

PUBLIC NOTICE

Summit County

OHIO EPA ISSUES DRAFT RENEWAL HAZARDOUS WASTE PERMIT TO PPG INDUSTRIES, INC., BARBERTON

On October 16, 2009, Ohio EPA issued a draft renewal Hazardous Waste Facility Installation and Operation Permit (Permit) to PPG Industries, Inc., Barberton, for its facility located at 4829 Fairland Road, Barberton, Ohio 44203-3905. The EPA Identification Number for this facility is OHD004198917.

Why does PPG Industries, Inc. need a Draft Renewal Permit for its Barberton Facility?

PPG Industries, Inc., Barberton (PPG), is a specialty plastic resin and chemical production facility. The purpose of the Permit is to allow continued storage of waste generated by the following operations: manufacture of optical products (plastic resins and catalysts); Teslin; silica products; and maintenance activities. PPG currently operates a Development Center. To issue this draft renewal Permit, Ohio EPA determined that the Permit application is complete and meets appropriate standards and that the applicant has a history of compliance with relevant environmental laws and demonstrates sufficient reliability, expertise and competency to operate a hazardous waste facility. When issued, the renewal Permit will allow PPG to continue to store waste in containers on-site. Also, if issued, the renewal Permit will require PPG to investigate and, if necessary, clean up any contamination from hazardous wastes or constituents that may be at the facility.

When and where will Ohio EPA hold a Public Meeting?

You may request Ohio EPA to hold a public meeting for this draft renewal permit. You should send your request to: Ohio EPA, Division of Hazardous Waste Management, Attn: Regulatory and Information Services Section, P.O. Box 1049, Columbus, Ohio 43216-1049, telephone number (614) 644-2917, fax number (614) 728-1245, e-mail: dhwmcomments@epa.state.oh.us. If the request is granted, Ohio EPA will announce the time and location of the public meeting.

When and how do I submit written comments?

You can submit written comments anytime between October 17 and December 1, 2009. Send your comments to Ohio EPA, Division of Hazardous Waste Management, Attn: Regulatory and Information Services Section, P.O. Box 1049, Columbus, Ohio 43216-1049, telephone number (614) 644-2977, fax number (614) 728-1245, e-mail: dhwmcomments@epa.state.oh.us.

Where can I review the Permit Application and draft renewal Permit?

You can review these at one of the following locations:

Barberton Public Library, 602 West Park Avenue, Barberton, Ohio 44203-2458, (330) 745-1194;

Ohio EPA, Northeast District Office, 2110 East Aurora Road, Twinsburg, Ohio 44087, (330) 963-1200; and,

Ohio EPA, Division of Hazardous Waste Management, 50 West Town Street, Suite 700, Columbus, Ohio 43215, (614) 644-2917.

What will Ohio EPA do with the comments?

After carefully considering public comments, Ohio EPA will reconsider the draft Permit, making any necessary changes, and issue or deny the final renewal Permit. Ohio EPA will issue a "response to public comments," specifying any changes made to the draft Permit. If you commented on the draft renewal Permit, Ohio EPA will send you a copy of the "response to public comments" and the final permit decision.

October 2009

Draft Hazardous Waste Renewal Permit**Public Participation
Procedures and
Comment Period
Ohio Administrative
Code (OAC) Rule
3745-50-22
(B)(5)(a)&(b)**

Staff from Ohio EPA have drafted a Resource Conservation and Recovery Act (RCRA) permit for PPG Industries, Inc. (PPG) located in Barberton, Ohio. The renewal permit would authorize PPG Industries to continue to store hazardous waste in a container storage area. In addition, this draft permit includes Corrective Action remedies that the Permittee has completed or is constructing.

All persons, including the applicant, may submit written comments relating to this draft action. Written comments or requests for a public meeting may be submitted before the end of the comment period to the address in the box on the right.

The comment period begins on 10/17/09, and ends on 12/1/09. A copy of the permit application and the draft permit is available for review by the public at the following locations:

Ohio EPA
Northeast District Office
2110 East Aurora Rd.
Twinsburg, Ohio 44087
(330) 963-1200

Facility Name:	PPG Industries, Inc.
U.S. EPA I.D.:	OHD 004 198 917
Location:	4829 Fairland Road Barberton, Ohio 44203
Facility Owner:	PPG Industries, Inc. One PPG Place Pittsburgh, Pennsylvania 15272
Facility Operator:	PPG Industries, Inc. One PPG Place Pittsburgh, Pennsylvania 15272
Activity:	Renewal: storage of hazardous waste & Corrective Action
Comment Period:	October 17, 2009 – December 1, 2009
Submit Comments to:	Ohio EPA Division of Hazardous Waste Management Regulatory and Information Services Section P.O. Box 1049 Columbus, Ohio 43216-1049 (614) 644-2917

Ohio EPA, Central Office
Division of Hazardous Waste
Management
Lazarus Government Center
50 West Town St., Suite 700
Columbus, Ohio 43215
(614) 644-2917

Barberton Public Library
602 West Park Avenue
Barberton, Ohio 44203-2458
(330) 745-1194

The draft permit is available for review by the public online at:

<http://www.epa.ohio.gov/dhwm>

Within sixty (60) days of the close of the public comment period, Ohio EPA will, without prior hearing, issue the permit (or deny the request) in accordance with Chapter 3734 of the Ohio Revised Code (ORC). If Ohio EPA approves the application, a renewal permit will be issued with terms and conditions as are necessary to ensure compliance with hazardous waste rules.



**Description of Facility
OAC Rule 3745-50-22
(B)(1)**

PPG is a specialty plastic resin and chemical production facility. The facility manufactures plastic resins and catalysts for the plastic optical lens industry; Teslin, a porous extruded paper-like material; silica products; and interlayer, a sheet of extruded polyurethane. In addition, the Barberton Plant also includes a Development Pilot Plant which is used to develop a variety of products on a small batch basis.

PPG is located within the cities of Barberton, New Franklin, and Norton, situated on the eastern portion of Columbia Lake which divides the facility into two distinct areas: the North Plant and the South Plant. The facility is bounded by both industrial and residential zoned property. The facility is situated on approximately 3,250 acres. The active portion of the site occupies approximately 300 acres surrounded by a fence with locked gates. The facility is approximately one half of a mile southeast of the Tuscarawas River but does not lie within the 100 year flood plain. The primary access to PPG is from Ohio Route 585 (Wooster Road, West).

PPG has applied for a renewal of its Ohio Hazardous Waste Facility Installation and Operation Permit (also known as the Part A permit) which was originally issued on December 28, 1981 and last renewed on September 23, 1993.

To address the facility's Corrective Action requirements,

PPG performed a RCRA Facility Investigation (RFI) during which they sampled and analyzed soil, sediment, surface water and ground water at their facility. PPG has also conducted Corrective Measure Study (CMS) activities to evaluate remediation options for the facility. The Corrective Measure Study was submitted to U.S. EPA in September 1997. The original 110 waste management units and four areas of concern were grouped into media focus areas. These areas were managed and tracked through a Performance Based Agreement with U.S. EPA, and a Media Focus Document which identified performance standards and remedial goals for specific areas of the facility. This served as the basis for developing interim and corrective measures proposals for the facility.

Ohio EPA is incorporating both remedies which are completed and in progress selected by U.S. EPA and PPG within the renewal permit.

**Description of
Requested Permit
Renewal
OAC Rule 3745-50-22
(B)(2)**

The hazardous waste stored at this facility are wastes which are hazardous based upon the characteristics of toxicity, ignitability, and corrosivity or, which are specifically listed as hazardous waste in the OAC 3745-51. Hazardous wastes stored at the facility include wastes generated by the following operations: optical

products (plastic resins and catalysts) manufacturing, Teslin manufacturing, silica products manufacturing, Development Pilot Plant and maintenance activities.

PPG is permitted to store no more than 6500 gallons of containerized waste at any given time.

**Regulatory Basis to
Support the Decision
to Renew the Permit
Application
OAC Rule 3745-50-22
(B)(3)**

The director determined that PPG submitted an application for renewal one hundred eighty (180) days prior to the expiration date of its present permit which was issued by the Hazardous Waste Facility Board on September 30, 1993. Ohio EPA issued a draft renewal permit in May 29, 1998, based on the renewal application but did not issue a final action at the time because PPG was fulfilling Corrective Action obligations under U.S. EPA.

PPG submitted a new renewal application on September 4, 2008, and revised it on July 6, 2009. PPG is currently operating on its expired permit per OAC Rule 3745-50-56. The director has considered the application, inspection reports, a report regarding the facility's compliance with the present permit, and the rules adopted under Chapter 3734.05 of the Ohio Revised Code. The director has found that the



Part B permit application meets the director's performance standards and that the facility has a history of compliance with this chapter, rules adopted under it, the existing permit, orders entered into, which demonstrates reliability, expertise, and competency to subsequently operate the facility under this chapter, the rules, and the permit.

Contact Person
OAC Rule 3745-50-22
(B)(6)

For additional information, please contact Suzanne Prusnek at (330) 963-1181.



OHIO ENVIRONMENTAL PROTECTION AGENCY
OHIO HAZARDOUS WASTE FACILITY
INSTALLATION AND OPERATION PERMIT RENEWAL

Permittee: **PPG Industries, Inc.**

Mailing
Address: **4829 Fairland Road
Barberton, Ohio 44203**

Owner: **PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272**

Operator: **PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272**

Location: **PPG Industries, Inc.
4829 Fairland Road
Barberton, Ohio 44203**

Ohio Permit No.: **02-77-0453**

US EPA ID: **OHD 004 198 917**

Issue Date:

Effective Date:

Expiration Date:

AUTHORIZED ACTIVITIES

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

Renewal: Storage of Hazardous Waste & Corrective Action

PERMIT APPROVAL

Chris Korleski, Director
Ohio Environmental Protection Agency

This permit approval is based upon the record in this matter which is maintained at the offices of the Ohio Environmental Protection Agency. The Director has considered the application, accompanying information, inspection reports of the facility, a report regarding the facility's compliance or noncompliance with the terms and conditions of its permit and rules adopted by the Director under this chapter, and such other information as is relevant to the operation of the facility. The Director has determined that the facility under the existing permit has a history of compliance with ORC Chapter 3734, rules adopted under it, the existing permit, or orders entered to enforce such requirements that demonstrate sufficient reliability, expertise, and competency to operate the facility henceforth under this chapter, rules adopted under it, and the renewal permit.

Entered into the Journal of the Director this ____ day of _____,

By _____ of the Ohio Environmental Protection Agency.

MODULE A - GENERAL PERMIT CONDITIONS

A. GENERAL PERMIT CONDITIONS

A.1 Effect of Permit

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

- (a) The Permittee is authorized to store hazardous waste in containers in accordance with the terms and conditions of this Ohio hazardous waste permit (hereinafter "permit"), ORC Chapter 3734, all applicable Ohio hazardous waste rules, all applicable regulations promulgated under the Resource Conservation and Recovery Act (RCRA), as amended, and the permit application. The permit application was first submitted to Ohio EPA on March 30, 1998, but no final action was issued. The permit application, as resubmitted on September 4, 2008, and updated on July 6, 2009, and September 18, 2009, is hereby incorporated into this permit. In the instance of inconsistent language or discrepancies between the above, the language of the more stringent provision shall govern.
- (b) Any management of hazardous waste not authorized by this permit is prohibited, unless otherwise expressly authorized or specifically exempted by law. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, or invasion of other private rights. Compliance with the terms and conditions of this permit does not obviate Permittee's obligation to comply with other applicable provisions of law governing protection of public health or the environment including but not limited to the Community Right to Know law under ORC Chapter 3750.

A.2 Permit Actions

OAC Rule 3745-50-58(F)

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

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

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

A.4 Severability

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

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

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

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

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

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

- (i) the Permittee has submitted a timely and complete permit application for a renewal permit under OAC Rule 3745-50-40; and
 - (ii) through no fault of the Permittee, a new permit has not been issued pursuant to OAC Rule 3745-50-40 on or before the expiration date of this permit.
- (c) The Corrective Action obligations contained in this permit will continue regardless of whether the facility continues to operate or ceases operation and closes. The Permittee is obligated to complete facility-wide Corrective Action under the conditions of this permit regardless of the operational status of the facility. The Permittee must submit an application for permit renewal at least 180 days before the expiration date of this permit pursuant to OAC Rule 3745-50-40(D) unless a) the permit has been modified to terminate the Corrective Action schedule of compliance and the Permittee has been released from the requirements for financial assurance for Corrective Action; or b) a later submittal date has been authorized by the Director.

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

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

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

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

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

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

assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the terms and conditions of this permit.

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

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

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

- (a) The Permittee must allow the Director, or an authorized representative, upon stating the purpose and necessity of the inspection and upon proper identification, to:
 - (i) enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the terms and conditions of this permit;
 - (ii) have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;
 - (iii) inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the terms and conditions of this permit; and
 - (iv) sample, document, or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by ORC Chapter 3734 and the rules adopted thereunder, any substances or parameter at any location.

- (b) Any record, report or other information obtained under the hazardous waste rules or Chapter 3734 of the Revised Code shall not be available to the public upon the Permittee's satisfactory showing to Ohio EPA that all or part

of the information would divulge methods or processes entitled to protection as trade secrets pursuant to Ohio Trade Secret Law and OAC Rule 3745-50-30.

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

- (a) Any sample and measurement taken for the purpose of monitoring must be representative of the monitored activity. Further, a sample must be a representative sample, as such term is defined and used in the Ohio hazardous waste rules. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of OAC Rule 3745-51-20, Laboratory Methods. Laboratory methods must be those specified in Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, Third Edition (November 1986), as amended by Updates I (dated July 1992), II (dated September 1994), IIA (dated August 1993), IIB (dated January 1995), III (dated December 1996) and IIIA (dated April 1998), and additional supplements or editions thereof; Standard Methods for the Examination of Water and Wastewater: Twentieth Edition, 1999; or an equivalent method as specified in the approved waste analysis plan, or as this term is defined and used in the Ohio hazardous waste rules.
- (b) Records of monitoring information must specify the:
- (i) date(s), exact place(s), and time(s) of sampling or measurements;
 - (ii) individual(s) who performed the sampling or measurements;
 - (iii) date(s) analyses were performed;
 - (iv) individual(s) who performed the analyses;
 - (v) analytical technique(s) or method(s) used; and
 - (vi) results of such analyses.

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

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

A.14 Retention of Records and Information Repository

OAC Rules 3745-50-40(G), 3745-50-58(J), 3745-50-58(M) and 3745-50-58(N)

- (a) The Permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, the certification required by OAC Rule 3745-54-73(B)(9), and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report, certification, or application.
- (b) The record retention period may be extended by request of the Director at any time and is automatically extended during the course of any unresolved enforcement action regarding the facility.
- (c) The Permittee must maintain, in accordance with the Ohio hazardous waste rules, records of all data used to complete the permit application and any amendments, supplements or modifications of such application. The Permittee must retain a complete copy of the current application for the effective life of the permit as indicated in Permit Condition A.3.
- (d) The Permittee must maintain records from all ground water monitoring wells and associated ground water surface elevations for the active life of the facility, and for disposal facilities for the post-closure care period as well.
- (e) The director may require the Permittee to establish and maintain an information repository at any time, based on the factors set forth in OAC rule 3745-50-39(C)(2). The information repository will be governed by the provisions in OAC rules 3745-50-39(C)(3) through (C)(6).
- (f) Corrective Action records must be maintained at least three (3) years after all Corrective Action activities have been completed.

A.15 Planned Changes

OAC Rules 3745-50-51 and 3745-50-58(L)(1)

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

A.16 Waste Shipments

OAC Rule 3745-53-11, ORC Section 3734.15(C)

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

A.17 Anticipated Noncompliance

OAC Rule 3745-50-58(L)(2)

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

A.18 Transfer of Permits

OAC Rules 3745-50-52, 3745-50-58(L)(3) and 3745-54-12

- (a) The permit may be transferred to a new owner or operator only if such transfer is conducted in accordance with ORC Chapter 3734 and the rules adopted thereunder. This permit may be transferred by the Permittee to a new owner or operator only if the permit has been modified under OAC Rule 3745-50-51. Before transferring ownership or operation of the facility, the Permittee must notify the new owner or operator in writing of the requirements of ORC Chapter 3734 and the rules adopted thereunder (including all applicable Corrective Action requirements).
- (b) The Permittee's failure to notify the new owner or operator of the requirements of the applicable Ohio law or hazardous waste rules does not relieve the new owner or operator of its obligation to comply with all applicable requirements.

A.19 Compliance Reports

OAC Rules 3745-50-58(L)(5) and 3745-50-50

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

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

- (a) The Permittee must report orally to Ohio EPA's Division of Emergency and Remedial Response within twenty-four (24) hours from the time the Permittee becomes aware of any noncompliance with this permit, ORC Chapter 3734 or the rules adopted thereunder, which may endanger human health or the environment, including:
 - (i) information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies; and
 - (ii) any information of a release or discharge of hazardous waste or a fire or explosion from the hazardous waste facility, which could threaten the environment or human health outside the facility.
- (b) The report must consist of the following information (if such information is available at the time of the oral report):
 - (i) name, address, and telephone number of the owner or operator;
 - (ii) name, address, and telephone number of the facility;
 - (iii) date, time, and type of incident;
 - (iv) name and quantity of material(s) involved;
 - (v) the extent of injuries, if any;
 - (vi) an assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
 - (vii) estimated quantity and disposition of recovered material that resulted from the incident.

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

- (a) A written report must also be provided to Ohio EPA's Division of Emergency and Remedial Response and the Division of Hazardous Waste Management Northeast District Office within five (5) days of the time the Permittee becomes aware of the circumstances reported in Permit Condition A.20.

- (b) The written report must address the items in Permit Condition A.20 and must contain a description of such noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and, if not, the anticipated time it is expected to continue; and steps taken or planned to minimize the impact on human health and the environment and to reduce, eliminate, and prevent recurrence of the noncompliance.
- (c) The Permittee need not comply with the five (5) day written report requirement if the Director, upon good cause shown by the Permittee, waives that requirement and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

A.22 Other Noncompliance

OAC Rules 3745-50-58(L)(10) and 3745-50-58(L)(4)

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

A.23 Reserved.

A.24 Other Information

OAC Rule 3745-50-58(L)(11)

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

A.25 Confidential Information

OAC Rule 3745-50-30

In accordance with ORC Chapter 3734 and the rules adopted thereunder, the Permittee may request confidentiality for any information required to be submitted by the terms and conditions of this permit, or any information obtained by the Director, or an authorized representative, pursuant to the authority provided under Permit Condition A.11.

A.26 Ohio Annual Permit, Disposal, and Treatment Fees
OAC Rules 3745-50-33 through 3745-50-36

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

A.27 Compliance Schedule - Documents
OAC Rules 3745-50-50 and 3745-50-51

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

Ohio EPA, Director
c/o DHWM, Regulatory and Information Services
P.O. Box 1049
Columbus, Ohio 43216-1049

Ohio EPA, DHWM
Northeast District Office
2110 East Aurora Road
Twinsburg, Ohio 44087

- (b) The Permittee must submit to the Ohio EPA within sixty (60) days after permit journalization, in accordance with Ohio's hazardous waste rules, the following information to be incorporated in the permit application:

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

Section I of the permit application containing the financial assurance mechanism for closure must be updated to include a copy of the current closure/post-closure cost estimate as set forth in OAC Rules 3745-55-42 and 3745-55-44.

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

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

current financial assurance mechanism, as set forth in OAC Rules 3745-55-43, and as specified by the wording requirements of OAC Rule 3745-55-51. The value of the financial assurance mechanism must reflect at least the current amount of the closure/post-closure cost estimate.

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

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

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

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

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

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

- (a) Unless otherwise specified by the hazardous waste rules, the Permittee must maintain at the facility, until closure is completed and certified by an independent, registered professional engineer, pursuant to OAC Rule 3745-55-15, and until the Director releases the Permittee from financial assurance requirements pursuant to OAC Rule 3745-55-43, 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, 3745-55-74 and 3745-55-95 and the terms and conditions of this permit.
 - (viii) annually-adjusted cost estimate for facility closure as required by OAC Rules 3745-55-42 and 3745-55-44 and the terms and conditions of this permit.
 - (ix) all other documents required by Module A, Permit Condition A.12
- (b) The Permittee must maintain copies of all inspection logs at the facility for a period not less than three (3) years from the date of inspection.

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

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

- (b) The Permittee must submit the Waste Minimization Report to Ohio EPA's Office of Compliance Assistance and Pollution Prevention within one hundred eighty (180) days of the effective date of this permit, and must submit updates to this report once every five years thereafter.

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MODULE B - GENERAL FACILITY CONDITIONS

B. GENERAL FACILITY CONDITIONS

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

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

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

- (a) Hazardous Waste from Off-Site Sources

The Permittee shall manage only wastes generated at the PPG Barberton facility designated by USEPA identification number OHD 004 198 917.

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

- (a) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under OAC Rule 3745-55-13(D), he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of Chapters 3745-54 to 3745-57, 3745-205, and 3745-270 of the Administrative Code.
- (b) The Permittee must follow the procedures described in the waste analysis plan found in Section C of the permit application and the terms and conditions of this permit.
- (c) The Permittee must verify the analysis of each waste stream annually as part of its quality assurance program, in accordance with Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or equivalent methods approved by the Director. At a minimum, the Permittee must maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and

analytical procedures, and perform correct calculations. If the Permittee uses a contract laboratory to perform analyses, then the Permittee must inform the laboratory in writing that it must operate under the waste analysis conditions set forth in this permit.

B.4 Security
OAC Rule 3745-54-14

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

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

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

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

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

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

- (a) The Permittee must comply with the requirements of OAC Rule 3745-54-17 and must follow the procedures for handling ignitable, reactive, and incompatible wastes set forth in Section F of the permit application.
- (b) The Permittee must provide electrical grounding for all containers and tanks, and transport vehicles during all operations involving the handling of ignitable or reactive wastes.

- (c) The Permittee must provide, and require the use of, spark proof tools during all operations involving the handling of all ignitable or reactive wastes.
- (d) The Permittee must prohibit smoking and open flames in each area where ignitable, reactive or incompatible hazardous wastes are managed and must post appropriate signs.
- (e) Where applicable, all wiring and electrical equipment at the facility must meet the National Fire Protection Association's standards for hazardous locations (See National Fire Protection Association, "National Electric Code" National Fire Codes, 1985 Edition, Vol. 3, Chapter 5, Special Occupancies, Articles 500-503, pp.176 through 189).

B.8 Reserved.

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

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

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

The Permittee must inspect, test and maintain the equipment required by Permit Condition B.8 as necessary to assure its proper operation in time of emergency, as specified in OAC Rule 3745-54-33, Section F of the permit application and the terms and conditions of this permit.

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

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

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

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

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

- (a) The Permittee must comply with the requirements of OAC Rule 3745-54-37 (A) by making a diligent effort to:
- (i) make arrangements and familiarize all emergency response agencies which are likely to respond in an emergency with the location and layout of the facility, properties of hazardous waste managed at the facility and associated hazards, places where facility personnel will normally be working, entrances to and roads inside the facility, and possible evacuation routes as depicted and explained in Section G of the permit application;
 - (ii) make arrangements with Ohio EPA emergency response teams, emergency response contractors, and equipment suppliers;
 - (iii) make arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and types of injuries or illnesses which could result from fires, explosions, or releases at the facility; and
 - (iv) make agreements designating primary emergency authority to a specific police and a specific fire department and make agreements with any others to provide support to the primary emergency authority, where more than one police and fire department may respond to an emergency.

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

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

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

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

- (a) Any fire involving hazardous waste; or
- (b) Any explosion involving hazardous waste; or
- (c) Any uncontrolled hazardous waste reaction that produces or has the potential to produce hazardous conditions, including noxious, poisonous, flammable and/or explosive gases, fumes, or vapors; harmful dust; or explosive conditions; or
- (d) Any hazardous waste release, outside of a secondary containment system, that causes or has the potential to cause off-site soil and/or surface water contamination; or
- (e) Any hazardous waste release that produces or has the potential to produce hazardous conditions, including noxious, poisonous, flammable and/or explosive gases, fumes, or vapors; harmful dust; or explosive conditions.

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

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

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

- (a) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.
- (b) All liquid or solid material resulting from fire, explosion, released material or emergency response material and by-products that the Permittee is required to evaluate to determine whether such material is hazardous waste in accordance with OAC Rule 3745-52-11, must be collected and managed as a hazardous waste unless the Permittee can demonstrate that such waste is not hazardous in accordance with OAC Rule 3745-51-03(C) and (D).

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

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

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

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

- (b) The Permittee must, in accordance with OAC Rule 3745-54-53, submit a copy of the contingency plan to all local police departments, fire departments, hospitals and local emergency response teams that may be called upon to provide emergency services. The Permittee must notify such agencies and the local authorities, in writing, within ten (10) days of the effective date of any amendments of, revisions to, or modifications to the contingency plan.
- (c) The Permittee must, in accordance with OAC Rule 3745-54-53, submit a copy of the contingency plan to the Ohio Environmental Protection Agency's Division of Emergency and Remedial Response.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B.27 Closure Plan

OAC Rules 3745-55-10, 3745-55-11 and 3745-55-13

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

B.28 Amendment of Closure Plan

OAC Rules 3745-55-12 and 3745-50-51

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

B.29 Content of Closure Plan

OAC Rule 3745-55-12

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

B.30 Notification of Closure

OAC Rule 3745-55-12

The Permittee must notify the Director in writing at least 45 days prior to the date on which he expects to begin final closure of a facility, as required by OAC Rule 3745-55-12(D).

B.31 Time Allowed For Closure

OAC Rule 3745-55-13

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

Permittee complies with all applicable requirements for requesting a modification to the permit as set forth in OAC Rule 3745-55-13 (B).

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

- (a) The Permittee must decontaminate or dispose of all contaminated facility equipment, structures, and soils, as required by OAC Rule 3745-55-14, the closure plan and the terms and conditions of this permit.
- (b) The Permittee must notify the Ohio EPA Northeast District Office within five (5) working days prior to all rinseate and soil sampling.

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

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

B.34 Reserved.

B.35 Reserved.

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

- (a) The Permittee's most recent closure cost estimate, prepared in accordance with OAC Rule 3745-55-42 is specified in Section I of the permit application.
- (b) The Permittee must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with OAC Rule 3745-55-43

The Permittee must adjust the closure cost estimate for inflation within 30 days after the close of the Permittee's fiscal year and before submission of updated information to the Director, as specified in OAC Rule 3745-55-42(B).

- (c) The Permittee must revise the closure cost estimate whenever there is a change in the facility's closure plan that increases the cost of closure, as required by OAC Rule 3745-55-42(C).
- (d) The Permittee must submit to the Ohio EPA and keep at the facility the latest closure cost estimate as required by OAC Rule 3745-55-42(D) and (E).

B.37 Financial Assurance for Facility Closure

The Permittee must maintain continuous compliance with OAC Rule 3745 55-43 and 55-46 and provide documentation of financial assurance, which meets the requirements of OAC Rule 3745-55-51, in at least the amount of the cost estimates required by Permit Condition B.33.

B.38 Liability Requirements

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

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

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

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

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

MODULE C - CONTAINER STORAGE AND MANAGEMENT

C. CONTAINER STORAGE AND MANAGEMENT

The Hazardous Waste Storage Building (HWSB) is the only permitted storage area at the PPG Barberton Plant. It contains three rooms, the “north” and “south” rooms being used for hazardous waste container storage and the “middle” room being used for storage of operating supplies, spill clean-up materials, and tools.

The north container storage room in the HWSB is 73 feet by 20 feet. The maximum storage capacity of this room is 9,680 gallons (one hundred seventy-six (176) 55-gallon drums). Ignitable (D001), toxic (D004-D011, D018, D019, D022, D028, D029, D035, D039, D040, D043) and listed (F002, F003, F005, F027; U002, U080, U228, U239; P005) hazardous wastes are typically stored in this location. Secondary containment is provided by the concrete floor, coated with an impermeable coating, surrounded by a 1.75 inch concrete curb for a containment capacity of 1,500 gallons.

The south container storage room is 35 feet by 20 feet. Maximum storage capacity of this room is 3,960 gallons (seventy-two (72) 55-gallon drums). Corrosive (D002), toxic metals (D004-D011) and amines (D038), and listed (F005; U012, U196) hazardous wastes are typically stored in this location. Secondary containment is provided by the concrete floor, coated with an impermeable coating, and surrounded by a 1.75 inch concrete curb for a containment capacity of 700 gallons.

Waste will be stored in 55 gallon drums, 500 gallon portable containers, 250 gallon bulk containers, 30 gallon containers, and 5 gallon containers and other DOT approved containers. All drums must meet DOT specifications.

C.1 Container Storage/ Quantity Limitation

- (a) The Permittee is authorized to store 6,500 gallons of hazardous waste at any given time in the permitted container area located in the north room and the south room of the permitted container area located in the Hazardous Waste Storage Building.
- (b) For the purpose of compliance with the capacity limitation of this permit, each container will be considered to be storing an amount of hazardous waste equal to its capacity, regardless of the actual quantity stored in the container.
- (c) Permit Conditions C.1(a) and C.2 shall not apply to the Permittee's activities as a generator accumulating hazardous waste on-site in compliance with

OAC Rule 3745-52-34 and 40 CFR Part 265, subparts AA, BB, and CC. However, when accumulating waste within the permitted container storage area, in accordance with OAC Rule 3745-52-34 and 40 CFR Part 265, subparts AA, BB, and CC, the Permittee must not, for the total amount of hazardous waste stored and accumulated, exceed the maximum container storage inventory established under this permit condition.

C.2 Reserved.

C.3 Waste Identification

The Permittee must store in containers only the hazardous waste codes specified below:

D001, D002, D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D022, D028, D029, D035, D038, D039, D040, D043; F002, F003, F005; K030, K073; U002, U012, U080, U196, U228, U239.

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

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

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

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

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

- (a) The Permittee must keep all containers closed during storage, except when it is necessary to add or remove waste, and must not open, handle, or store containers in a manner which may rupture the container or cause it to leak.

- (b) In the event lab-pack wastes are generated they must be handled in compliance with applicable storage requirements.
- (c) In the event lab-pack wastes are generated they must be packaged in drums containing absorbent material that is compatible with the waste.
- (d) All container storage shall be conducted within the container storage containment system described in Condition C.1. of this permit and Section D of the permit application.

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

- (a) The Permittee must maintain the containment system in accordance with the plans and specifications contained in Section D of the permit application.
- (b) The Permittee must maintain the containment system as described in the permit application, designed with sufficient capacity to contain ten percent of the total volume of the containers or the volume of the largest container, whichever is greater. The containment system must be free of cracks and gaps and sufficiently impervious to contain leaks and spills and accumulated precipitation until the collected material is detected and removed.
- (c) The base of the containment system must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids.
- (d) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in Permit Condition C.7(b) above.
- (e) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in a timely manner. This time period is not to exceed twenty-four (24) hours from the time spilled and/or leaked waste is discovered to have reached the hazardous waste pad sump.

C.8 Prohibition of Container Storage
ORC Section 3734.02(F)

The Permittee must not store any container of hazardous waste received from any off-site source.

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

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

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

C.10 Recordkeeping
OAC Rule 3745-54-73

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

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

- (a) The Permittee must not store ignitable or reactive waste except in accordance with OAC Rules 3745-54-17 and 3745-55-76.
- (b) The Permittee must not locate containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line.
- (c) The Permittee must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and shall follow the storage procedures specified in Section F the permit application.

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

- (a) The Permittee must not store incompatible waste except in accordance with OAC Rules 3745-54-17(B) and 3745-55-77.
- (b) The Permittee must not place hazardous waste in an unwashed container that previously held an incompatible waste or material.

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

C.13 Reserved.

C.14 Closure and Post-Closure

OAC Rules 3745-55-10 through 3745-55-20, and 3745-55-78

At closure of the container area, the Permittee shall remove all hazardous waste and hazardous waste residues from the containment system, in accordance with the procedures in the closure plan set forth in Section I of the permit application.

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MODULE D – RESERVED

~~D.1. Corrective Action for Waste Management Units.
OAC Rule 3745-55-01~~

- ~~(a) The Permittee shall comply with OAC Rule 3745-55-01 and institute corrective action as necessary to protect human health and the environment for all releases of hazardous wastes or hazardous waste constituents from any waste management unit at the facility, regardless of the time at which waste was placed in such unit.~~
- ~~(b) The Permittee shall 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 the Director 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 determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.~~

MODULE E - CORRECTIVE ACTION REQUIREMENTS

PPG and USEPA entered into an Administrative Order on Consent (“AOC”), on April 5, 1991. Pursuant to the implementation of the AOC, PPG is in compliance with the Corrective action requirements of the orders, including requirements set forth in Ohio Administrative Code Rule 3745-54-101.

The AOC scope of work included seven Interim Measures (IM’s), a RCRA Facility Investigation (RFI) and a Corrective Measures Study (CMS). Ohio EPA has participated in the review of PPG’s implementation of the AOC, which included commenting on the IM’s, RFI and CMS, as well as other submittals. Five of the seven IM’s have been completed. The active IM’s are IM-II (Leachate Collection and Treatment) and IM-III (Public Access Controls). The final RFI report was approved by U.S. EPA on May 19, 1997. As a voluntary effort, PPG conducted site-specific human health and ecological risk assessments. These risk assessments were used to assess the data collected during the RFI and develop the CMS. A Draft CMS report was submitted to U.S. EPA on September 19, 1997, but it was never formally approved. U.S. EPA left the traditional Corrective Action administrative process at this point, and instead authorized PPG to implement a performance based approach.

Beginning in 1999, the U.S. EPA established reforms to the RCRA Corrective Action Program (RCRA Reforms). Progress at the Barberton Facility under these RCRA Reforms has been measured by two initial nationwide environmental indicators. Indicator CA-725 was established to determine if exposures to human health were currently under control. PPG achieved a “YES” determination on December 20, 2001. Indicator CA-750 was established to determine if the migration of contaminated groundwater is currently under control. PPG achieved a “YES” determination on January 22, 2007.

Another element of the RCRA Reforms was to allow the use of a performance-based approach to corrective action. The performance-based concept is to initially reach agreement on the goals for a remedial action site, as well as the specific measurements to demonstrate achievement of those goals. A facility would then be allowed to design and implement a remedial action based on the pre-determined goals and measurements. PPG and USEPA entered into the Performance Based Approach (PBA) Agreement in August 2001. Ohio EPA provided a letter of support to the PBA Agreement. The PBA Agreement is a voluntary program used to implement RCRA Corrective Action. Several remedies have been implemented under the PBA Agreement.

A Media Focus Document (MFD) was developed to outline the various WMU's and other areas identified for corrective action. The MFD summarized the goals of a remedial action as further elaborated in the Draft CMS. Additionally, the MFD identified the specific performance measurements used to evaluate compliance with the goals and summarized relevant project milestones. The latest version of the MFD was dated July 2007.

Coincident with the issuance of a renewed RCRA Permit by the State of Ohio, the Ohio EPA will become the only agency working with PPG with respect to the remaining Corrective Action activities. The AOC with USEPA and the Performance Based Agreement will be terminated coincident with the issuance of the renewed Ohio Permit. Additional and /or continuation of Corrective Action activities will be conducted under the Ohio Permit.

Goals may be achieved through the implementation of corrective measures, the assessment and management of risk, institutional controls, monitored natural attenuation or a combination thereof.

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

In accordance with OAC Rule 3745-50-10 a 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 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 major tool created to guide the performance based approach to the corrective action activities at PPG was a Media Focus Document (MFD), which grouped selected WMUs into several primary media focus areas. The CMS report formed the basis of the selected areas for the MFD. The MFD document, used as a project planning tool, evolved as corrective action data gathering, planning and measure implementation proceeded. The primary media focus areas are identified below with a summary of activities conducted thus far and the status of the unit in regards to meeting corrective action obligations of being protective of human health and the environment.

HUDSON RUN RESERVOIR (HRR) Sediment Focus Area

DESCRIPTION: A four to seven foot deep reservoir covering approximately 36 acres. Inflow is controlled by the upstream dam creating Lake Dorothy. Water level and outflow are controlled by a low to medium rise dam at the eastern end of the reservoir.

REMEDIAL GOAL: Eliminate, to the extent necessary, potential human and ecological exposure to contaminated sediment. Meet applicable Ohio ambient water quality standards.

CORRECTIVE MEASURE COMPLETED UNDER PBA: A sediment cap was installed on 7 acres in late fall 2003. The purpose of the in-situ subaqueous capping was to separate clean surface water from the contaminated sediments.

STATUS: Engineering Controls installed to contain contaminated sediments will require ongoing inspection and maintenance and performance monitoring (as needed) to ensure performance standards are maintained.

LOWER HUDSON RUN (LHR) Surface Water Focus Area

DESCRIPTION: A channelized stream running approximately 2,275 feet from the outlet of Hudson Run Reservoir to Wolf Creek, between Lime Lake One and Lime Lake Two. There are two low head dams in the channel.

REMEDIAL GOAL: Meet applicable Ohio ambient water quality standards for Constituents of Concern (COCs).

CORRECTIVE MEASURES COMPLETED UNDER PBA AND INTERIM MEASURE 2: PPG separated surface water from contaminated ground water infiltrating from Lime Lakes #1 and #2 by raising the surface water elevation above the ground water potentiometric surface in designated areas of the stream. The surface water elevation was raised by installing a low head dam in November, 2006 similar to the Low Head Impoundment installed in 1997 near the mouth of this waterway. Interim Measure 2 also actively diverts leachate (from the lime lakes) from entering the waterway. The subsurface capping of the Hudson Run Reservoir described above also prevented a source of constituents of concern from entering Lower Hudson Run from upstream.

STATUS: Engineering Controls which were installed to contain potential sources of contamination to LHR will require ongoing operation and maintenance and performance monitoring to ensure performance standards continue to be met. In August 2008, hexachlorobenzene was detected in surface water above Water Quality Criteria. The source was most likely contaminated sediments in the Lower Hudson Run. Therefore, sediment contamination needs to be addressed.

LOWER HUDSON RUN SEDIMENTS FOCUS AREA

DESCRIPTION: Contaminated sediments in the Lower Hudson Run Channel

REMEDIAL GOAL: Eliminate, to the extent necessary, potential human and ecological exposure to contaminated sediment. The sediment quality criteria are to be determined.

CORRECTIVE MEASURES COMPLETED UNDER PBA: Characterization activities have been conducted, and some limited removal of sediments has taken place.

STATUS: Contaminated sediments may have an impact on surface water and biota. Further action required.

TUSCARAWAS RIVER AND WOLF CREEK

DESCRIPTION: The Tuscarawas River is Modified Warm Water Habitat, runs roughly six stream miles through the PPG Facility, and is a major tributary to the Muskingum River, part of the Ohio River watershed. It has been partially channeled by dredging in the 1960's.

Wolf Creek is a tributary of the Tuscarawas, and is also Modified Warm Water Habitat. Approximately the last 1.1 miles of the creek are adjacent to PPG. Contamination was found during the RFI. "An evaluation of individual sample results suggests that VOCs are entering Wolf Creek surface water in the reach adjacent to Lime Lake 1." (RFI, E.9-26) A 1994 Ohio EPA study reported biological impairment of the stream.

The Tuscarawas River sediments and surface water are contaminated with volatile and semi-volatile organics (VOCs and SVOCs), metals and dissolved solids (TDS). Wolf Creek also is contaminated with VOCs and SVOCs. Some exceedances of water quality standards have been observed.

REMEDIAL GOAL: Attainment of chemical and biological criteria suitable for surface water and sediments in a Modified Warm Water Habitat.

CORRECTIVE MEASURES COMPLETED UNDER PBA: Chemical and Biological surveys of the Tuscarawas River were performed in 1994 (by Ohio EPA), 2001, and 2006.

STATUS: PPG conducted an updated assessment of the river in 2006. The findings convey that the stream has not attained the desired biocriteria, and is in partial nonattainment. Further action required.

Wolf Creek has not been investigated in over 15 years. Further action required.

MAIN PLANT GROUND WATER FOCUS AREA

DESCRIPTION: The main plant is divided by Hudson Run into the North Plant and South Plant, containing chemical manufacturing facilities, storage areas, tanks, offices and other structures. Areas not covered by structures are generally paved. In general, the ground water across the Facility at all depths above the shale confining layer has been affected by various Facility specific contaminants of concern including organic chemicals and metals. The bedrock high area has been identified as source area contributing to Main Plant area ground water. Ground water is contaminated at levels unacceptable for potable use and also is a potential source of contamination to surface water.

The main contaminants of concern in the ground water include perchloroethene, trichloroethylene, cis-1, 2-dichloroethylene, vinyl chloride, chloride, dissolved solids, barium, calcium, and sodium. Source areas for the ground water contamination include the Lime Lakes, the production areas (e.g., North and South Plants), and the former waste disposal areas (e.g., Contractors' Landfill).

REMEDIAL GOAL: Restoration of ground water to meet all regulatory standards. Continued control of migration of contaminated ground water (Corrective Action Environmental Indicator Determination 750 - Yes). Prevent surface water contamination above water quality standards. Prevent extraction except for monitoring and remediation.

CORRECTIVE MEASURES COMPLETED UNDER PBA: Surface paving, utility repair, and storm water management improvements were implemented to reduce vertical infiltration into the subsurface. This was conducted for the purpose of isolating to the extent practicable a source of chlorinated organic compounds from the bedrock high area, and to reduce the release of contaminants to surface water and sediments in Hudson Run and the Main Plant Area ground water.

STATUS: Ground water level measurements did not achieve the predicted elevation reduction following the paving improvements. Migration of contaminated ground water is under control (Corrective Action Environmental Indicator Determination 750 - Yes). Indications suggestive of reductive dechlorination of halogenated Constituents of Concern (COCs) have been observed in some of the wells. Ground water contamination remains. Further action required.

LIME LAKE #1:

DESCRIPTION: A 74 acre surface impoundment rising 40 feet from local grade. Approximately 3.6 million tonnes of waste are disposed here, mostly Solvay soda ash process wastes. Some chlorinated solvent process wastes, coal ash, and cinders are also disposed here.

REMEDIAL GOAL: Isolate to the extent practicable sources of chlorinated organic compounds from Lime Lake 1 to Main Plant area ground water, and nearby surface waters, by reduction of leachate production and dispersion. Prevent direct contact and wind dispersal.

CORRECTIVE MEASURES COMPLETED: A horizontal well leachate collection system was installed to control seep discharges to adjacent water bodies.

PERFORMANCE STANDARDS: Meet Ohio Surface Water Quality Standards for selected organic and inorganic constituents in adjacent surface water bodies (Wolf Creek and Lower Hudson Run). Eliminate impact to Main Plant ground water. Meet human health and ecological risk based standards.

STATUS: Migration of contaminated ground water is under control (Corrective Action Environmental Indicator Determination 750). Additional measures are required to control unit and minimize risk to human health and the environment.

LIME LAKE #2

DESCRIPTION: A 41 acre surface impoundment rising 55 feet from local grade. Approximately 2.3 million tonnes of waste are disposed here, mostly Solvay soda ash process wastes. Some chlorinated solvent process wastes, coarse asbestos, and coal and ash cinders are also disposed here. Dense Non-Aqueous Phase Liquids from chlorinated solvent manufacturing waste are known to be present within Lime Lake 2.

REMEDIAL GOAL: Isolate to extent practicable sources of chlorinated organics from Lime Lake 2 to Main Plant area ground water, and nearby surface waters, by reduction of leachate production and dispersion. Prevent direct contact and wind dispersal.

CORRECTIVE MEASURES COMPLETED: A horizontal well leachate collection and Dense Non-Aqueous Phase Liquids removal system was installed to control seep discharges.

PERFORMANCE STANDARDS: Meet Ohio Surface Water Quality Standards for selected organic and inorganic constituents in Lower Hudson Run. Eliminate impact to Main Plant ground water. Meet human health and ecological risk based standards.

STATUS: Migration of contaminated ground water is under control (Corrective Action Environmental Indicator Determination 750). Additional measures are required to control unit and minimize risk to human health and the environment.

LIME LAKES #3 THROUGH #6 – Southern Facility Ground Water

DESCRIPTION: Four Solvay soda ash process waste impoundments. Lime Lake #3 covers approximately 56 acres, rises about 38 feet above grade, and holds around 2.6 million tonnes of waste. Lime Lake #4 covers approximately 117 acres, rises about 40 feet above grade, and holds around 5.1 million tonnes of waste. Lime Lake #5 covers approximately 113 acres, rises about 30 feet above grade, and holds around 3.1 million tonnes of waste. Lime Lake #6 covers approximately 228 acres.

STATUS: These units are being remediated under an Ohio EPA Approved Sludge Management Plan, and Permits to Install under Ohio EPA's Division of Surface Water. The remedy is contouring to facilitate surface water run-off, amending surface materials with wastewater treatment plant sludge, and then establishing a vegetative cover. PPG has been providing habitat enhancements in the process.

Lime Lake #4 was remediated under consensual Findings and Orders. Lime Lakes #3, #4, and #5 have completed the remedy, and Lime Lake #6 is in progress with an estimated completion date of 2016.

CONTRACTOR'S LANDFILL

DESCRIPTION: A former open-pit clay mine that subsequently served as a disposal site for contractors' construction and demolition debris. The ground water is known to be contaminated with volatile organic compounds. For some compounds, concentrations exceed the Maximum Contaminant Limit for drinking water (OAC 3745-81-12 and OAC 3745-54-94) (MCLs).

REMEDIAL GOAL: Isolate to extent practicable sources of chlorinated organic compounds from Contractor's Landfill to Main Plant area ground water by reduction of leachate production and Monitored Natural Attenuation (MNA) in the regional aquifer.

RATIONALE FOR GOAL: Contractor's Landfill has been identified as a source area affecting Main Plant area ground water.

CORRECTIVE MEASURES COMPLETED: Leachate and ground water are intercepted by French drains, and conveyed to the on-site Waste Water Treatment Plant. A low permeability cover system and an upgradient ground water diversion system were installed in the summer of 2008, and completed in 2009.

PERFORMANCE STANDARDS: Permanent leachate flow reduction; Permanent leachate elevation reduction in key piezometers with historical baseline elevation data. Meet appropriate performance goals in the French drain discharges. Meet MCLs or risk-based standards in ground water.

STATUS: Further action (maintenance and monitoring) is required.

MAIN PLANT SOILS FOCUS AREA

DESCRIPTION: The plant is divided by Hudson Run into the North Plant and South Plant, containing chemical manufacturing facilities, storage areas, tanks, offices and other

structures. Areas not covered by structures are generally paved. Contaminated soils are present below the paving. The vapor intrusion pathway was modeled, and excess lifetime cancer risks meet Ohio EPA performance standards. Exposures may occur during invasive activities.

REMEDIAL GOAL: Eliminate the risk to on-site excavation workers engaged in infrequent and short term activity for dermal exposure to hexachlorobenzene (HCB), dioxins (TCDD), and other contaminants when excavation is required.

STATUS: Currently, exposures are eliminated by implementation of a Health and Safety Plan (Barberton Excavation Plan) during invasive activities. PPG is maintaining institutional controls. Institutional Controls are required.

SWMU's #'s 9, 61, 66, 81, and 90

DESCRIPTION: Wastewater tanks, floor drains, trenches and sumps in the Multi-Purpose Building (9), Chloroformate Process Area (61), CR-39 Process Area (66), and the Air Pollution Control system (81). Also, the former trichloroethene manufacturing plant (90).

REMEDIAL GOAL: Address historical soil contamination, and prevent future releases.

RATIONALE FOR GOAL: Analysis of soils during the RFI showed evidence of potential contaminant release by the materials of the type historically and currently managed in these areas.

CORRECTIVE MEASURES COMPLETED: The units were inspected, and repaired as needed to prevent releases. The units are covered by buildings or concrete, limiting direct contact exposures. The vapor intrusion pathways were evaluated, and excess lifetime cancer risks meet Ohio EPA performance standards. Exposures may occur during invasive activities.

STATUS: Further action to address soil contamination is required. Institutional controls will be evaluated.

TUSCARAWAS RIVER DREDGE SPOILS

DESCRIPTION: In 1965, the Ohio Department of Public Works dredged the Tuscarawas River for flood control, and deposited the material on the banks of the river. Material was placed on PPG property in several locations. Materials consisted of sediments as well as bank materials from the widening and straightening of the river.

REMEDIAL GOAL: Eliminate unacceptable risks to human health and the environment due to the presence of contaminants (hexachlorobenzene) in the dredge spoils.

CORRECTIVE MEASURES COMPLETED: Fencing was installed in areas where hexachlorobenzene was detected in dredge spoil surface samples at concentrations greater than 100 mg/kg. Two areas of the Tuscarawas River bank were armored with riprap to prevent dredge spoil from re-entering the river due to river bank erosion.

STATUS: Maintain current controls. Further action required to ensure restricted access, and to evaluate ecological risk.

IMPOUNDING RESERVOIR

DESCRIPTION: An area of approximately 240 acres immediately north of Lime Lake 6. Between 1959 and 1985, it was used to store and then release decant waters from Lime Lake 6.

REMEDIAL GOAL: Eliminate unacceptable risks to human health and the environment due to soil exposures.

STATUS: Evaluation of risk to the environment is required through a review of the existing Preliminary Ecological Risk Assessment, and completion of a Tier 1 Ecological Screening assessment. Current human exposures are under control.

WEST PLANT WMU 92

DESCRIPTION: The West Plant was developed in the 1940's as a source of limestone for soda ash production. The mine operated from 1942 until 1976. Other operations included asphaltic concrete manufacture, Portland cement manufacture, refractory brick reclamation, and stockpiling.

STATUS: 96 acres of the property, and three of the four WMUs, were sold to Norton Energy Storage LLC in 1999. The remaining unit was formerly a coal and waste brick pile. All materials had been removed prior to the RFI. Results from the RFI showed slightly elevated levels of metals and aromatics commonly associated with coal. The CMS evaluated the data, and concluded that no further action was necessary for that WMU. Ohio EPA concurs with that conclusion.

FORMER OHIO BRASS SETTLING PONDS WMU 110

DESCRIPTION: Two settling ponds formerly used for wastewater treatment by a lessee. After termination of the lease, the ponds were re-graded. Currently, the unit is an open, grassy field.

STATUS: The RFI found no evidence of contamination in surface soils or ground water, and no further action is required.

SAND QUARRY WMUs 83, 84, 87, 88, 89

DESCRIPTION: The sand quarry occupies approximately 31 acres, and is surrounded on three sides by nearly vertical high walls. Sand is no longer being mined. Five WMUs have been identified in this area.

WMU 83 is the permitted hazardous waste storage building (HWSB), which is subject to closure requirements, and the conditions of this permit's Module C. WMU 84, HWSB Outdoor Container Storage Area, was an outside pad previously used (all drums were removed prior to the RFI) for temporary storage of drummed waste generated during pre-RFI monitoring well installation and investigative activities. WMU 87 is the Sand Quarry Holding Basin, which formerly received storm water and may have received sand quarry wash water and a one-time historical release from the Catalyst Sump (WMU 78) overflow. WMU 88 is the Former Sand Quarry Pond that was used for sand washing and is currently backfilled. WMU #89, the Former Catalyst Detonation Area was closed following RCRA and Ohio EPA regulations in 1985. The RFI concluded that there is no indication of a release from these five WMUs.

STATUS: Because the RFI concluded that there were no releases from these units, further action is not indicated. The permitted unit will have to undergo closure according to the approved closure plan in the permit when it is taken out of service.

NORTH SPOILS AREA WMU 96

DESCRIPTION: An approximately 3 acre unit. The unit was used for the disposal of slaker sands, clean fill, and demolition debris. It was also used as a staging area for pipe salvage during well abandonment activities. In 1991, during Facility characterization activities, drum fragments were observed. Geophysical investigation found magnetic anomalies. In April 1996, under Interim Measure VII, remediation activities were conducted. Approximately 1800 cubic yards of PCB - contaminated soil and seven drums were removed. Samples of soil, drum contents, surface water and excavation water were sampled and analyzed. Confirmatory sampling completed, the excavation was backfilled and re-vegetated.

STATUS: Remedy completed. No further action.

SOUTH SPOILS AREA WMU 97

DESCRIPTION: This unit was used for general disposal from 1980 until 1992. The materials consisted of soil, concrete, asphalt, sand, limestone, brick, clay tile and silt. It

covers approximately 45,000 square feet. In July 1996, the unit was re-graded and vegetated under authorization received pursuant to OAC Rule 3745-27-13. The ground surface was cleared, re-graded and seeded. Swales were excavated to control precipitation runoff, and to minimize horizontal infiltration. Seeps were also eliminated under this measure. The unit is fenced to restrict access.

STATUS: Remedy completed. No further action.

E.4 No Corrective Action Required at this Time
OAC Rule 3745-54-101

Reserved

E.5 RCRA Facility Investigation (RFI)
OAC Rule 3745-55-011

In the event of a newly discovered unit, the Permittee must conduct an RFI to thoroughly evaluate the nature and extent of any release of hazardous waste(s) and hazardous constituent(s) from all applicable WWUs identified in Condition E.10. The major tasks and required submittal dates 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 to Ohio EPA, in case of a newly discovered waste management unit, on a timeframe established by Ohio EPA.

- (i) Within 45 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 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 45 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 and conducted:

- Develop and implement a sampling and analysis plan to monitor municipal waste water treatment plant sludge being accepted for amending the surface of Lime Lake Four.
- Install a leachate collection system in Lime Lakes One and Two, and Contractors' Landfill, and a waste water treatment plant to treat the collected leachate.
- Install fencing and security as needed to control and restrict public access.
- Investigate previously plugged and abandoned brine extraction wells. Four wells met criteria for re-plugging, which was done per Ohio Department of Natural Resources guidance.
- Evaluate risks to human health and the environment, identify sources and transport mechanisms, and identify appropriate remedial actions for contaminated sediments in affected adjacent waterways.
- Remove cement kiln dust from Waste Management Unit 94.
- Remove PCB contaminated materials in North Spoils Area.

The interim measures were implemented by PPG. The leachate collection and treatment systems and the inspection and maintenance of the fencing are on-going activities. All other Interim Measures are complete.

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 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 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 Work Plan and upon Ohio EPA approval of that Work Plan, perform additional investigations as needed.

E.8 Corrective Measures Study (CMS)

If Ohio EPA determines, based on the results of the RFI and any other relevant information, that corrective measures are necessary, Ohio EPA will notify the Permittee in writing that the Permittee must conduct a CMS either as 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 90 days from the notification by Ohio EPA of the requirement to conduct a CMS.

- (i) Within 45 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 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 45 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) For Newly Identified Units

The Corrective Measure selected for implementation must: (1) be protective of human health and the environment; and as applicable (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.

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) Financial Assurance
OAC Rule 3745-54-101

Within 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 Current Corrective Measures

The following Corrective Measures are a culmination of activities conducted under the PBA Agreement between the U.S.EPA and the Permittee, rather than through a more conventional CMS/CMI process. The Permittee must implement corrective measures as described below.

(a) The Permittee shall initiate entering into an Environmental Covenant with Ohio EPA pursuant to Ohio Revised Code Sections 5301.80 through 5301.92 within sixty (60) days of issuance of this Permit Renewal/Modification. The Environmental Covenant will restrict some portions of the property to industrial use. Other non-residential reasonable anticipated uses may also be considered, such as commerce, agriculture and recreation, for portions of the Facility. This restriction will run with the land and will be binding upon all future Facility owners should the Facility be transferred. The Environmental Covenant will include a legal description of the subject Facility, identifying the contaminated areas and describe acceptable and unacceptable land uses. The Permittee shall submit a survey plat and legal description with the Environmental Covenant, specifying the areas of the facility to be restricted, and indicating the anticipated future use for each parcel. Ohio EPA will monitor the Facility owner's adherence to the Environmental Covenant to ensure continued protection of human health and the environment. The types of limitations for this Facility may include:

(i) Industrial land use limitations. The Facility shall not be used for residential, commercial (other than those associated with and

incidental to industrial operations) or agricultural activities, but may be used for certain industrial activities. The term “residential activities” shall include, but not be limited to, the following:

- (A) Single and multi-family dwelling and rental units;
- (B) Day care centers and preschools;
- (C) Hotels and motels;
- (D) Educational (except as a part of industrial activities within the Facility) and religious facilities;
- (E) Restaurants and other food and beverage services (except as a part of industrial activities within the Facility);
- (F) Entertainment and recreational facilities (except as a part of industrial activities within the Facility);
- (G) Hospitals and other extended care medical facilities (except as a part of industrial activities within the Facility); and
- (H) Transient or other residential facilities.

The term “industrial activities” includes manufacturing, processing operations and office and warehouse use, including but not limited to production, storage and parking/driveway use.

- (ii) Agricultural land use limitations. The Facility shall not be used for residential or commercial activities, but may be used for certain agricultural activities, such as growing crops, fruit production, or animal grazing, to be determined on a case-by-case basis, in consensus with the Facility.
- (iii) The Facility may only be used for certain commercial activities, to be determined on a case-by-case basis, in consensus with the Facility.
- (iv) The Facility may only be used for certain recreational activities, such as baseball or soccer fields, to be determined on a case-by-case basis, in consensus with the Facility.
- (v) Prohibit the extraction of ground water for any purpose other than monitoring, disposal at the waste water treatment plant, or pursuant to a ground water remedial action on designated portions of the Facility.

(b) Hudson Run Reservoir

The sediment cap is the remedy in place for this focus area. However, periodic inspection, particularly after major storm events, will be needed, as well as a plan for repairing the submarine cap if it is damaged.

The Permittee shall prepare and submit an Inspection and Maintenance Plan (IMP) within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the IMP, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended IMP or new IMP. The IMP, 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 IMP must be authorized by Ohio EPA.

(c) Lower Hudson Run Surface Water Focus Area

Periodic inspections, particularly after major storm events, will be needed for the low head dams, as well as a plan for repairing the dams if they are damaged.

The Permittee shall prepare and submit an Inspection and Maintenance Plan (IMP) within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the IMP, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended IMP or new IMP. The IMP, 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 IMP must be authorized by Ohio EPA.

(d) Lower Hudson Run Sediments Focus Area

There is remaining contaminated sediment at higher concentrations which are primarily viewed as a potential contamination source that could affect surface water quality in the LHR or further downstream. The Permittee shall be solely responsible for designing and implementing the corrective measure (focused dredging of sediment that has accumulated at the Low Head Impoundment as well as the sediment mounds). The Permittee will inform Ohio EPA five business days prior to beginning work, so that Ohio EPA can provide on-site oversight. The contaminated material must be disposed off-site. Water levels in LHR may be lowered temporarily to facilitate sediment removal. Water that may be generated during sediment removal actions or by solids dewatering must be treated on-site at the IM-II Plant. This will be accomplished according to a schedule developed by the Permittee and provided to Ohio EPA within 90 days of the permit renewal. The Permittee shall use good faith efforts to reach consensus with Ohio EPA on corrective measures design and implementation issues.

(e) Tuscarawas River and Wolf Creek

The Permittee shall evaluate the riparian zone, specifically the Qualitative Habitat Evaluation Index for both streams, and determine if habitat enhancements would be feasible and beneficial. The Permittee shall submit a report of these findings, and a work plan if enhancements are feasible, to Ohio EPA within one year of the issuance of this permit. The Permittee shall develop a work plan to determine if sediments or the water column in Wolf Creek are contaminated with volatile organic compounds (per SW-846 Method 8260B), to Ohio EPA within 60 days of the issuance of this permit. The Permittee shall implement the plan within 90 days following approval by the Ohio EPA, and submit a report to Ohio EPA upon completion. If remedial actions are indicated, the Permittee shall develop and implement an Agency approved remedial action plan. The Permittee shall evaluate the need for further remedial action following the completion of the Total Maximum Daily Loads for the Tuscarawas River Watershed process, and submit a report to Ohio EPA, within one year of the completion of that process. If additional remedy selection is needed, the Permittee will follow Permit Condition E.8.

(f) Main Plant Ground Water Focus Area

Surface paving, utility repair, and storm water management improvements were implemented as remedies to limit vertical infiltration. However, periodic

inspection and maintenance of these remedies is required. The Permittee shall prepare and submit an Inspection and Maintenance Plan (IMP) within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the IMP, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended IMP or new IMP. The IMP, 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 IMP must be authorized by Ohio EPA.

The Permittee shall continue to monitor the natural attenuation of pollutants in ground water, and ensure that the spatial extent of contamination is not expanding. This would be a part of a larger, periodic, Facility-wide ground water monitoring program. The Permittee shall continue implementation of, the July 2003 Sitewide Groundwater Monitoring Program Plan (SWGMP) and sampling and analysis procedures as documented in the March 2004 Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum (QAPPA), and subsequent approved modifications.

Periodically the Permittee shall evaluate potential biological and chemical enhancements to natural attenuation in areas where the ground water plume may begin to migrate downgradient, or natural attenuation is stalled or not proceeding at an acceptable rate. The Permittee shall prepare a ground water attenuation enhancement feasibility study and report its findings within one year of this permit renewal/modification, and implement those enhancements which are considered beneficial. The Permittee shall initiate additional ground water attenuation enhancement feasibility studies upon notification by Ohio EPA of the requirement to conduct such.

- (g) Lime Lake #1

The Permittee shall continue to operate and maintain the existing leachate collection system, until such time as PPG can develop a remedy to eliminate the generation of leachate. The Permittee shall maintain and update the existing Operation and Maintenance Plan as necessary to ensure optimal operation of the system.

The Permittee shall continue to monitor the natural attenuation of pollutants in ground water, and ensure that the spatial extent of contamination is not expanding. This would be a part of a larger, periodic, Facility-wide ground water monitoring program. The Permittee shall continue implementation of the July 2003 SWGWMP and sampling and analysis procedures as documented in the March 2004 Sitewide Groundwater Monitoring Program QAPPA, and subsequent approved modifications.

The Permittee shall place an additional vegetative cap to minimize the potential for direct contact, to reduce further vertical infiltration, prevent wind dispersal of contaminated soils, and enhance the value of the space as habitat, within two years of issuance of this permit.

This remedy will be implemented according to a schedule developed by the Permittee and provided to Ohio EPA. The Permittee shall use good faith efforts to reach consensus with Ohio EPA on corrective measures design and implementation issues within one year of the permit renewal.

The Permittee shall investigate the feasibility of improving the Qualitative Habitat Evaluation Index (QHEI) along the adjacent reach of Wolf Creek. The Permittee will submit a report and a work plan if improvements are feasible, within one year of the issuance of this permit.

The Permittee shall maintain the low head dams in Lower Hudson Run to prevent the unacceptable releases to surface water from this unit. The Permittee shall prepare and submit an Inspection and Maintenance Plan (IMP) within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the IMP, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended IMP or new IMP. The IMP, 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 IMP must be authorized by Ohio EPA.

(h) Lime Lake #2

The Permittee shall continue to operate and maintain the existing leachate collection system, until such time as PPG can develop a remedy to eliminate the generation of leachate. The Permittee shall maintain and update the existing Operation and Maintenance Plan as necessary to ensure optimal operation of the system.

The Permittee shall continue to monitor the natural attenuation of pollutants in ground water, and ensure that the spatial extent of contamination is not expanding. This would be a part of a larger, periodic, Facility-wide ground water monitoring program. The Permittee shall continue implementation of the July 2003 (SWGWP) and sampling and analysis procedures as documented in the March 2004 Sitewide Groundwater Monitoring Program (QAPPA), and subsequent approved modifications.

The Permittee shall place an additional vegetative cap to minimize the potential for direct contact, to reduce further vertical infiltration, prevent wind dispersal of contaminated soil, and enhance the value of the space as habitat, within two years of issuance of this permit.

This remedy will be implemented according to a schedule developed by the Permittee and provided to Ohio EPA. The Permittee shall use good faith efforts to reach consensus with Ohio EPA on corrective measures design and implementation issues, within one year of the permit renewal.

(i) Lime Lakes #3 through #6

The Permittee shall continue reclamation under the approved Sludge Management Plan and Permits to Install.

The Permittee shall investigate the feasibility of improving the Qualitative Habitat Evaluation Index (QHEI) along the adjacent reach of Tuscarawas River. The Permittee will submit a report, and a work plan if improvements are feasible, within one year of the issuance of this permit.

(j) Contractors' Landfill

The Permittee shall prepare and submit an Operation and Maintenance (O&M) Plan for the cover system and the ground water diversion system within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the O&M plan, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.
- (ii) Ohio EPA will approve or modify and approve, in writing, the amended O&M plan or new O&M plan. The 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 O&M plan must be authorized by Ohio EPA.

The Permittee shall implement the work plan entitled *Contractors' Landfill Infiltration Control Performance Measures and Post Construction Monitoring*, approved April 11, 2008 by Ohio EPA with the concurrence of USEPA.

The Permittee shall continue to monitor the natural attenuation of pollutants in ground water, and ensure that the spatial extent of contamination is not expanding. This would be a part of a larger, periodic, Facility-wide ground water monitoring program. The Permittee shall continue implementation of the existing Facility-wide ground water monitoring plan.

(k) Main Plant Soils Focus Area

The Permittee shall continue implementation of the Barberton Excavation Plan. The plan addresses preventing unacceptable exposures to workers conducting invasive activities at the Facility. The plan also addresses the safe and legal management of excavated contaminated soils.

(l) WMU's #'s 9, 61, 66, 81, and 90.

The Permittee shall address affected soils on a Facility-wide basis, as part of the Main Plant Soils Focus Area.

(m) Tuscarawas River Dredge Spoils

The Permittee shall prepare and submit an Inspection and Maintenance Plan (IMP) for the existing security and river bank erosion control measures within 90 days of the date of this permit renewal.

- (i) Within 45 days of receipt of any Ohio EPA comments on the IMP, the Permittee must submit either an amended or new plan that incorporates Ohio EPA's comments.

- (ii) Ohio EPA will approve or modify and approve, in writing, the amended IMP or new IMP. The IMP, 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 IMP must be authorized by Ohio EPA.

The Permittee will conduct a scoping level ecological risk assessment per Ohio EPA Guidance to ensure that potential negative effects to sensitive receptor species are within acceptable boundaries. The remedies for this unit may need to be re-evaluated if the risk assessment documents unacceptable exposures. A report on these assessments shall be submitted within one year of issuance of this permit.

- (n) Impounding Reservoir

The Permittee shall re-evaluate existing ecological and human health risk assessment data to ensure that potential negative affects to sensitive receptors are within acceptable boundaries. The remedies for this unit may need to be re-evaluated if the risk assessments document unacceptable exposures. A report on these assessments shall be submitted within one year of issuance of this permit.

- (o) Sand Quarry WMUs 84, 87, 88, 89

The Permittee shall address affected soils on a Facility-wide basis, as part of the Main Plant Soils Focus Area. (Unit 83 is addressed in Module C.)

- (p) Facility-Wide

The Permittee shall continue the inspection and maintenance of the Public Access Interim Measure. The Permittee may review the need for continued inspection and maintenance of the Public Access Interim Measure. There may be justification to discontinue some or all of this Interim Measure. The Permittee shall address affected soils on a Facility-wide basis, as part of the Main Plant Soils Focus Area.

The Permittee shall restrict future use of the Facility, where appropriate, to specific land uses, and restrict the extraction and use of ground water in specific areas of the Facility, through an Environmental Covenant per Ohio Revised Code 5301.80 through 5301.92.

The Permittee shall continue implementation of the Facility-wide ground water monitoring plan.

The Permittee shall continue implementation of the Barberton Excavation Plan.

All operations and maintenance plans, inspection and maintenance plans, soil management plans (excavation plans), ground water monitoring plans, and health and safety plans mentioned above are hereby incorporated by reference into this permit.

Beginning with the month following the renewal of this permit, PPG shall provide Ohio EPA with progress reports for each month on the tenth day of the following month. The progress reports shall conform to the format of the current reports required under the USEPA Administrative Order on Consent.

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

Within 18 months of the issuance of this Permit Renewal, the Permittee must provide financial assurance in the amount necessary to implement the corrective measures of Permit Condition E.10 as required by OAC Rule 3745-54-101 (B) and (C).

E.11 Newly Identified WMUs or Releases
OAC Rule 3745-54-101

(a) General Information

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

- (i) The location of the unit on the site topographic map;
- (ii) Designation of the type of unit;
- (iii) General dimensions and structural description (supply any available drawings);
- (iv) When the unit was operated; and

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

(b) Release Information

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

E.12 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.11.

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.13 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.

DRAFT

MODULE F - RESERVED

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MODULE Z - INTEGRATED GROUND WATER MONITORING

OAC Rule 3745-54-101

The PPG Barberton facility historically covered approximately 3,250 acres of land in Summit County within the cities of Barberton, New Franklin, and Norton. The surrounding land uses include residential, industrial/commercial, agricultural, and forest/field/wetlands areas. The uppermost bedrock in the area consists of lower Pennsylvanian Age sandstones and shales of the Sharon Conglomerate, the lowest unit of the Pottsville Group. Below the Sharon Conglomerate lie Mississippian Age shales. These shales prevent or reduce the movement of ground water and contaminants from the Sharon Conglomerate into the underlying bedrock units. Erosion and glaciation has created deep buried valleys in the bedrock units. The area experienced a series of advances of continental glaciers during the Pleistocene Epoch. The final glacial advance occurred during the Wisconsin Stage. In its retreat, the glacier deposited a layer (10 to 30 feet thick) of sandy, silty till over the bedrock highs. It also filled the deep bedrock valleys with a heterogeneous mixture of tills and outwash deposits of silts, clays, sands and gravel on the valley floors overlain in some areas by lacustrine silts and clays.

Ground water occurs within the glacial deposits and in the Sharon Conglomerate. Shale layers within the Sharon Conglomerate create perched zones of ground water. Some of the perched ground water flows laterally toward outcrop areas at the edges of the bedrock forming local seeps and springs. The flow of ground water below the perched zones of the Sharon Conglomerate is mainly laterally toward the bedrock valleys filled with glacial outwash. Monitoring wells at the facility monitor several ground water zones including shallow bedrock, shallow glacial outwash, the base of the Sharon Conglomerate; the mid glacial outwash; the deep glacial outwash in the valleys; the source areas (leachate wells); the perched bedrock; the perched zones in the glacial outwash/fill; and other miscellaneous areas in the Sharon and sub-Sharon bedrock. In general, the ground water across the facility at all depths above the shale confining layer has been impacted by various facility specific contaminants of concern including organic chemicals and metals. The main contaminants of concern in the ground water include tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, vinyl chloride, hexachlorobenzene, chloride, dissolved solids, barium, calcium, and sodium. Source areas for the ground water contamination include the Lime Lakes, the production areas (e.g., North and South Plants), and the former waste disposal areas (e.g., Contractors' Landfill).

With respect to surface water, PPG is located within the Upper Tuscarawas River watershed. Streams that pass through or directly adjacent to the PPG facility include the Tuscarawas River plus two of its tributaries, Wolf Creek and Hudson Run. Based upon water level elevations in nested wells in the glacial outwash materials, it was determined that the ground water generally has an upward vertical flow direction in the vicinity of the streams. Therefore, it is assumed that the streams in the vicinity of the facility are mainly

gaining streams with the ground water generally discharging into the surface water bodies. PPG has completed various investigative and remedial activities at the site since the 1980s including an RFI/CMS, a sitewide human health risk assessment, and various interim measures. As a part of these projects, PPG has installed over 500 monitoring wells to monitor ground water at the multiple waste management units at the facility. Currently approximately 400 of these wells still exist at the site. The available ground water data collected periodically since the 1980s indicate that the facility has affected the quality of ground water at the site and that the documented ground water contamination plumes are intermingled and, thus, unit specific ground water monitoring is not practical. Appendix IX Volatile Organic Compounds and Semi-Volatile Organic Compounds, inorganic compounds, and Target Analyte List metals have been analyzed numerous times during the historic sampling of the site monitoring wells.

Based upon information gathered and processed during the RFI/CMS and the human health risk assessment, it was determined that the ground water exposure pathway is incomplete. This conclusion is based mainly upon the fact that current domestic wells and areas which may be developed and require domestic wells are upgradient of the source areas or are separated from the source areas by an hydraulic divide such as the Tuscarawas River, Wolf Creek, and Hudson Run. The ultimate receptors of the contaminated ground water are the surface water bodies located in or running through the PPG property. In addition, in December 2001, it was determined through an indicator CA-725 that exposures to human health were currently under control. In January 2007, it was determined through an indicator CA-750 that the migration of contaminated ground water is currently under control.

In August 2001, PPG and U. S. EPA entered into a Performance Based Corrective Action Agreement (PBA). Under the PBA, a long term sitewide ground water monitoring program was approved in September 2003. Details of the monitoring program are documented in the July 2003 Sitewide Groundwater Monitoring Program Plan (SWGMP) and sampling and analysis procedures are documented in the March 2004 Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum (QAPPA). The original ground water monitoring program included quarterly sampling of 25 monitoring wells and semi-annual sampling of an additional 56 wells. Eleven additional wells were included for static water level measurements, only. The first year of monitoring began in December 2003. During the first year of monitoring, samples from wells in the area around Lime Lake 2 also were analyzed for gross alpha, gross beta, and organochlorine compounds including pesticides and PCBs. The expanded list of analytes for LL-2 was part of a suspected buried drum investigation at that unit, only. In 2005 and 2006, the monitoring wells were sampled on an annual basis in July of each year. In 2007, PPG proposed moving to a triennial sampling program because the contaminant and MNA parameter concentrations are relatively stable. It was agreed that an evaluation of the data

from each subsequent sampling event will be used to determine if triennial sampling is still appropriate or if a different sampling frequency is indicated.

The purpose of the long term sitewide ground water monitoring program is to evaluate the effectiveness of intrinsic bioremediation and monitored natural attenuation (MNA) at reducing the concentrations of contaminants in the ground water and to ensure that the spatial extent of the ground water contamination is not expanding. The rationale for monitoring well selection included:

- Wells were selected to provide a manageable sitewide ground water monitoring network. Unit specific sampling was not included. If required, additional remedy specific ground water sampling will be conducted as part of this or another program.
- Wells were selected at locations in or downgradient of the source areas to allow monitoring of intrinsic bioremediation/MNA processes over the long term and over a large area. Concentrations within source areas (e.g., North and South Plants, Lime Lake 2) are not expected to change appreciably in the short term, as long as free product remains present.
- Monitoring is focused on the shallow ground water since all ground water flows up through this zone prior to discharging into the local streams. However, wells are also included that monitor the deeper ground water in specific areas.
- Monitoring wells included in the program are all in or downgradient of the source areas. Because site specific background values for inorganic constituents were established statistically for both the bedrock and outwash aquifers during the RFI, no background sampling is performed as part of this program.

The original sitewide ground water monitoring program has been revised several times. These revisions include:

- Cyanide was added as an analyte for LL-2 and Contractors Landfill, only.
- Semi-volatile analyses were reduced to HCB, only. This applies to selected wells in the North and South plants and Lime Lake 2.
- Well NP-10 was found to be damaged. It was abandoned and replaced with a new well, NP-10*.

- Wells LL2-06B, LL2-06B-V2, and LL2-15A were replaced in the monitoring network by LL2-02B*, LL2-03B* and LL2-06B*-V1. The original wells had integrity problems and were abandoned.
- The Target Analyte List metals analyzed was reduced to arsenic, manganese, nickel, lead, copper, antimony, and thallium.
- Monitoring well TRN-02C was removed from the monitoring network because of an obstruction in the casing that hindered sampling activities. A replacement well was not added to the monitoring network.
- Sampling frequency was changed to triennial beginning with the sampling event conducted in 2009. Triennial sampling is sufficient at this time because concentrations of contaminants and MNA indicators are not changing rapidly. However, sampling frequency will be re-evaluated when each current sampling event data are evaluated.
- Well CLF-16B was added to the monitoring network as part of the post-construction infiltration control monitoring at the Contractors Landfill.

This module presents permit conditions addressing the requirements for an integrated ground water monitoring program at the PPG facility. Ground water contamination plumes from a number of units regulated under OAC Rule 3745-54-101 have comeled at the site. The units currently undergoing corrective actions in accordance with OAC 3745-54-101 include waste management units that closed prior to 1980 and manufacturing units not requiring hazardous waste permitting. All plumes are the result of pre-1980 activities at the facility. The only unit currently requiring a permit is a hazardous waste storage building (HWSB). This unit does not require ground water monitoring in accordance with OAC 3745-54-90 through 100 because it is completely enclosed and has secondary containment.

Because the contaminant plumes from the various units undergoing corrective actions are intermingled, it is not practical to separate them for ground water monitoring purposes. A more efficient multifaceted approach is a sitewide ground water monitoring program in accordance with OAC 3745-54-101, the July 2003 Sitewide Ground Water Monitoring Program Plan as modified by subsequent correspondence between PPG and U. S. EPA/Ohio EPA, and the March 2004 Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum (QAPPA). This combined approach is hereafter referred to as the Integrated Ground Water Monitoring Program or IGWMP.

Z.1. Applicability
OAC Rule 3745-54-101

- (a) The units currently undergoing corrective action in accordance with OAC 3745-54-101 include waste management units that closed prior to 1980 and manufacturing units not requiring hazardous waste permitting. All plumes are the result of pre-1980 activities at the facility. The only unit currently requiring a permit is a hazardous waste storage building (HWSB). This unit does not require ground water monitoring in accordance with OAC 3745-54-90 through 100 because it is completely enclosed and also has secondary containment. The Permittee must comply with the applicable requirements in OAC Rule 3745-54-101 and institute corrective action as necessary to protect human health and the environment for all releases of hazardous wastes or constituents from any waste management unit/area at the facility, regardless of the time at which waste was placed in such unit/area for the following units/areas:

Main Plant Area Ground Water including:

Contractors Landfill (CLF)
North Plant (NP)
South Plant (SP)
Lime Lake 1 (LL-1)
Lime Lake 2 (LL-2)
Former Sand Quarry (SQ)
Tuscarawas River North (TRN)

Southern Facility Ground Water including:

Lime Lakes 3 through 6 (LL-3 through LL-6)
Tuscarawas River South (TRS)

These units/areas have previously been regulated under a Performance Based Corrective Actions Agreement that was entered into by PPG and U.S. EPA with Ohio EPA concurrence in August 2001. The ground water monitoring at these units has been in accordance with the Performance Based Corrective Action Agreement Sitewide Groundwater Monitoring Program Plan dated July 2003.

The Performance Based Corrective Action Agreement Sitewide Groundwater Monitoring Program Plan dated July 2003, and any subsequent modifications

approved by the Ohio EPA (and those modifications approved by USEPA prior to termination of the Administrative Orders on Consent) is hereby incorporated by reference as a permit condition.

- (b) Reserved.
- (c) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary, to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the director that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator 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 determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

Z. 2. Ground Water Remediation Standard (GWRS)

Based upon the work done during the RFI/CMS, the Human and Ecological Risk Assessments, the CA-725 and CA-750, and a 2006 assessment of the Tuscarawas River, the ground water contamination is not moving offsite and the ground water contaminant plumes are not expanding. The risk assessment concluded that the ground water pathway is incomplete because the site ground water discharges to various surface water bodies prior to the surface water exiting the site. Chlorinated solvents were detected in the Tuscarawas River during the 2006 sampling event, but at levels below aquatic life water quality standards and human health drinking water quality standards.¹ The GWRS has been established in this Permit due to hazardous constituents being detected in the ground water. Because the ground water exposure pathway is incomplete, the GWRS are included as remediation goals for the site ground water. In the future, if the GWRS can be met at a particular unit, the Permittee may pursue a clean or risk based 'no further action' for that unit.

(a) List of Hazardous Constituents and Ground Water Clean-up Standards

The hazardous constituents listed in the Appendix to OAC Rule 3745-54-98 detected in the ground water underlying a unit/area and reasonably expected

¹ Hexachlorobenzene was detected at concentrations exceeding human health drinking and non-drinking water standards, but it is believed that this is historical contamination, and not due to a current discharge of ground water to surface water. There is no aquatic life criterion for hexachlorobenzene.

to be contained in or derived from the waste contained in the unit/area to which the GWRS applies and their ground water clean-up standards are listed in the attached Table 1.

In addition to the hazardous constituents listed in Table 1, the Permittee must monitor the following target analytes:

Intrinsic Bioremediation/Natural Attenuation and Field Analytes:

Chloride
TDS
Dissolved methane
Dissolved ethene
Dissolved ethane
Nitrate/nitrite
Total organic carbon (TOC)
pH (field)
Dissolved Oxygen (field)
Oxidation Reduction Potential (Eh, field)
Dissolved ferrous iron (field)

(b) Point of Action: At this time, it appears the ground water is discharging to on-site surface water bodies and, therefore, not leaving the site. If the routine evaluations required by Permit Condition Z-5 indicate that the ground water flow directions have changed and ground water does begin moving off site, then the Permittee will ensure that the GWRS is met at the property boundary throughout the upper most aquifer.

(c) Permit Period

The permit period, during which the GWRS applies, is equal to 10 years. The permit period must begin on the effective date of this permit renewal and must end 10 years after the effective date of this permit renewal. During the permit period the Permittee must continue its sitewide ground water monitoring program. The Permittee shall implement corrective action beyond the facility property boundary, where necessary, to protect human health and the environment.

Z.3. Well Location, Installation, Maintenance, and Removal

(a) The Permittee's ground water monitoring system is documented in the Sitewide Ground Water Monitoring Program Plan as modified by various

correspondences between PPG and U. S. EPA and/or Ohio EPA. The uppermost aquifer at the site is comprised of the bedrock units of the Sharon Conglomerate and the overlying glacial deposits. No background water quality samples will be collected as part of this program. Background water quality for inorganic constituents was determined statistically during the RFI. Samples must:

- (i) Represent ground water quality at locations in and downgradient of source areas.
 - (ii) Demonstrate the effectiveness of intrinsic bioremediation/MNA processes.
 - (iii) Demonstrate that the spatial extent of ground water contamination is not expanding horizontally or vertically.
 - (iv) If required, additional remedy specific ground water sampling will be conducted as part of this or another program.
- (b) The monitoring system consists of the ground water wells as specified in the Permit Application on Table 2. The locations of these wells are shown on Figures 1 and 2 in the Site Wide Ground Water Monitoring Plan.
- (c) Wells included in the sitewide ground water monitoring program and identified in Permit Condition Z.3(b) must be cased in a manner that maintains the integrity of the monitoring well bore hole. The casing must be screened and packed with gravel or sand, where necessary, to enable collection of ground water samples. The annular space above the sampling depth must be sealed to prevent contamination of samples and the ground water.
- (d) Removal or replacement of any monitoring well in Permit Condition Z.3(b) will be in accordance with the Appendix to OAC Rule 3745-50-51 permit modification process. Each change must be accompanied by a revised map showing the location of the well removed from and/or added to the monitoring network.
- (e) Whenever any of the wells specified in Permit Condition Z.3(b) are replaced, the Permittee must demonstrate to Ohio EPA that the ground water sample quality at the replacement well meets the criteria in Permit Condition Z.3(a) within 60 days of the date of replacement using means appropriate to the reason for replacement.

Z.4. Sampling and Analysis Procedures

- (a) The Permittee must implement an IGWMP that complies with the July 2003 Sitewide Ground Water Monitoring Program plan as modified by various correspondences between PPG and U. S. EPA and/or Ohio EPA and includes the procedures in the March 2004 Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum (QAPPA). The sitewide ground water monitoring program includes consistent sampling and analysis procedures that ensure monitoring results that provide a reliable indication of ground water quality below the facility and are in compliance with this Permit Condition.
- (b) The Permittee's IGWMP as per the March 2004 QAPPA includes sampling and analytical methods that are appropriate for ground water sampling and that accurately measure hazardous constituents in ground water samples.
- (c) Field and analytical data must be validated in accordance with the procedures specified in the March 2004 QAPPA.

Z.5. Ground Water Surface Elevation

The Permittee must determine the ground water surface elevation at each well identified in Table 2 in Permit Condition Z.3(b) each time ground water is sampled using the methods in the QAPPA.

Z.6. Sampling Frequency

Ground water sampling is currently conducted on a triennial basis. The next sampling event will take place in the summer of 2012.

After each sampling event, the sampling frequency will be evaluated by the Permittee and Ohio EPA to determine if triennial monitoring is still applicable. Sampling frequency may change during the life of the permit with Ohio EPA approval. Samples will be collected from each well listed on Table 2 each time the ground water is sampled, unless the "Rationale for Inclusion" indicates that the well is used for SWL (static water level), only.

The compounds to be sampled and analyzed at each well are documented on Table 2 and include the following:

- Appendix IX Volatile Organic Compounds, selected dissolved Target Analyte List metals (arsenic, manganese, nickel, lead, copper, antimony, and thallium), chloride, pH, TDS, and intrinsic bioremediation/MNA analytes including dissolved gases will be collected from each of the wells during each of the sampling events.
- Hexachlorobenzene samples will be collected from a subset of wells in the LL-2, North Plant, and South Plant areas during each sampling event. These wells are NP-08A, NP-12, NP-16, NP-19A, NP-29, NP-29V1, NP-29V2, LL2-02B*, LL2-03B*, LL2-06B*V1, LL2-14B*, SP-01B, SP-03B, SP10C, and SP-22B.
- Semi-volatile organic compounds, in addition to HCB, have been detected historically in the wells listed in the above bullet. Because the detections of Semi-Volatile Organic Compounds other than HCB have tended to be sporadic, these constituents have been omitted from the sitewide ground water monitoring program since 2005. However, periodic sampling of select wells should be performed to evaluate if the concentrations of these constituents are remaining stable. During the second ground water sampling event conducted during the permit period, samples from the wells listed in the above bullet shall also be analyzed for Appendix IX Semi-Volatile Organic Compounds.
- Organochlorine compounds including pesticides and PCBs historically were detected in some wells from the LL-2 area. During the second ground water monitoring event conducted during the permit period, the Permittee shall analyze samples from the following wells for these compounds: LL2-03B*, LL2-06B*V1, and LL2-14B*.
- Metals other than the selected Target Analyte List metals listed above historically have been detected in the site wells. During the second ground water monitoring event conducted during the permit period, the Permittee shall analyze samples from all the wells for the complete list of dissolved Target Analyte List metals.

The sampling procedures for each constituent are described in the March 2004 QAPPA.

Z.7. Statistical Procedures: Reserved.

Z.8. Operating Record and Reporting
OAC Rules 3745-54-73, 3745-54-75, and 3745-54-77

(a) Operating Record

The Permittee must enter all of the following information obtained in accordance with Permit Module Z. in the operating record:

- (i) Ground water monitoring data collected in accordance with this permit including actual levels of constituents.
- (ii) The laboratory results from each of the wells and their associated qualifiers including the laboratory sheets for the metals and full volatile and semi-volatile analyses (must include method codes, method detection limits, and units of measurement);
- (iii) The date each well was sampled (tabulated);
- (iv) The date, time, and identification of all blanks and duplicates;
- (v) Any field log documentation of deviation from the procedures in the QAPPA, including documentation of parameter omissions during the sampling event;
- (vi) The date the Permittee received the results from the laboratory;
- (vii) The date the owner or operator completed their review of the analytical laboratory's verification of the accuracy and precision of the analytical data and determined its quality.
- (viii) The results of the data validation review per Permit Condition Z.8(a)(vii) 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;
- (ix) Results of all blanks and duplicates (trip, field, equipment, and method);

- (x) Results of the field analyses;
- (xi) Reserved: The statistical evaluation of the data (must include all computations, results of statistical tests, and date the statistical evaluation was completed);
- (xii) Any change in well status (e.g. well integrity issues make the well unsuitable for sampling);
- (xiii) Ground water surface elevations taken at the time of sampling each well;
- (xiv) Data and results of the determination of the ground water flow rate and direction;
- (xv) Evaluation of the efficiency of any corrective actions performed to bring the ground water quality into compliance with the GWRS per Permit Condition Z.2.
- (xvi) Evaluation of aquifer conditions with respect to intrinsic bioremediation/MNA including whether the subsurface conditions continue to support reductive dechlorination.
- (xvii) Recommendations for biological and/or chemical enhancements to bioremediation/MNA or other remedial options in areas where the ground water plume begins to migrate downgradient.

(b) Required Reporting

(i) Required Reporting

After each sitewide ground water monitoring event, the Permittee must submit a report to the Director within 60 days of receiving all analytical data from the laboratory.

The reports must include, at a minimum, the following:

- (A) A summary of the analytical results including tables and text as needed;
- (B) Presentation of ground water elevations and flow directions including a ground water flow map(s).

- (C) Laboratory QA/QC information needed to perform a Tier 1 Data Validation.
 - (D) An electronic copy on disk using the Microsoft Excel platform of all ground water and blank data.
 - (E) A summary of the evaluation of the data including any graphs or maps needed to explain data trends or other conclusions drawn from the data.
 - (F) An evaluation of the effectiveness of bioremediation/MNA as a corrective action at the site. The facility will present an analysis based on the method found on pages 13 through 16 of Wiedemeier², as well as any other evidence the facility may wish to include to support its evaluation.
 - (G) If necessary, recommendations for biological and/or chemical enhancements to bioremediation/MNA or other remedial options in areas where the ground water plume begins to migrate downgradient or bioremediation/MNA processes are not proceeding at an acceptable rate, based on the screening analysis.
 - (H) Recommendations for future sampling frequency.
- (ii) Required Annual Reporting: Reserved.
 - (iii) Required Semi-annual Reporting: Reserved.
 - (iii) Other Reports

The Permittee must comply with any other reporting requirements that become necessary under Permit Condition Z.9 in accordance with the schedules covered by that permit condition and as required by OAC Rule 3745-54-77(C).

² Weidermeir *et. al.* Overview of the Technical Protocol for Natural Attenuation of Chlorinated Aliphatic Hydrocarbons in Groundwater Under Development for the Air Force Center for Environmental Excellence. Air Force Center for Environmental Excellence. 1996.

Z.9. Integrated Ground Water Monitoring Program
OAC Rules 3745-54-101

- (a) The Permittee is required to establish and implement a ground water corrective action program under OAC Rule 3745-54-101 and must take corrective action, as necessary; to ensure the GWRS as specified in Permit Condition Z.2 are not exceeded at the property boundary should the ground water pathway become complete in the uppermost aquifer.
- (b) The Permittee must implement, as necessary, a corrective action program that prevents hazardous constituents specified in Permit Condition Z.2(a) from exceeding their respective clean-up standards specified in Permit Condition Z.2(a) at the downgradient property boundary, and beyond the property boundary during the permit period specified in Permit Condition Z.2(c) by removing the hazardous constituents or by treating them in place.
- (c) Reserved
- (d) The Permittee must establish and implement a ground water monitoring program to fully characterize the contaminated ground water as required by OAC Rule 3745-50-44(B)(8)(a) and to demonstrate the effectiveness of the corrective action program. Ground water monitoring must be effective in determining compliance with the GWRS in Permit Condition Z.2 and in determining the success of any corrective action program in this condition. The ground water monitoring program must include:
 - (i) Installation and maintenance of the ground water monitoring system documented in the Sitewide Groundwater Monitoring Program plan and as defined in Permit Condition Z.2(b), and, as necessary to protect human health and the environment, at and beyond the downgradient property boundary. The ground water monitoring system must comply with the requirements in Permit Condition Z.3.
 - (ii) Collection, preservation, and analysis of samples pursuant to Permit Conditions Z.4, Z.5, and Z.6 and the approved QAPPA.
 - (iii) The Permittee must conduct a sampling program triennially or as mutually agreed upon by PPG and Ohio EPA for each chemical parameter and hazardous constituent specified in Permit Condition

Z.2(a) and Z.6. from each well specified in Permit Condition Z.3(b) and Z.6.during the permit period and any extensions due to corrective action implementation.

- (iv) Any additional sampling shall be taken at an interval (frequency) that assures, to the greatest extent feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, hydraulic gradient, and the fate and transport characteristics of the potential contaminants.
 - (v) Wells beyond the property boundary shall be sampled where necessary to protect human health and the environment, unless the Permittee demonstrates to the Agency that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such action. 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 determined on a case-by-case basis.
 - (vi) The Permittee must maintain a record of ground water analytical data as measured for the permit period.
 - (vii) The Permittee must determine the ground water flow rate and direction in the uppermost aquifer during each ground water monitoring event using the procedures specified in the QAPPA.
- (e) Response Action
- (i) Based on the results of the Permittee's ground water monitoring program, intrinsic bioremediation/MNA are working as expected and contaminant concentrations are decreasing in areas of the plume and the plumes are not expanding spatially. Therefore, the Permittee shall continue under routine IGWMP monitoring.
 - (ii) If the ground water plume begins to migrate downgradient and/or intrinsic bioremediation/MNA processes stall and/or are not proceeding at an acceptable rate based on the analysis in Z.8 (b) (i) (f), the Permittee shall evaluate , propose, and (if practical) implement biological and/or chemical enhancements to the intrinsic bioremediation/MNA or shall evaluate, propose, and (if practical) implement other remedial options necessary to prevent the migration of the plume and/or increase the rate of contaminant degradation.

- (iii) The Permittee must continue corrective action measures during the permit period to the extent necessary to ensure that the GWRS is not exceeded at the facility boundary. If the Permittee is conducting corrective action at the end of the permit period, the Permittee must continue corrective action for as long as necessary to achieve compliance with the GWRS.

At any time, the Permittee may conclude that a unit has met the remedial goal(s), and further monitoring is unnecessary. The Permittee may then initiate an accelerated monitoring program, and demonstrate that the clean-up standards listed in Permit Condition Z.2(a) have not been exceeded for eight consecutive quarters at any well in Permit Condition Z.3(b) that monitors the subject unit for any analyte listed in Permit Condition Z.2(a). At that point, the Permittee may submit a permit modification under OAC Rule 3745-50-51 to cease corrective action and ground water monitoring for that unit. Any monitoring wells not included in the reduced monitoring program should be properly abandoned following the standards in the Technical Guidance Manual³.

- (f) The Permittee must report in writing to the Director on the effectiveness of the corrective action monitoring program after each sitewide ground water monitoring event according to Permit Condition Z.8.
- (g) If the Permittee determines the corrective action program established by this permit no longer satisfies the requirements of OAC Rule 3745-54-101, the Permittee must, within ninety (90) days of that determination, submit an application for a permit modification per OAC Rule 3745-50-51 to make any appropriate changes to the program.

³ Ohio Environmental Protection Agency. Technical Guidance for Ground Water Investigations: Chapter 9 - Sealing Abandoned Monitoring Wells and Boreholes. Columbus. February 2005.
<http://www.epa.state.oh.us/ddagw/Documents/TGM-9.pdf>

**Table 1
 Hazardous Constituents and Clean-up Standards**

The following contaminants have been detected in ground water samples at PPG Barberton.

VOLATILE ORGANIC COMPOUNDS detected historically include:

Hazardous Constituents	Clean-up Standards (ug/L)
Tetrachloroethene	5
Trichloroethene	5
Cis-1,2-dichloroethene	70
Trans-1,2-dichloroethene	100
1,1-dichloroethene	7
1,1-dichloroethane	PQL
1,2-dichloroethane	5
1,1,1-trichloroethane	200
1,1,2-trichloroethane	5
1,1,2,2-trichloroethane	PQL
1,1,2,2-tetrachloroethane	PQL
1,1,1,2-tetrachloroethane	PQL
Vinyl chloride	2
Carbon disulfide	PQL
Carbon tetrachloride	5
Acetone	PQL
Methylene chloride	5
Benzene	5
Chlorobenzene	100
Toluene	1,000
Xylene	10,000
Ethylbenzene	700
Chloroform	80
1,4-dioxane	PQL
Isobutyl alcohol	PQL
Methyl methacrylate	PQL
Acetonitrile	PQL
Chloromethane	PQL
Chloroethane	PQL
Styrene	100
1,2-dichloropropane	5
2,4-dimethylphenol	PQL
2-hexanone	PQL
2-butanone	PQL
2-methyl-2-pentanone	PQL
1,2,3-trichloropropane	PQL

Semi-Volatile Organic Compounds detected historically include:

Hazardous Constituents	Clean-Up Standards (ug/L)
Hexachlorobenzene (HCB)	1
Hexachlorobutadiene	PQL
Hexachloroethane	PQL
1,2-dichlorobenzene	600
1,2,3-trichlorobenzene	PQL
1,2,4-trichlorobenzene	PQL
1,2,3,5-tetrachlorobenzene	PQL
1,2,4,5-tetrachlorobenzene	PQL
Pentachlorobenzene	PQL
1,3-dichlorobenzene	PQL
1,4-dichlorobenzene	75
Pentachloronitrobenzene	PQL
4-chloroaniline	PQL
Aniline	PQL
2-methylphenol	PQL
3-methylphenol	PQL
4-methylphenol	PQL
2,4-dichlorophenol	PQL
2,6-dichlorophenol	PQL
2,3,4,6-tetrachlorophenol	PQL
2-chlorophenol	PQL
di-n-octyl-phthalate	PQL
Diethyl phthalate	PQL
Bis-(2-ethylhexyl) phthalate	PQL
Bis-(2-chloroethyl) ether	PQL
Benzyl alcohol	PQL
Acetophenone	PQL
Isophorone	PQL
Indeno(1,2,3-cd) pyrene	PQL
m-cresol	PQL
o-cresol	PQL
p-cresol	PQL
Naphthalene	PQL
Phenol	PQL

Pesticides detected historically include:

Hazardous Constituents	Clean-up Standards (ug/L)
4,4-'DDD	PQL
4,4-'DDE	PQL
4,4-'DDT	PQL
Endrin	2
Endrin ketone	PQL
di-endrin	PQL
Endrin aldehyde	PQL
Endosulfan II	PQL
Alpha BHC	PQL
Beta BHC	PQL
Delta BHC	PQL
gamma chlordane	PQL
Heptachlor	0.4
Methoxychlor	40

Numerical clean-up standards are either MCLs or action levels for public drinking water supplies. For compounds without MCLs or action levels, clean-up standards are to be based on the laboratory practical quantification limit (PQL) per OAC Rule 3745-54-97 (I) (5), at the time of the analysis. Any practical quantification limit (PQL) must be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

Inorganic constituents detected historically:

Hazardous Constituents	Clean-up Standards (ug/L)*
Arsenic	10
Aluminum*	1,240/31
Antimony*	19/21
Iron*	1,570/3,400
Manganese*	1,274/2,390
Copper	1300
Nickel*	43/12
Lead	15
Thallium*	6/12.3
Beryllium	4
Cadmium*	5/6
Cobalt	13
Mercury	2
Selenium	50
Barium	2000
Cyanide	200
Chloride*	85,000/126,000

* Background concentrations derived during the RFI are used as clean-up standards for these target analytes. The first concentration is for the glacial outwash and the second concentration is for the Sharon bedrock. If the background concentrations were greater than the MCL, the background concentration was listed as the clean-up standard. If the MCL was greater than background, the MCL was used. In cases where there is no MCL, the background concentration was used.

Table 2.
Monitoring Wells Information

The following monitoring wells are included in the sitewide ground water monitoring program. Several aquifer zones are monitored including shallow, mid outwash, deep outwash, lower perched ground water, and the base of the Sharon Conglomerate. Some wells are used for static water level measurements, only.

Monitoring well ID	Depth monitored	Analytes	Rationale for inclusion
NP-5A	Shallow GW	None	SWL, only
NP-08A	Shallow GW	Group B	MNA
NP-10	Mid Outwash	Group A	MNA, Source area, Plume migration
NP-12	Shallow GW	Group B	Source area
NP-16	Shallow GW	Group B	Source area
NP-18A	Shallow GW	None	SWL, only
NP-19A	Shallow GW	Group B	MNA
NP-25A	Shallow GW	None	SWL, only
NP-29	Shallow GW	Group B	Degradation rates, MNA
NP-29V1	Shallow GW	Group B	Degradation rates, MNA
NP-29V2	Shallow GW	Group B	Degradation rates, MNA
NP-31A	Shallow GW	Group A	MNA
LL1-03A*	Shallow GW	Group A	Plume migration, MNA
LL1-04	Shallow GW	None	SWL, only
LL1-05B*	Shallow GW	Group A	Source area, plume migration, MNA
LL1-06A1	Shallow GW	Group A	Plume migration, MNA
LL1-09B	Shallow GW	None	SWL, only
LL1-11B	Shallow GW	Group A	Plume Migration, MNA
LL1-12B*	Shallow GW	None	SWL, only
LL1-14A	Shallow GW	Group A	Plume Migration, MNA
LL1-17B	Shallow GW	Group A	Source area, Plume migration, MNA
LL1-17C	Mid outwash	Group A	Source area, plume migration, MNA
LI1-22A	Shallow GW	Group A	MNA
LL1-22B	Mid outwash	Group A	MNA
LL1-22C	Deep outwash	Group A	MNA
LL1-23A	Shallow GW	Group A	Plume Migration, MNA
LL1-23B	Mid outwash	Group A	MNA
LL1-23C	Deep outwash	Group A	MNA
LL2-02B*	Shallow GW	Group B	Plume migration, MNA
LL2-03B*	Shallow GW	Group B	Plume migration, MNA

LL2-06B*V1	Shallow GW	Group B	Source area, Degradation Rate, MNA
LL2-08A	Shallow GW	Group A	Degradation Rates, MNA
LL2-08AV1	Shallow GW	Group A	Degradation Rates, MNA
LL2-08AV2	Shallow GW	Group A	Degradation Rates, MNA
LL2-11A	Shallow GW	Group A	MNA
LL2-12A	Shallow GW	Group A	MNA
LL2-14B*	Shallow GW	Group B	Source Area
LL3-02A	Shallow GW	Group A	MNA
LL3-04*	Shallow GW	Group A	MNA
LL3-05	Shallow GW	Group A	MNA
LL3-06	Shallow GW	Group A	MNA
LL3-12A	Shallow GW	Group A	MNA
LL4-04	Shallow GW	None	SWL, only
LL4-09	Shallow GW	Group A	MNA
LL4-12A	Shallow GW	None	SWL, only
LL4-13A	Shallow GW	Group A	MNA
LL4-15	Shallow GW	Group A	MNA
LI5-02	Shallow GW	Group A	MNA
LL5-04	Shallow GW	Group A	MNA
LL5-09A*	Shallow GW	Group A	MNA
LL5-10	Shallow GW	Group A	MNA
LL5-22A	Shallow GW	None	SWL, only
LL6-02	Shallow GW	None	SWL, only
LL6-04A	Shallow GW	Group A	MNA
LL6-21A	Shallow GW	Group A	MNA
CLF-07B	Lower perched	Group A	MNA, Post Construction
CLF-13D	Lower perched	Group A	MNA, Post construction
CLF-13E	BSC	Group A	MNA, Post construction
CLF-14C	BSC	Group A	MNA, Post construction
CLF-16B	Upper perched	Group A	MNA, Post construction
CLF-19B	Lower perched	Group A	MNA, Post construction
CLF-19C	BSC	Group A	MNA, Post construction
CLF-21A	Lower perched	Group A	MNA, Post construction
CLF-21B	BSC	Group A	MNA, Post construction
SP-01B	Lower perched	Group B	Source Area
SP-03B	Shallow GW	Group B	MNA
SP-10B*	Shallow GW	Group A	MNA
SP-10C	BSC	Group B	MNA
SP-17A	Shallow GW	Group A	MNA
SP-17B	BSC	Group A	MNA

SP-18C	BSC	Group A	MNA
SP-22B	BSC	Group B	MNA
SP-25	Shallow GW	Group A	MNA
SP-36A	Shallow GW	Group A	Degradation Rates, MNA
SP-36AV1	Shallow GW	Group A	Degradation Rates, MNA
SP-36AV2	Shallow GW	Group A	Degradation Rates, MNA
SP-43A	Shallow GW	None	SWL, only
SQ-02	Shallow GW	Group A	
SQ-02V1	Shallow GW	Group A	Plume migration, Degradation Rates, MNA
SQ-02V2	Shallow GW	Group A	Plume migration, Degradation rates, MNA
SQ-03A	Shallow GW	Group A	Plume migration, MNA
SQ-03B	BSC	Group A	Plume Migration MNA
SQ-07A	Shallow GW	Group A	Plume Migration, MNA
SQ-07B	BSC	Group A	Plume Migration, MNA
TRN-02B	Mid outwash	Group A	MNA
TRN-05A	Shallow GW	Group A	MNA
TRN-05C	Deep outwash	Group A	MNA
TRS-01A	Shallow GW	Group A	MNA
TRS-05A	Shallow GW	Group A	MNA

- **Group A:** Analytes include Appendix IX VOLATILE ORGANIC COMPOUNDS s, selected dissolved Target Analyte List metals (arsenic, manganese, nickel, lead, copper, antimony, and thallium), chloride, pH, TDS, and intrinsic bioremediation/MNA indicator analytes including dissolved gases will be collected from each of the wells during each of the sampling events. Cyanide will also be collected from wells located in LL-2 and CLF, only.
- **Group B:** All analytes from Group A plus HCB by SIMs or some other high resolution method at each sampling event.
- **SWL, only.** Wells with this designation are used to get water level elevation data, only.
- **As per Permit Condition Z.6,** during the second ground water sampling event conducted during the permit period, all wells will be sampled for the complete list of Target Analyte List metals. Subsets of wells, as defined in Permit Condition Z.6, will also be sampled for Appendix IX

Semi-Volatile Organic Compounds and organochlorine compounds during this sampling event.

- **Upper and lower perched zones are in the bedrock. BSC stands for Base of the Sharon Conglomerate.**

DRAFT