

**Terms and Conditions
Strikeout Version**

Envirosafe Services of Ohio, Inc.

**Lucas County
OHD 045 243 706**

Note

The following pages only includes language that is being removed from the current Terms and Conditions. Please refer to document handle number 742798 for new language being proposed.

~~EPA in accordance with Ohio's hazardous waste rules, in the form of an administrative Class 1 permit modification request without prior Director's approval, all the permit modification requests which it submitted after September 16, 2015, and which Ohio EPA has approved or acknowledged but not incorporated in the renewal permit and/or permit application, so that the submitted information can be incorporated in the renewal permit and/or permit application. For each permit modification request submitted, prior to the date of journalization and for which Ohio EPA approval or acknowledgment occurs after the date of permit journalization, the Permittee must submit the approved or acknowledged permit modification request to Ohio EPA within 60 days of such approval or acknowledgment in accordance with Ohio's hazardous waste rules, in the form of an administrative Class 1 permit modification request without prior Director's approval, so that the submitted information can be incorporated in the renewal permit and/or permit application.~~

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 a qualified professional engineer, pursuant to OAC Rule 3745-55-15, and until the Director releases the Permittee from financial assurance requirements pursuant to OAC Rule 3745-55-43, 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; and
 - (vii) Inspection schedules, developed in accordance with OAC Rules 3745-54-15, 3745-

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 the 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 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 Rule 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.

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 Teepee Burner
WMU 12	Former Bill's Road Oil Operation

* WMU 2, WMU 3, and 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
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, 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 sixty (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 sixty (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 sixty (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 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 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)

Ohio EPA has determined, based on the RFI Phase I and other relevant information, that implementation of containment corrective measures are necessary and appropriate for certain units while the Permittee completes the RFI. These specific corrective measures are outlined in permit condition E.9(b).

If Ohio EPA determines, based on additional or final results of the RFI and any other relevant information, that additional 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 sixty (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 sixty (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 thirty (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.~~

(c) CMS Final Report

~~Within thirty (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 sixty (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)

~~Ohio EPA has determined, based on the RFI Phase I and other relevant information, that implementation of containment corrective measures are necessary and appropriate for certain~~

~~units while the Permittee completes the RFI. These specific corrective measures are outlined in permit condition E.9(b) below.~~

~~Upon completion of the RFI, the Permittee may be required to implement additional Corrective Measures. 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.

(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) Selected Containment Corrective Measures

~~Based on results of the RFI Phase I and subsequent field work, Ohio EPA has determined that the appropriate remedy for WMUs 1, 5, 6 and 7 includes containment. Ohio EPA has determined that it is appropriate to require implementation of the containment remedy for these units while the Permittee completes Phase II RFI activities in accordance with Permit Condition E.5. U.S. EPA has established containment as the presumptive remedy for municipal landfills to protect human health and the environment and save time and costs.~~

(i) WMUs 5, 6, & 7 – Leachate Collection System Performance Objectives

~~The leachate collection and removal systems for WMUs 5, 6, and 7 were installed and fully operating by July 1, 2007. The leachate collection and removal systems for WMUs 5, 6 and 7 shall be maintained and operated as detailed in the Operations, Maintenance & Performance Monitoring (OMPM) Plan for the Leachate Collection Systems at Waste Management Unit Nos. 5, 6, and 7. The~~

Permittee must minimize impacts to ground water at each WMU; establish an inward hydraulic gradient at each WMU; and reduce head levels by removing leachate to the lowest level which is practicably achievable at a frequency that will promote removal without compromising equipment functionality. These performance objectives will be implemented by the following:

- (a) The Permittee will decrease the volume of the containment sources by reducing head levels within the WMUs. The Permittee will demonstrate that this objective is achieved at each WMU by documenting that the head levels at established interior piezometers, as identified in Table 1.0 of the OMPM Plan, have a decreasing trend. This objective must be sustained until Permit Condition E.9(b)(i)(b) is established.
- (b) The Permittee will demonstrate that an inward hydraulic gradient is established by documenting that the leachate level at a WMU's interior piezometers have an average head potential 1 foot lower than the measured liquid potential in established perimeter shallow till wells, as identified in Table 1.0 of the OMPM Plan. This objective must be sustained until Permit Condition E.9(b)(i)(c) is established.
- (c) WMU 6: The Permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 566.9 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 7: The Permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 570.8 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 5 Central Area: No later than July 1, 2016, the Permittee will ensure that the average of the leachate head level measurements from the deep interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 557.1 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.

WMU 5 West Area: No later than July 1, 2016, the Permittee will ensure that the average of the leachate head level measurements from the deep

~~interior piezometers, as identified in Table 1.0 of the OMPM Plan, is maintained below a Target Leachate Level of 564.9 ft. MSL and that the WMU is effectively dewatered in the vicinities of the shallow interior piezometers as identified in Table 1.0 of the OMPM Plan.~~

~~(d) — The Permittee will implement the following items as identified in the Performance Monitoring Program of the OMPM Plan:~~

~~(i) — Response actions if the average of the leachate head level measurements from the deep interior piezometers within a WMU exceed the Target Leachate Level after the establishment of the applicable provision of Permit Condition E.9(b)(i)(c).~~

~~(ii) — Response actions to rectify deviations from decreasing trends when liquid levels in individual deep interior piezometers exceed target leachate levels after the establishment of the applicable provision of Permit Condition E.9(b)(i)(c).~~

~~(iii) — Response actions that the Permittee will implement when shallow interior piezometers that do not meet the definition of dewatered after the establishment of the applicable provision of Permit Condition E.9(b)(i)(c).~~

~~(c) Corrective Measures Completion Report~~

~~Within forty five (45) days of completion of corrective measures implementation for corrective measure (CM) in permit condition E.9, the Permittee shall submit to Ohio EPA a CM Completion Report, Operation and Maintenance (O&M) Plan and, if necessary, a performance monitoring program for each CM.~~

~~(i) — If necessary, Ohio EPA shall provide written comments on the CM Completion Report and O&M Plan to the Permittee.~~

~~(ii) — Within forty five (45) days of receipt of Ohio EPA's comments, the Permittee shall submit either an amended or new CM Completion Report and O&M Plan.~~

~~(iii) — Ohio EPA shall approve or modify and approve, in writing, the amended or new CM Completion Report and O&M Plan. The CM Completion Report and O&M Plan, as approved or as modified and approved, shall be incorporated into this permit and become an enforceable condition of this permit. Subsequent changes to the approved CM Completion Report and O&M Plan must be authorized by Ohio EPA.~~

(d) Permit Modification

In case of a newly discovered waste management unit that requires corrective measures or Ohio EPA determination that additional corrective measures are necessary, Ohio EPA will initiate a permit modification, as provided by OAC Rule 3745-50-51 to require implementation of the corrective measures authorized.

(e) 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 thirty (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 ~~thirty (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.

E.11 Corrective Action for Newly Identified WMUs or 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.

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

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 the 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 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 IGMWP 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.

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 approved Part B 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 approved Part B 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 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).~~

~~Data are compared to comparison standards defined in Permit Condition K.2(b)(i), (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 approved Part B 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) Reserved.~~
 - ~~(ii) The ground water monitoring system must yield samples in upgradient wells that represent the quality of the background ground water unaffected by leakage from the facility; and, in downgradient 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 approved Part B permit application, and with Permit Condition F.2(e)(iv), 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 in Attachment K-2 of the permit terms and conditions. Within thirty (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, 2015) and *Ohio EPA's Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring, Chapter 9 (2009)*. 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 (1) year from the date of installation;~~
 - ~~(ii) Within one (1) 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, the Permittee must submit a request for permit modification in accordance with Permit Condition K.8.~~

~~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.~~

~~(b) Monitoring Constituents and Comparison Standards~~

~~Constituents specified below must be monitored at the locations specified in Permit Condition K.2(a) 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 Permit Condition K.2(b)(i) or greater than a comparison standard determined in accordance with Permit Condition 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~~

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 listed in Appendix E.7 of the approved Part B permit application:

Constituent
Barium (dissolved)
Cyanide at R-6

(iii) For constituents without comparison standards listed in Appendix E.7 of the approved Part B permit application (e.g. new or replacement wells or Appendix to OAC Rule 3745-54-98 constituents where comparison standards are required as a result of a well being identified as affected), comparison standards must be developed in accordance with the following requirements and submitted as a permit modification to Appendix E.7 of the approved Part B permit application.

(a) The Permittee must evaluate currently available analytical results 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.~~

- ~~(b) — In the case that the Permittee finds, in accordance with Permit Condition K.2(b)(iii)(a), that the concentration 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)(iii)(a), that the concentration (first analytical result following the approval of this permit modification) of a constituent at a well that 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 8 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 in Appendix E.7 and developed in accordance with Permit Condition K.2(b)(iii)(c) and OAC Rule 3745-54-97(G), (H), and (I) may be updated in accordance with the following requirements:~~
- ~~(i) — Background is not updated with less than 4 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 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)(iii)(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 widow 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.~~
- (i) ~~Background data for wells with established statistical comparison standards and a background size less than 16 must be re-evaluated on a fixed schedule of every four years, beginning in calendar year 2012. Data points available to the Permittee on July 1, 2012 (and on the first day of July every four years thereafter) will be used for recalculation of comparison standard values, provided that four or more new data points are available for the constituent well combination being monitored as required in K.2(b)(iii)(d)(i). Recalculated statistical comparison standards must be submitted to Ohio EPA in the form of a permit modification by the last day of the calendar year during which the recalculation is performed, based on the four year schedule beginning in 2012. The Permittee may elect to recalculate individual statistical comparison standards at any well more frequently than specified herein, provided that the Permittee complies with the requirements of K.2(b)(iii)(d)(i) through K.2(b)(iii)(d)(iv).~~
- (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.~~

~~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 ground water 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), (ii), and (iii), 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 approved Part B permit application.~~

- (d) ~~Compliance Period~~
~~OAC Rule 3745-54-96~~

~~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.~~

~~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 approved Part B permit application, are exceeded in the wells listed in K.2(a), the Permittee must:~~

- (a) ~~In accordance with OAC Rule 3745-54-99(H), notify the Director in writing within seven (7) days of this finding.~~
- (b) ~~Within ninety (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 3745-54-101 and 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:~~
- (i) ~~Notify the director in writing, within seven (7) 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 ninety (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 ninety (90) day requirement for a permit modification unless the "Other Source Demonstration" is deemed successful by the Agency prior to the ninety (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 approved Part B permit application.~~

- ~~(b) Each well must be checked for the present 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 approved Part B 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 approved Part B 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 approved Part B permit application. Instruments must be calibrated as described in Appendix E.9 of the approved Part B permit application.~~

- ~~(e) Sampling equipment must be decontaminated using techniques described in Appendix E.9 of the approved Part B permit application.~~

- ~~(f) Purge water must be disposed in accordance with procedures described in Appendix E.9 of the approved Part B 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 approved Part B permit application.~~
- (ii) ~~Laboratory selection for sample analysis shall 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 approved Part B permit application.~~
 - (ii) ~~Field and analytical data must be validated in accordance with the procedures specified in Appendix E.12 of the approved Part B 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 approved Part B 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 thirty (30) days of the date of installation.~~

~~K.6 — Monitoring Program and Data Evaluation~~

~~— OAC Rules 3745-54-96, 3745-54-98, 3745-54-99 and 3745-54-100~~

~~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. The Permittee may utilize analysis of wells which are sampled in accordance with this permit and in the calendar month prior to an April or October semi-annual sampling event to meet the requirements of this condition. 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 approved Part B permit application. When the initial sample concentration of a constituent is equal to or exceeds its associated comparison standard in Permit Condition K.2(b)(i) or exceeds its associated comparison standard in Permit Condition K.2(b)(ii), 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 exceedance will be considered confirmed only if the analysis results from both laboratories exceed the associated comparison standard. If the exceedance is not confirmed, the constituent will be considered to be not elevated and well will remain unaffected and in detection monitoring, except as described in Permit Condition K.6(d), below:~~

(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) ~~Sampling and analysis of constituents listed in Appendix to OAC Rule 3745-54-98 must be conducted in accordance with the following:~~

~~(a) Whenever the concentration of a hazardous constituent listed in Permit Condition K.2(b)(i) is confirmed to be equal to or greater than its associated comparison standard, or whenever the concentration of a constituent listed in Permit Condition K.2(b)(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 Part B 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 have been detected.~~
- (iii) ~~All non-naturally occurring constituents reported to be detected at or above the practical quantitation limit (PQL) 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)(iii).~~
- (iv) ~~The Permittee must report to the Director in writing, according to the schedule in Permit Condition K.7:~~
 - ~~(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) and through (g);~~
 - ~~(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 accordance with Permit Condition K.6(e)(iii), in any of the wells adjacent to the well with the initial exceedance of a comparison, determined in accordance with Permit Condition K.2.(b)(i), (ii), and (iii), 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 detected at or above the practical quantitation limit (PQL) or above its comparison standard will be assumed to be elevated. The Permittee must identify the constituents that are elevated in accordance with the procedures in Permit Conditions K.2(b)(iii) 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 sampling and analyzing for the new constituents in the associated affected wells during the next semi-annual sampling event.~~
- (h) ~~Affected well will revert to unaffected status when there have been no elevated constituents detected at the well for three consecutive sampling events. Non-naturally occurring constituents at the site listed in Permit Condition K.2(b)(i) or the Appendix to OAC Rule 3745-54-98 are no longer considered elevated when they have not been detected at or above the method detection limit (MDL) for three consecutive sampling events. Naturally occurring constituents listed in Permit Condition K.2(b)(i) or K.2(b)(ii) or the Appendix to OAC Rule 3745-54-98 are no longer considered elevated when they are less than the associated comparison standard for three consecutive sampling events. Constituents that were added to a well's sampling and analysis list must remain on the well's sampling and analysis list.~~
- (i) ~~If a constituent's analytical result is equal to or greater than its comparison standard for non-naturally occurring constituents, or greater than its comparison standard for naturally occurring constituents, then in accordance with OAC Rule 3745-54-98(G)(1), the Permittee must notify the director, in writing, within seven (7) days of this finding. Comparison standards are determined in accordance with Permit Conditions K.2(b), K.6(c), (e), (f), and (g). 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:~~
- (i) ~~Notify the Director, in writing, within seven (7) 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) exceedance 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 exceedance also causes an exceedance of the risk standard in the ACL model in Appendix E.11 of the approved Part B permit application, 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 ninety (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 ninety (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 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).
- (k) The Permittee will evaluate all elevated constituents in accordance with the ACL model in Appendix E.11 of the approved Part B permit application.
- (l) When evaluating the results of the ACL model:
 - (i) The comparison standard for non-carcinogenic risk is a hazard index of unity. The comparison standard for carcinogenic risk is 1.0×10^{-5} . The Permittee must calculate the total non-carcinogenic 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 Data Usability Guidelines in Attachment F of Appendix E.12 of the approved Part B permit application.
 - (ii) If the total non-carcinogenic 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) ~~Once the results of the ACL model have been evaluated for an area, and that area is determined to be subject to Corrective Action in accordance with Permit Condition K.3, it is not necessary to reevaluate the ACL for that area unless one or more of the following conditions apply:~~
 - ~~(a) — New constituents of concern or wells are added to the affected well listing,~~
 - ~~(b) — Significant changes in constituent concentrations are observed, or~~
 - ~~(c) — New information regarding model input becomes available (e.g., toxicity data, fate and transportation parameters).~~
- (iii) ~~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 exceedance 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 3745-54-97(J)~~

- (a) ~~The Permittee must submit semi-annually both a Preliminary Data Report and a Final Data Report and Evaluation for each semi-annual sampling and analysis event, conducted in April and October each year. 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, 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 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 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) must include all the information listed below for: 1. Replacement well sampling required by Permit Condition K.1(e); 2. Background sampling for statistics required by Permit Condition K.2(b)(ii)(c); 3.~~

~~Semi-annual sampling and analysis events required by Permit Condition K.6(b); 4. Appendix to OAC Rule 3745-54-98 sampling and analysis required by Permit Condition K.6(e)(i) and K.6.(f); and, 5. Annual Appendix to OAC Rule 3745-54-98 sampling and analysis required by Permit Condition K.6(g).~~

- ~~(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 approved Part B 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 the 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.12 of the approved Part B permit application. Compliance will be facilitated by referring to:~~

~~*Ohio EPA Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring;*~~

- ~~(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 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) Identified 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.);~~
 - (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) ~~The date the owner or operator completed their final review of the analytical laboratory's verification of the accuracy and precision of the analytical data and determined its quality and a signed statement of validity. This review must be based upon the elements in Permit Condition K.7(b)(vii) and the data validation procedures in Appendix E.12 of the approved Part B permit application;~~
 - (v) ~~Plan maps, cross sections, and evaluations for each elevated constituent showing the extent of the plume in accordance with permit Condition K.6(j);~~
 - (vi) ~~The results of applying the ACL model, including a discussion of the effect of using any qualified data;~~
 - (vii) ~~A report on the effectiveness of the IGWMP, performed by a qualified hydrogeologist; and,~~

- (viii) ~~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 Permit Conditions:~~
- ~~(a) — K.1(c), to add, remove or replace wells;~~
 - ~~(b) — K.1(e)(iv), 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;~~
 - ~~(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 3745-54-101~~

~~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 within ninety (90) days of this determination to make any appropriate changes to the program.~~

~~K.9 — Compliance Schedule~~

~~— Reserved~~

ATTACHMENT K-1
Monitoring Wells in the Integrated Ground Water Monitoring Program
Permit Condition K.1.(a)

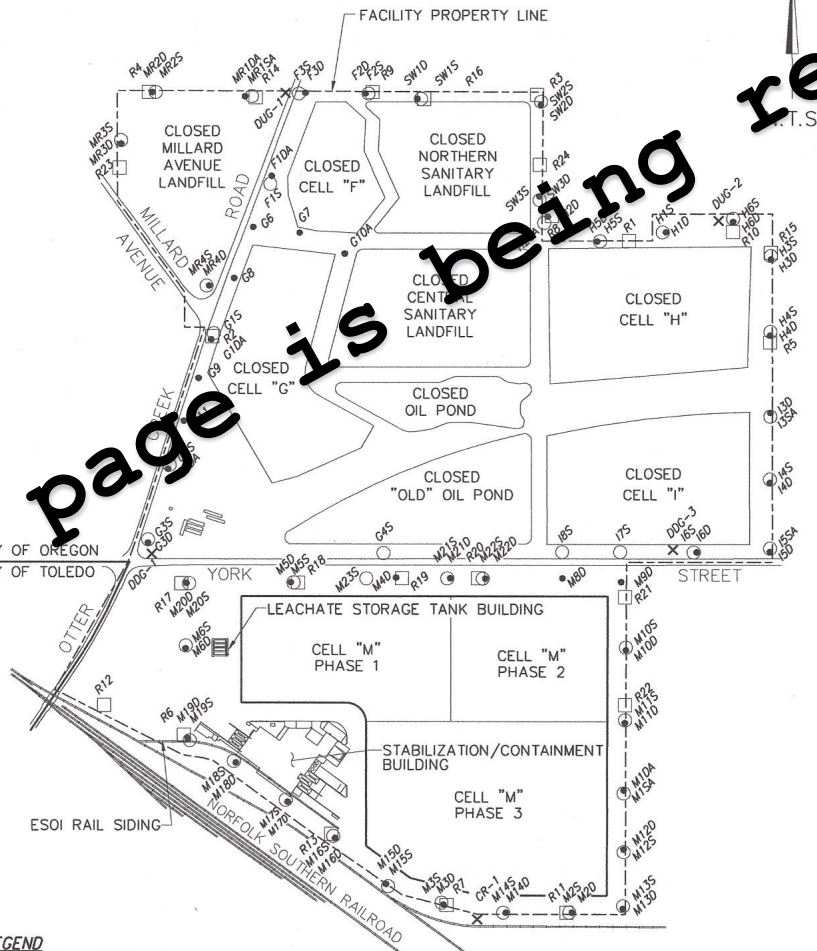
"S" Wells		"D" Wells		Bedrock Wells
F1S	M6S	F1DA	M4D	R-1
F2S	M10S	F2D	M5D	R-2
F3S	M11S	F3D	M6D	R-3
G1S	M12S	G1DA	M8D	R-4
G2S	M13S	G2DA	M9D	R-5
G3S	M14S	G3D	M10D	R-6
G4S	M15S	G6	M11D	R-7
H1S	M16S	G7	M12D	R-8
H2SA	M17S	G8	M13D	R-9
H3S	M18S	G9	M14D	R-10
H4S	M19S	G10A	M15D	R-11
H5S	M20S	G11	M16D	R-12
H6S	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
M1SA	SW1S	I4D	MR2D	R-20
M2S	SW2S	I5D	MR3D	R-21
M3S	SW3S	I6D	MR4D	R-22
M5S		M1DA	SW1D	R-23
		M2D	SW2D	R-24
		M3D	SW3D	CR-1*
				DDG-1*
				DDG-3*
				DUG-1*
				DUG-2*

*Bedrock Water Level Monitoring Wells. These wells are utilized for collected water level measurements only.

4/29/2016 10:24:56 AM W:\Projects\Projects A-E\1080156\CAD\From E:\DB0132\ATT_K-2_02.dwg

ENVIROSAFE SERVICES OF OHIO, INC.
 HAZARDOUS WASTE PERMIT RENEWAL
 PAGE 156b OF 165

ATTACHMENT K-2
 INTEGRATED GROUND WATER MONITORING PROGRAM
 MAP OF MONITORING WELL LOCATIONS



- (i) The Permittee must return to a leachate level of less than 12 inches as defined in Appendix D.5 for each sub-cell in Cell M after a temporary excursion by operating the PLCS pumps in the affected landfill collection sumps 24 hours per day, 7 days per week.
- ~~(a) The Permittee must monitor the quality of leachate pumped from the PLCS, where applicable, of each cell in accordance with Permit Condition M.7(e).~~
- (b) 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.
- (c) The Permittee must monitor the PLCS and SLCS of Cell M for the production of liquid. When a sub-cell that is not capped or closed that normally produces liquid every week produces no liquid for two sequential calendar weeks, the Permittee will, unless liquid production has resumed, verify that the pump and its control system are operable before concluding that no liquid is present in the sub-cell sump. If the pump or its control system is found to be inoperable, then the Permittee must repair or replace it as appropriate to restore pumping capability.

M.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;

- (c) 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
 - (i) measurements of wind direction;
 - (ii) average and maximum wind speed; and,
 - (iii) precipitation accumulated over the previous 24 hour period.

- (c) The Permittee must record leachate level readings in the Cell M sub-cells at the beginning of each working day and after completion of operator-assisted leachate storage or shipment activities at the end of each working day. The start time and end time of each working day is documented on inspection form MF-18b. These leachate level readings will be used to evaluate compliance with Permit Condition M.3(a)(i) and OAC Rule 3745-57-03(A)(2).
 - (i) In evaluating compliance with Permit Conditions M.3(a)(i), (ii), and (iii), Ohio EPA will consider factors such as power failures, equipment failures, maintenance activities, the safety of personnel or the environment, declared Level 2 or 3 snow emergencies affecting availability of transportation, or the consequences of other natural or manmade disasters.

- (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 for each sub-cell in Cell M recorded in accordance with Permit Condition M.7(c); 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.~~
 - (i) ~~The Permittee must annually test leachate from each sub-cell used to dispose of waste containing PCBs in accordance with Permit Condition M.1(d)(v)(a) for total polychlorinated biphenyls (PCBs).~~