of the application needs wording changed to eliminate ambiguity or make requirements more stringent. For example, on page D-86 under the heading 'Landfill', the City notes the following statement is a "blank check" and not a standard: "Landfill cells will be developed (opened), operated, and closed as necessary by ESOI's waste market demand conditions (i.e. movement of wastes to the facility)."

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA has reviewed the application and determined that it is complete and meets the applicable statutory and regulatory requirements. The permit includes such conditions as are needed to adequately protect human health and the environment. Authorized hazardous waste management activities are specifically outlined in sufficient detail within the permit terms and conditions and the approved application.*

Category 8: The City remarked that third party inspections, review, and certifications are needed for various tasks within Section D of the application. For example, on page D-147 under the heading 'Sideslope Riser Pipe Deformation', the City requests the addition of the following wording: "OEPA shall be presented an engineer design and workplan for their approval for the pipe insert signed by a professional engineer. OEPA must approve the design. OEPA shall be notified in advance of work to be performed. The permittee shall have a professional engineer monitor the installation and certify the construction."

Ohio EPA Response: *Ohio EPA has reviewed the application and determined that it is complete and meets the applicable statutory and regulatory requirements. The permit includes such conditions as are needed to adequately protect human health and the environment. Ohio EPA has included independent reviews and professional certification requirements in the permit as required by rule and as needed for protection of human health and the environment.*

Category 9: The City suggests more inspections, records, and tests be completed by ESOI as well as more notifications to the City of Oregon and Ohio EPA be required in the permit application. For example, the City requests Ohio EPA be notified in advance prior to ESOI completing the following requirement listed on page D-147 under the heading 'Sideslope Riser Pipe Deformation': "The interior of the pipe will be immediately inspected through the use of a video recording or similar device."

Ohio EPA Response: *Ohio EPA disagrees. Ohio EPA has reviewed the application and determined that it is complete and meets the applicable statutory and regulatory requirements. The permit includes such conditions related to inspections, testing, and record keeping as required by the hazardous waste regulations and as needed to adequately protect human health and the environment.*

Category 10: In several places, the City suggests elimination of words in the application it terms as "qualifier" language such as "typically", "normally" or "generally" to cite a few examples. The apparent motivation behind these suggested changes is to provide more clarity to specific requirements in the application and to enhance compliance evaluation. For example on page D-42 under the heading 'Containerized Waste Processing', the City of Oregon requests the word "typically" be removed from the following Section D statement: "For raw and treated waste that will be retained in the mixing containers, campaign bin, roll-off boxes, or other large bulk containers the following *typical* management practices will be used."

Ohio EPA Response: *Ohio EPA has reviewed the application and determined that it is complete and meets the applicable statutory and regulatory requirements. The application includes adequate language to appropriately define authorized activities and assess compliance. The permit includes such conditions as are needed to adequately protect human health and the environment.*

Category 11: Rule citations need to be added for clarity. For example the City asks that current OAC and CFR citations be added to a paragraph on Page D-171under the heading 'Chemical Properties' where a January 14, 1986 Federal Register was referenced.

Ohio EPA Response: *Ohio EPA recognizes that some language in the application needs to be updated. However, Ohio EPA does not view the language in question to be a significant deficiency and considers the application to be complete and technically adequate in a manner that supports issuance of today's final action. As noted in the beginning of this part of the responsiveness summary, the Permittee is required to submit a "clean" copy of the application within 90 days of today's final action (see Permit Condition A.27(c)) to address these types of minor editorial issues.*

Category 12: Format and arrangement of parts of Section D must be reorganized. For example, on page D-75, the City suggests a paragraph under the heading 'Tank Corrosion and Erosion' should be moved to the section titled 'Tank Areas'.

Ohio EPA Response: *Ohio EPA has reviewed the application and determined that it is complete and meets the applicable statutory and regulatory requirements. As noted in the beginning of this part of the responsiveness summary, the Permittee is required to submit a "clean" copy of the application within 90 days of today's final action (see Permit Condition A.27(c)) to address these types of editorial issues. Ohio EPA considers the application to be complete and technically adequate and that the facility has the requisite history of compliance to support issuance of today's final action*

Category 13: The City of Oregon requests in various places throughout Section D of the application that ESOI replace the word "shall" to "will" and the word "are" to "must".

Ohio EPA Response: *Ohio EPA does not agree that the words "will" and "must" will add additional clarity to statements made within the application; therefore, no change is warranted*

The following are responses to additional hand written notes made on Section D of the application by the City of Oregon. These comments did not fall within the categories noted above:

Comment 1: Page D-9: The City indicates that calculations for waste receipt from individual cars could produce 900,000 tons per 200 days whereas on page D-8, ESOI indicates that waste receipt estimates are estimated at 117,000 tons per year.

Ohio EPA Response: *As noted on page D-8 and in Permit Condition B.1 (c), regardless of the mode (rail or truck), the maximum amount of waste that can be received from off-site sources in a calendar year is 235,000 tons. Although the application describes the rail system's projected*

ability to receive up to 45 cars in a given day, it does not authorize the facility to go beyond the annual limit of 235,000 tons.

Comment 2: Page D-9: With regard to rail spur, the City states "currently the railyard is being used as storage yard for hazardous waste - this is NOT minimum risk for transport in facility under ORC 3734."

Ohio EPA Response: *The waste managed in cars at the rail yard is regulated under the hazardous waste transporter requirements of OAC Chapter 3745-53. Under these regulations, a transporter may store the waste for a period of ten days or less without triggering hazardous waste permitting requirements. The adjacent rail yard is not part of the Permittee's facility. Ohio EPA considered the applicable renewal issuance criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action.*

Comment 3: Page D-10: With regard to railcar positioning within the facility, the City indicates the need to require a "Best Management Practice".

Ohio EPA Response: *Today's final renewal permit includes sufficient conditions to ensure management of waste in rail cars will be completed in a manner that is protective of human health and the environment. Ohio EPA considered the applicable renewal issuance criteria and has determined that the applicant has the requisite history of compliance that demonstrates reliability, competence and expertise to operate the facility thus warranting issuance of this action.*

Comment 4: Page D-18: The City states that the tables provided on D2000L-G01 detailing storage capacity of each container storage area does not match text of Volume 3 Section D and are inadequate.

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate what is inconsistent or inadequate, Ohio EPA has no basis to require any change to the language.*

Comment 5: Page D-23: The City asked what the following statement means - "A corrosion allowance of 1/8 inch beyond design thickness for carbon steel storage containers will be used as a departing point for annual container assessment."

Ohio EPA Response: *This language simply indicates that the steel storage containers were constructed beyond the minimum design thickness by 1/8 inch to account for some wear due to corrosion.*

Comment 6: Page D-23: The City questioned what standard the following statement is discussing - "Continued use of the containers will be based on an annual engineering assessment of the condition of container thickness and the evaluation of welds."

Ohio EPA Response: *Engineering assessment will be based on the design standards which are detailed in Drawing D2000L-S20 and Appendix D.1.*

Comment 7: Page D-28: The City inquires why free liquids are placed in two columns of the estimated container corrosion rates (Table D-2).

Ohio EPA Response: *In accordance with Condition B.1 (d) of the final permit:*

> *"The Permittee must not solicit liquid hazardous or non-hazardous wastes generated off-site for treatment, storage or disposal. However, in the event that the Permittee inadvertently receives liquid hazardous or non-hazardous wastes that it is not permitted to treat or dispose, the Permittee may store such wastes until proper off-site treatment, storage or disposal can be accomplished. The Permittee must make a good faith effort to expeditiously accomplish such off-site treatment, storage or disposal. At the request of Ohio EPA, the Permittee must demonstrate to the satisfaction of Ohio EPA that such a good faith effort was made. The Permittee is permitted to treat, store and dispose incidental or extraneous free liquids that may be inadvertently received with solid phase hazardous or non-hazardous wastes that the Permittee is permitted to treat, store or dispose."*

Free liquids are listed in Table D-2 because of the potential to receive incidental or extraneous free liquids with solid phase waste.

Comment 8: Page D-28: The City questions whether or not ESOI has ever completed the task indicated in the statement - "As deemed appropriate by ESOI, random samples of waste may be extracted from drum(s) for analysis. The City indicates they do not feel this is meaningful protection.

Ohio EPA Response: *Condition B.3 (g) of the final permit requires fingerprint analysis of containerized waste. The condition states the following:*

> *"Containerized Waste: The Permittee shall sample and conduct a fingerprinting analysis on a composite sample prepared from material taken from the greater of the cube root of the number of drums in a shipment or 10% of drums by WSID, which are part of a single truck load. A Minimum of 10% of the drums in every truck load received by the facility regardless of their origin and/or waste type shall be sampled. A composite sample shall be acceptable only if it is composed of sub-samples of the same WSID. Shipment containing multiple WSID's may require multiple composite samples. One hundred percent of the drums shall be opened and visually inspected.'*

The City's comment is with a portion of the application which defines what the Permittee will do if waste, after visual inspection and initial composite sampling, appears to vary in quality from container to another container. This additional sampling has been completed in the past by the Permittee when it was visually apparent that the waste was inconsistent from the drums initially fingerprinted.

Comment 9: Page D-41: The application states: "Several options exist for the management and processing of these various wastes; they are as follows (refer to Drawing D2000-F01):" The City requests the following bullet point from the list be stricken - "Storage prior to brokering (transporting off-site to recycling, treatment, disposal facility, etc.)"

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate why the referenced application language should be stricken, Ohio EPA has no basis to require removal of the language. The described brokering activities do not conflict with regulatory requirements.*

Comment 10: Page D-48: Under the topic "Maintenance of Waste Containers" the City requests the following statement be stricken from the application - "Please note that the following 'bulk' waste storage areas inside the Stabilization/Containment Building are not considered RCRA container storage areas, but rather RCRA containment building storage areas and, therefore, do not have to be closed when storing bulk waste/waste piles except for any applicable area specific split curtain requirements: Debris Sort Floors (Area A1), Campaign Bin (Area A2), and Oversized Material Floor (Area F). However if RCRA containers are stored in these containment building storage areas, they will remain closed at all times except during waste sampling, waste treatment, waste addition and/or waste removal activities."

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate why the referenced application language should be stricken, Ohio EPA has no basis to require removal of the language. Container management practices detailed in this portion of the application are consistent with applicable regulatory requirements.*

Comment 11: Page D-51: The City requests the following statement from the Aisle Space section be removed - "Adequate aisle space will be provided within each container storage area to permit easy access to all containers during inspections and miscellaneous operational activities."

Ohio EPA Response: *Absent any specific information in the City's comment that would indicate why the referenced application language should be stricken, Ohio EPA has no basis to require removal of the language.*

Comment 12: Page D-76: The City suggests that tank areas must be surrounded by containment barriers that are capable of holding 110% of the total volume of the largest tank, whereas, the application has proposed the containment will be at 100% the largest tank volume.

Ohio EPA Response: *OAC Rule 3745-55-93 (E) requires secondary containment for tank systems to be designed and operated to contain 100% of the largest tank within the containment boundary. Absent any specific information in the City's comment that would indicate why the containment volume should be increased to 110%, Ohio EPA has no basis to require revision of the language.*

Comment 13: Page D-176: The City suggests 46% or 40% replace the 51% stated by ESOI as the cutoff in the following statement made under the Debris Process section - "Waste shipments that exceed 51% debris will require processing before stabilization can be conducted."

Ohio EPA Response: *As detailed in the application, the decision to further process waste shipments that exceed 51% debris is a cost effectiveness consideration. Regardless of whether the waste receives "further processing" or not, treated waste is required to meet disposal standards prior to placement in the cell. This decision process is captured graphically in Figure D-15.*

Comment 14: Page D-179: The City states under the headings of Encapsulation Processes and Procedures, Microencapsulation in Containers, and Macroencapsulation in Containers that these portions of the application should not be considered as confidential information.

Ohio EPA Response: *Under OAC Rule 3745-50-30, an applicant can make a request that "trade secret" information contained in the application be managed as such by the Agency.*

Comment 15: Page D-194: The City states under the heading of Stabilization Mix Design, that this section should not be confidential information.

Ohio EPA Response: *Under OAC Rule 3745-50-30, an applicant can make a request that "trade secret" information contained in the application be managed as such by the Agency.*

Ohio EPA changes made from draft to final permit:

Note: Ohio EPA staff identified several typographical and consistency issues with the draft permit that have been corrected as detailed below:

1) Permit Condition A.27 (b) - The time frame for submission of updated cost estimate, financial assurance and liability mechanism information was revised from 60 days to 90 days to be consistent with the requirement to submit a "clean" version of the permit application found in Permit Condition A.27 (c)

2) Permit Condition A.27 (b)(iii) - This condition in the draft permit erroneously referenced financial assurance requirements (already covered by sub-paragraph (ii) of the condition) in lieu of third party liability mechanism information. The final permit was correct to cite liability mechanism information.

3) Module F - CONTAINMENT BUILDING STORAGE & TREATMENT - Regulatory citations were revised throughout this module to correctly cite containment building regulations found in Chapter 205 of the Administrative Code.

End of Responsiveness Summary

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