



# Modified Ohio Hazardous Waste Facility Installation and Operation Permit

Division of Environmental Response and Revitalization

Permittee: Materion Brush Inc. U.S. EPA ID: OHD004212999

Facility Name: Materion Brush Inc.

Mailing Address: 14710 W Portage River South Rd

City: Elmore State: Ohio Zip: 43416

Operator Name: Materion Brush Inc.

Mailing Address: 6070 Parkland Boulevard

City: Mayfield Heights State: Ohio Zip: 44143

Facility Street Address: 14710 W Portage River South Rd

City: Elmore State: Ohio Zip: 43416

## Permit Modification

This Modified Ohio Hazardous Waste Facility Installation and Operation Permit is issued pursuant and subject to Section 3734.05(I) of the Ohio Revised Code and Rule 3745-50-51(J) of the Ohio Administrative Code.

The Ohio Hazardous Waste Facility Installation and Operation Permit for the facility with the above-referenced ID number as issued by the Ohio Environmental Protection Agency and journalized on September 20, 2011, is hereby incorporated by reference in its entirety, except as it may be modified herein. This modification of the permit shall remain in effect until such time as the Ohio Hazardous Waste Facility Installation and Operation Permit is renewed, modified, withdrawn, suspended, or revoked.

The modified Terms and Conditions of this permit are attached hereto and are incorporated herein by reference. The modified Terms and Conditions supersede and replace the corresponding pages found in the September 20, 2011 renewal permit.

## Permit Modification Approval

Entered into the Journal of the Director on:

03/30/2021

Date:

Laurie A. Stevenson, Director  
Ohio Environmental Protection Agency

## **MODULE E - CORRECTIVE ACTION REQUIREMENTS**

### **E. CORRECTIVE ACTION SUMMARY**

The Permittee began corrective action under the authority of U.S. EPA. A Visual Site Inspection (VSI) was conducted in August 1987 and identified 37 Waste Management Units (WMUs). Of the original 37 WMUs, U.S. EPA determined that 24 WMUs should be included for further action during the RCRA Facility Investigation (RFI).

After further consideration, U.S. EPA ultimately determined that only 19 WMUs and one Area of Concern (AOC) must be included in the RCRA Facility Investigation (RFI). However, three additional WMUs were later added to the RFI, for a total of 22. These 22 WMUs and the AOC are listed in Permit Condition E.3(a) and can be found in Exhibit B-4, Volume 3 of the permit application.

Conditional approval of the RFI Workplan was provided by U.S. EPA on September 29, 1994. The Permittee submitted the final RFI Workplan on November 3, 1994. The facility investigation was conducted in two phases. Phase I was implemented between November 1994 and September 1995. The primary focus of Phase I was release verification at individual WMUs and the collection of data characterizing the environmental setting. Approximately 240 soil, sediment, sludge, ground water, and surface water samples were collected. As a result, the facility's Interim RFI Report was submitted to U.S. EPA in September 1995. Based on the Phase I results, the Permittee elected to implement Interim Stabilization Measures (ISM) for the PCE AOC (release area) to minimize the further spread of contamination in soil and ground water and to reduce the potential threat to human health and the environment. More information concerning these actions can be found in the Final RFI Report dated August 8, 2000.

The Phase II Scope of Work (SOW) was submitted to U.S. EPA in September 1995. The primary focus of Phase II was to determine the extent of contamination and to collect data necessary to support a baseline risk assessment. The Phase II field activities began in June 1996 and ended in December 1996. Over 200 soil, sediment, sludge, ground water, and surface water samples were collected and analyzed. Aquifer testing, sludge depth determination, ground water modeling, ecological reconnaissance inventory, and a baseline risk assessment were part of Phase II. The Permittee submitted the Final RFI Report on August 27, 1997. U.S. EPA approved the Phase II Continuation Scope of Work on October 15, 1999. The results of the Ground Water Quality Assessment Report submitted on February 16, 2000, and subsequent amendments were included in a Revised RFI Report which was submitted by the Permittee on August 25, 2000.

Upon issuance of an Ohio Hazardous Waste Facility Installation and Operation Permit Renewal (renewal permit) on June 14, 2001, Ohio EPA assumed corrective action oversight at the facility. Therefore, the Permittee must follow the work schedule in this permit and submit all required reports to Ohio EPA.

The RFI Final Report was approved by US EPA on January 19, 2001 and was

approved by Ohio EPA on February 2, 2005. This report concluded that 3 waste management units must be addressed in the Corrective Measures Study (CMS) phase of the project. A fourth waste management unit, WMU No. 28, the Oil Separator Pond, was also investigated and it was subsequently determined that it should not be included in the CMS phase. Another WMU was added in 2009 at Ohio EPA's request.

The CMS workplan was approved by Ohio EPA on February 23, 2006. The CMS workplan and implementation schedule required submittal of a Vapor Intrusion Investigation Workplan, Unit 4 (Central Magnesium Fluoride Lagoon) Supplemental Investigation Workplan, and Project Management Plan. Final versions of these plans were submitted in June 2007, August 2007, and January 2008 respectively.

On May 26, 2009, the CMS workplan was revised to incorporate an evaluation of Lagoon 5 (WMU No. 9). This revision was necessary as a condition of the SWMU No. 9 interim measures approval letter of March 4, 2009. This CMS revision was approved by Ohio EPA on September 15, 2009.

Ohio EPA approved the Unit 4 Supplemental Investigation workplan on September 13, 2007. The Supplemental Investigation Report was approved by Ohio EPA on October 29, 2010. The facility submitted the corrective measures study report for Unit 4 to Ohio EPA on February 25, 2011. A second revision to the Unit 4 CMS was received November 2, 2011.

Corrective measures for Unit 4 were approved through a director-initiated permit modification on November 28, 2012. Ohio EPA conditionally approved the Corrective Measures Final Design Specifications (aka CMI) for Unit 4 on April 5, 2013, and the ground water monitoring plan on March 24, 2014. Unit 4's Construction Completion Report was received by Ohio EPA on January 24, 2014, and the Permittee continues to monitor ground water in accordance with the most recent "Groundwater Monitoring Plan Unit 4 (Former Mag/Fluoride Lagoon)."

The Permittee filed an environmental covenant with the Ottawa County Recorder's office on February 23, 2018, limiting the use of certain areas of the facility to industrial purposes only and prohibiting the use or extraction of ground water from underneath certain parcels of the Permittee's property.

The Vapor Intrusion Investigation workplan for non-residential buildings located above a ground water plume containing volatile organic compounds (VOCs) was submitted to Ohio EPA on October 18, 2006 and was approved by Ohio EPA on August 23, 2007. Phase I and Phase II investigations were completed between August 2007 and September 2008. The facility submitted results of sub-slab soil gas sampling on August 30, 2010. Ohio EPA approved the sub-slab soil gas sampling results in a letter dated October 26, 2010.

The Permittee completed a multi-year assessment of the Vapor Intrusion (VI) pathway for several areas above the Integrated Groundwater Monitoring Program (IGWMP) plume. On June 28, 2013, Ohio EPA received a document titled "RCRA CMS Vapor

Intrusion Assessment Report of the Integrated Groundwater Monitoring Program Plume.” The VI assessment found that all of the investigated areas were below the cancer and non-cancer risk standards of  $1E-5$  and 1. Site-specific hydrogeologic conditions and the low concentrations in the media evaluated supported the conclusion that VI associated with the IGWMP plume was below unacceptable levels under current site conditions.

Due to a planned change in building use at the By-Product Recovery Building (Bldg. 46), the Permittee investigated the human health risk for human occupancy in the building. The Permittee conducted indoor air sampling at Bldg. 46 on December 4, 2013. Indoor air concentrations were found to be below the calculated risk screening levels.

On April 9, 2020, the Permittee informed Ohio EPA that Bldg. 46 would be repurposed to house a manufacturing line. The Permittee would be decommissioning and removing all equipment and tankage, replacing the concrete floors throughout most of Bldg. 46, and installing a sub-slab depressurization system to address potential vapor intrusion concerns. Requirements to address potential vapor intrusion concerns are addressed in Permit Condition F.7(i) below.

A CMS report for Units 26 (South Hyde Run), 38N (North Hyde Run), and 38S (North Hyde Run Ditch– South) located within Hyde Run Ditch was submitted to Ohio EPA on September 24, 2018. This CMS report developed and evaluated various corrective action alternatives for the three waste management units.

In addition to the waste management units investigated during the RFI, the Permittee has identified waste management units (WMU) not previously identified. These WMUs are listed in Permit Condition E.3(b). In accordance with Permit Condition E.10, information pertaining to these new WMUs has been submitted. Ohio EPA has also identified a WMU listed in Permit Condition E.3(c). Ohio EPA will review the information provided by the Permittee for the WMUs in Permit Condition E.3, (b) and (c). Based on the results of this review, a RCRA Facility Investigation (RFI) may be required for these new WMUs. In accordance with Permit Condition E.5 of this permit, Ohio EPA will notify the Permittee, in writing, of the need to submit an RFI workplan or additional information for the WMUs identified in Permit Conditions E.3(b) and E.3(c).

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), constructions 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 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).

The Permittee must institute Corrective Action as necessary to protect human health and the environment for all releases of hazardous wastes or hazardous constituents from any waste management units (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) and 3745-54-101

(a) U.S. EPA and the Permittee has identified the following WMUs (SWMUs) which have undergone investigation during the RFI:

1. North Tailings Lagoon No. 1
2. North Tailings Lagoon No. 3
3. North Tailings Lagoon No. 5 / Landfill
4. Central Magnesium Fluoride Lagoon
5. South Landfill
6. Inactive Settling Lagoon No. 2 (Closed)
7. Copper Lagoon No. 3 (RCRA Closed)
8. Inactive Settling Lagoon No. 4 (Closed)
9. Active Settling Lagoon No. 5
10. Waste Lagoon No. 6 (RCRA Closed)
11. Lagoon No. 5 Storage Tank
12. Triangular Lagoon (RCRA Closed)
13. South Hyde Run Ditch
14. Oil Separator Pond
15. Alloy Make-up Pond
16. North Hyde Run Ditch
17. Alloy Cooling Pond Sludge Fill Area
18. Fluoride Furnace Rebuild Storage Pad
19. Cast Shop Skimmer Pond

20. Beryllium-Compound Contaminated Waste Drum Storage Area
21. Metallic Beryllium Contaminated Waste Drum Storage Area
22. Old Decontamination Building Solids Settling Tank
23. PCE AOC

Section 5 of the Final RFI Report lists all the WMUs presently evaluated. Exhibit B- 4 is a topographical drawing which locates the WMUs. This figure can be found in Volume 3 of the Permit Application.

(b) The Permittee has also identified the following WMUs, which may undergo Investigation:

1. Hazardous Waste Container Storage Building
2. Former Pad C
3. New Decontamination Building and Sump
4. Redrumming in Oxide Area
5. Redrumming in Whiting Area
6. Alloy By-Product Storage Pad
7. Waste Oil Drum Storage Area
8. Basins 7A, 7B, 7C
9. Basins 8A, 8B, 8C
10. Industrial Sewers
11. IWTP Sludge Staging Area
12. Trash Hopper
13. Used Graphite Storage Area
14. Used Fluorescent Bulb Satellite Accumulation Area
15. Landfill Office Septic Tank and Leach Field
16. Perchloroethylene Still Bottoms Satellite Accumulation Area at Scrap Reclamation
17. Perchloroethylene-contaminated Groundwater Satellite Accumulation Area at Perchloroethylene Spill Area
18. MEK/Collodion Waste Satellite Accumulation Area South of Sintering Airlock
19. Laboratory Solvents Satellite Accumulation Area at Analytical Laboratory
20. By-Product Storage Area West of Whiting and Alloy Offices
21. By-Product Storage Area Between Casting & ICC
22. By-Product Storage Area East of Whiting & West of W. Administration
23. By-Product Storage Area Between Resource Recovery & Outside Services
24. By-Product Storage Area Southwest of Sintering
25. By-Product Storage Area West of W. Butler Building
26. Electrical Substation No. 2

(c) Ohio EPA has identified the following WMUs, which may undergo investigation:

1. The Source Area for the Lead Waste Pile;

(d) The following WMUs are included in the IGWMP:

1. Inactive Settling Lagoon No. 2 (WMU #6) (Closed)
2. Copper Lagoon No. 3 (WMU #7) (RCRA Closed)
3. Inactive Settling Lagoon No. 4 (WMU #8) (Closed)
4. Active Settling Lagoon No. 5 (WMU #9)
5. Waste Lagoon No. 6 (WMU #10) (RCRA Closed)
6. Triangular Lagoon (WMU #17) (RCRA Closed)
7. PCE AOC (PCE Release Area)

E.4 Progress Reporting

Beginning the month after permit journalization, the Permittee shall submit a quarterly progress report for all corrective action activities. The report shall be due every three months by the 15th day of the month following the reporting period.

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

The purpose of conducting an RFI is to evaluate the nature and extent of releases of hazardous wastes and hazardous constituents from all applicable WMUs. Materion has conducted an RFI to address releases from WMUs identified in Permit Condition E.3 (a) above. Ohio EPA will notify Materion, in writing, of the need to submit an RFI workplan or additional information for the WMUs identified in Permit Conditions E.3(b) and E.3(c). In accordance with Permit Conditions E.10 and E.11, Ohio EPA will determine if an RFI is required for any newly identified WMUs. The major tasks and required submittal dates for any potential forthcoming RFIs are shown below. The scope of work for each of the tasks is found in U.S. EPA's CAP.

(a) RFI Workplan

The Permittee must submit a written RFI Workplan for any newly discovered unit(s) to Ohio EPA on a time frame established by Ohio EPA.

- (i) Within sixty (60) days of receipt of any Ohio EPA comments on the RFI Workplan, the Permittee must submit either an amended or new RFI Workplan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended or new RFI Workplan. The RFI Workplan, 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 RFI Workplan must be authorized by Ohio EPA.

(b) RFI Implementation

The Permittee must implement the RFI Workplan according to the terms and schedule in the approved RFI Workplan.

(c) RFI Final Report

Within sixty (60) days after the completion of the RFI, the Permittee must submit an RFI Final Report to Ohio EPA. The RFI Final Report must describe the procedures, methods, and results of the RFI. The Final Report must contain adequate information to support further decisions concerning Corrective Action at the Facility.

- (i) Within sixty (60) days of receipt of any Ohio EPA comments on the RFI Final Report, the Permittee must submit either an amended or new RFI Final Report that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended or new RFI Final Report. The RFI Final Report, 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 RFI Final Report must be authorized by Ohio EPA.

E.6 Interim Measure (IM)

The following specific IM(s) have been identified by Ohio EPA:

Settling Lagoon No. 5 was identified as Unit 9 during the RFI. Lagoon No. 5 is an active settling lagoon that receives process wastewater and stormwater. During the week of August 4, 2008, a confirmed air release of beryllium occurred from this unit and was later attributed to dust from mowing activities along the sides of the lagoon walls. The facility has implemented a series of interim measures to prevent recurrence of beryllium releases from the lagoon. These actions include suspension of all mowing activities inside the lagoon dike walls; installation of a non-woven geotextile and an approximately 12-inch soil layer to cover sediments along the western wall of the lagoon; and maintenance of water levels within the lagoon above the level of the sediments. These interim measures are to be maintained at Lagoon No. 5, at a minimum, until completion of the evaluation of the interim measures is complete (to be conducted subsequent to the CMS for Units 26 and 38).

Per the March 4, 2009 Interim Measures approval letter, Materion Brush is required to perform monthly inspections of the above-referenced interim measures to ensure that the geotextile/soil layer and water level within the lagoon are adequate to prevent sludge from becoming exposed along the dike wall.



In the event 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 additional IM(s) (this may include an IM Workplan) 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 or other relevant information, the Permittee may submit an application to Ohio EPA for a permit modification under OAC Rule 3745-50-51 to terminate Corrective Action tasks which are enumerated throughout Section E of the permit. Other Corrective Action tasks identified in Section E shall 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, 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 a potential or an actual release 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 Workplan and upon Ohio EPA approval of that Workplan, 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 described 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 Workplan

The Permittee must submit a written CMS Workplan to Ohio EPA within ninety (90) days from the notification by Ohio EPA of the requirement to conduct a CMS.

- (i) Within sixty (60) days of receipt of any Ohio EPA comments, the Permittee must submit either an amended or new CMS Workplan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended or new CMS Workplan. The CMS Workplan, 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 Workplan must be authorized by Ohio EPA.

##### (b) CMS Workplan Implementation

The Permittee must implement the CMS Workplan according to the terms and schedule in the approved CMS Workplan.

##### (c) CMS Final Report

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

- (ii) 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.

#### 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 cleanup 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.

The Permittee will develop a Corrective Measures Implementation (CMI) Workplan describing the methods to be utilized to implement the approved Corrective Measure, including Corrective Action Objectives.

In authorizing the proposed Corrective Measures, Ohio EPA may also consider such other factors as may be presented by site-specific conditions.

##### (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) CMI Workplan

The Permittee must submit a written CMI Workplan to Ohio EPA within ninety (90) days from the notification by Ohio EPA of the requirement to implement corrective measures. The CMI Workplan must contain the Specific Remedies as outlined below.

- (i) Within forty-five (45) days of receipt of Ohio EPA's comments, the Permittee must submit either an amended or new CMI Workplan that addresses Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended or new CMI Workplan. The CMI Workplan, 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 CMI Workplan must be authorized by Ohio EPA.

(c) CMI Workplan Implementation

The Permittee must implement the CMI Workplan according to the terms and schedule in the approved CMI Workplan.

(d) Corrective Measures Specific Remedies

(i) Unit 4 – Central Magnesium Fluoride Lagoon

Ohio EPA has determined that the combination of removal, engineering, institutional controls/environmental covenants and ground water monitoring will be effective and reliable corrective measures for Unit 4-Central Magnesium Fluoride Lagoon.

(a) The Permittee must continue to implement an Agency-approved ground water monitoring program for Unit 4 which contains at least the following provisions:

- (i) Ground Water Sampling Procedures including: sampling preparation and equipment maintenance; well inspection; ground water level measurements; well purging; sample collection; sample labeling; field measurements and calibration; field quality/quality control; sample volume, preservation, containers, and holding times; sample handling, chain-of-custody control and shipping procedures.
- (ii) Monitoring well installation and abandonment activities including: installation time-frame; installation and abandonment techniques; construction materials; well installation; well development; quality control for monitor well drilling and installation; and monitor well surveying.
- (iii) Ground Water Monitoring Program including: monitoring overview; parameter list; analytical methods and practical quantitation limits (PQLs); statistical analysis; and provisions



for characterizing and responding to statistical exceedances.

- (b) If the Permittee or Ohio EPA determines that the ground water monitoring program for Unit 4 established by Permit Condition E.9(d)(i)(b) requires a revision, then the Permittee must submit the revision(s) to Ohio EPA for approval within ninety (90) days of this determination.

(ii) Unit 26 - South Hyde Run

- (a) The Permittee shall implement corrective measures as described below:

- (i) Sampling of soil and sediment prior to or during the CMI design phase to better define the target removal areas; and
  - (ii) Excavation, removal, and disposal of soil/sediments exceeding screening criteria in the approved CMS from the targeted hotspot areas; and
  - (iii) Excavated soil/sediments will be characterized and disposed of in accordance with applicable federal and state laws and regulations; and
  - (iv) Submittal of a post-removal confirmatory soil/sediment sampling plan as part of the CMI Workplan; and
  - (v) Restoration of the targeted hotspot areas with a minimum of one foot of clean replacement material (ecological point of compliance for soils).

- (b) Within one hundred eighty (180) days from the effective date of the director-initiated permit modification for corrective measures at Units 26, 38S and 38N, the Permittee must submit a CMI monitoring program to demonstrate the effectiveness of the remedy for Unit 26 for Ohio EPA approval.

- (i) The CMI monitoring program will include, at a minimum, the periodic monitoring of wells MW-34, MW-32, MW-33, MW-38, MW-40, MW-42, and MW-43 for the presence of Aroclor 1248 and Aroclor 1254; and
  - (ii) The sampling shall be performed annually each spring for a duration of 6 years; and

- (iii) Results will be provided to Ohio EPA on the schedule identified in the CMI Workplan.
  - (c) If the Permittee or Ohio EPA determines that the monitoring program for Unit 26 established by Permit Condition E.9(b)(ii)(b) requires a revision, then the Permittee must submit the revision(s) to Ohio EPA for approval through a permit modification within ninety (90) days of this determination.
  - (d) After completion of the corrective measures for Unit 26, if additional excavation or construction activities must be performed, a risk management plan (RMP) must be approved by Ohio EPA and in place prior to excavation to ensure safe work practices for excavation workers and proper management of excavated soils.
- (iii) Unit 38S - North Hyde Run – South
- (a) The Permittee shall implement corrective measures as described below:
    - (i) Sampling of soil, sediment, and sludge prior to or during the CMI design phase to better define the target removal areas; and
    - (ii) Excavation, removal and disposal of soil, sediment and sludge from the targeted hotspot areas; and
    - (iii) Excavated soil/sediments or sludge will be characterized and disposed of in accordance with applicable federal and state laws and regulations; and
    - (iv) Submittal of a post-removal confirmatory soil/sediment sampling plan as part of the CMI Workplan; and
    - (v) Restoration of the targeted hotspot areas with approximately one foot of clean replacement material.
  - (b) Within one hundred eighty (180) days from the effective date of the director-initiated permit modification for corrective measures at Units 26, 38S and 38N, the Permittee must submit a CMI monitoring program to demonstrate the effectiveness of the remedy for Unit 38S for Ohio EPA approval.
    - (i) The CMI monitoring program will include, at a minimum, the periodic monitoring of wells MW-34, MW-32, MW-33, MW-38,

MW-40, MW-42, and MW-43 for the presence of Aroclor 1248 and Aroclor 1254; and

(ii) The sampling shall be performed annually each spring for a duration of 6 years; and

(iii) Results will be provided to Ohio EPA on the schedule identified in the CMI Workplan.

(c) If the Permittee or Ohio EPA determines that the monitoring program for Unit 38S established by Permit Condition E.9(b)(iii)(b) requires a revision, then the Permittee must submit the revision(s) to Ohio EPA for approval through a permit modification within ninety (90) days of this determination.

(d) After completion of the corrective measures for this unit, if additional excavation or construction activities must be performed, an RMP must be approved by Ohio EPA and in place prior to excavation to ensure safe work practices for excavation workers and proper management of excavated soils.

(iv) Unit 38N - North Hyde Run

(a) The Permittee shall implement corrective measures as described below:

(i) Sampling of soil and sediment prior to or during the CMI design phase to better define the target removal areas; and

(ii) Excavation, removal, and disposal of soil/sediments from the targeted hotspot areas; and

(iii) Excavated soil/sediments will be characterized and disposed of in accordance with applicable federal and state laws and regulations; and

(iv) Submittal of a post-removal confirmatory soil/sediment sampling plan as part of the CMI Workplan; and

(v) Restoration of the targeted hotspot areas with ~ one foot of clean replacement material (ecological point of compliance for soils); and

(vi) Submittal of a cap and cover design as part of the CMI Workplan; and

- (b) Within one hundred eighty (180) days from the effective date of the director-initiated permit modification for corrective measures at Units 26, 38S and 38N, the Permittee must submit a CMI monitoring program to demonstrate the effectiveness of the remedy for Unit 38N for Ohio EPA approval.

    - (i) The CMI monitoring program will include, at a minimum, the periodic monitoring of wells MW-34, MW-32, MW-33, MW-38, MW-40, MW-42, and MW-43 for the presence of Aroclor 1248 and Aroclor 1254; and
    - (ii) The sampling shall be performed annually each spring for a duration of 6 years; and
    - (iii) Results will be provided to Ohio EPA on the schedule identified in the CMI Workplan.
  - (c) If the Permittee or Ohio EPA determines that the monitoring program for Unit 38N established by Permit Condition E.9(b)(iv)(b) requires a revision, then the Permittee must submit the revision(s) to Ohio EPA for approval through a permit modification within ninety (90) days of this determination.
  - (d) After completion of the corrective measures for this unit, if additional excavation or construction activities must be performed, an RMP must be approved by Ohio EPA and in place prior to excavation to ensure safe work practices for excavation workers and proper management of excavated soils.
- (e) Environmental Covenant

The Permittee must obtain an Environmental Covenant in accordance with Ohio's Environmental Covenant law, Ohio Revised Code sections 5301.80 to 5301.92, that will declare the site is restricted to industrial use only and prohibit the use of on-site ground water for potable purposes.
- (f) Financial Assurance

As part of the modification of this permit to incorporate CMI, the Permittee shall provide financial assurance in the amount necessary to implement the corrective measure(s) as required by OAC Rule 3745-54-101(B) and (C). The timeframe for establishing the financial assurance is detailed in Permit Condition E.14.



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 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 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 RFI Workplan 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.

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

E.12 Completion of Corrective Action  
OAC Rule 3745-54-101

After completing Corrective Action as necessary to protect human health and the environment for all releases of hazardous wastes or hazardous constituents from any WMUs at the Facility, the Permittee shall submit a Corrective Measures Completion

of Work (CMCW) Report. The CMCW Report shall document that Corrective Action construction is complete, cleanup objectives and standards have been met, and any releases of hazardous-waste or constituents no longer pose an unacceptable risk to human health and the environment. The CMCW Report may be submitted for any part of the Facility for which corrective measures are complete, or for the entire Facility. The CMCW Report must be submitted as a request for permit modification pursuant to OAC Rule 3745-50-51.

E.13 Documents Requiring Professional Engineer Stamp  
ORC Section 4733.01

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

Final Interim Measures Report  
Corrective Measures Final Design  
Corrective Measures Construction Completion Report  
Corrective Measures Attainment of Groundwater 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.14 Compliance Schedule

The Permittee shall make the following submittals in accordance with the table below:

Action	Timeframe
Update Financial Assurance to include costs for approved corrective measures implementation. Financial assurance shall be in the amount necessary to implement the approved remedies as required by OAC Rule 3745-54-101(B) and (C).	Cost estimate to be submitted within 60 days of the effective date of the director-initiated permit modification for the implementation of corrective measures at Units 26, 38S and 38N. Financial assurance documentation to be submitted within 90 days of the effective date of the director-initiated permit modification for the implementation of corrective measures at Units 26, 38S and 38N.

Submit a written CMI Workplan for the Hyde Run Ditch Units (Units 26, 38N and 38S).	Within 90 days from the effective date of the director-initiated permit modification for the implementation of corrective measures at Units 26, 38S and 38N.
Submit a CMI monitoring program to demonstrate the effectiveness of the remedies at Units 26, 38S and 38N.	Within 180 days from the effective date of the director-initiated permit modification for corrective measures at Units 26, 38S and 38N.
Corrective Measures Construction Completion Report for Units 26, 38S and 38N.	Within 90 days of completion of construction at Units 26, 38S and 38N.

- exceedance resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water. If the exceedance is demonstrated to be an error in sampling, analysis, or statistical evaluation, the Permittee shall make appropriate changes to the present IGWMP at the facility.
- (iii) Upon determining that a source other than a unit under the IGWMP caused the exceedance, in addition to submitting the above report, the Permittee will comply with Permit Conditions E.10 and E.11 if applicable to the alternate source.
  - (iv) Within 180 days of determining that a POA or Plume Growth Well exceeds a risk level or within 45 days of determining that a Plume Growth Well exceeds an ESL, and it cannot be demonstrated that the source is other than a unit covered by the IGWMP or that the exceedance is due to an error in sampling, analysis, statistical evaluation or natural variation in ground water, the Permittee shall either:
    - (a) If the exceedance is a risk level exceedance, submit to the director an application for a permit modification according to OAC Rule 3745-50-51 to establish a remedial action program meeting the requirements of OAC Rule 3745-54-100 as described in Permit Condition F.7(g); or
    - (b) If the exceedance is an ESL, submit a report to OhioEPA for review and approval outlining the actions which the Permittee shall conduct for further investigation.
  - (v) The Permittee shall continue to monitor ground water in accordance with the IGWMP established at the facility.
  - (i) Should conditions at a building above the IGWMP plume change in a way that may affect the vapor intrusion pathway, the Permittee must:
    - (i) assess occupancy conditions at the affected building(s) as it relates to vapor intrusion; and
    - (ii) present a demonstration for Ohio EPA's concurrence at least 90 days before implementation of the change; and
      - (a) If the demonstration performed under F.7(i)(ii) shows that the new conditions for that particular building would not result in an exceedance of acceptable risk levels for the vapor intrusion pathway, no additional action is needed.
      - (b) If the demonstration performed under F.7(i)(ii) shows unacceptable exposures, the Permittee must submit a permit modification in accordance with OAC Rule 3745-50-51 to incorporate an



Operations and Maintenance Plan into the permit. The permit modification must be submitted before implementation of the change to demonstrate that the building conditions and remedies will be maintained and outlined in a schedule for long-term maintenance.

Examples of changes to building conditions that may warrant submittal of a re-assessment and demonstration under F.7(i) include the installation of equipment into the concrete floor of a building, use of air handling equipment at ventilation rates not monitored before, a change in a building's use, or worker exposure is increased, etc.

F.8. Recordkeeping and Reporting

(a) Operating Record

In addition to any other information required in Permit Condition F.7(b), the Permittee shall enter all of the following information in the operating record:

- (i) The laboratory results from each of the well samples, duplicates, blanks, and their associated qualifiers, including laboratory sheets for every sampling event (including laboratory method numbers, method detection limits, laboratory practical quantitation limits (PQLs), and units of measurement);
- (ii) The date each well was sampled;
- (iii) The date, time, and identification of all blanks and duplicates;
- (iv) Any field log or laboratory report documentation of deviation from the procedures in the IGWMP, including documentation of parameter omissions during the sampling event;
- (v) The values of the field parameters;
- (vi) The date the Permittee received the results from the laboratory;
- (vii) The date of completion of the data validation;
- (viii) A validation summary that includes qualifiers on the data, definitions for all qualifiers used, a listing of all relative percent differences greater than or equal to 20% for all field duplicate pairs, a signed statement of validity, technical holding time review, dilutions, blank data, spikes, spike recovery percentage, surrogate recovery, and an explanation of any rejected results and an overall assessment of the data;
- (ix) The date of completion of any statistical evaluation;
- (x) Chain-of-Custody documents;