



# eDocument Workflow Data Ingestion Form

DERR - Hazardous Waste Permitting

**Note:** All HW Permitting Documents fall under "Permit-Intermediate" doc type.

## Keyword Summary:

<b>Secondary ID:</b>	OHD 004 198 917	<b>Stamped date on doc:</b>	3/26/2020
<b>Facility Name:</b>	PPG Industries, Inc. – Barberton, Ohio		
<b>County:</b>	Summit	<b>CBI/Trade Secret Info (see protocol below)</b>	
<b>Program:</b>	RCRA C – Hazardous Waste	<b>Request contains CBI/TS claim?</b>	No
<b>Permit Type:</b>	Permit to Install & Operate	<b>Was a "public" copy included?</b>	NA
<b>Permit Subtype:</b>	Application & Support	<b>Financial Assurance Info (see protocol below)</b>	
<b>Permit Classification:</b>	Permit Application	<b>Request contains FA policy/account # info?</b>	No
<b>Permit Purpose:</b>	Renewal	<b>Contingency Plan Info (see protocol below)</b>	
<b>Confidentiality Status:</b>	Public Record for Publication	<b>Request contains facility staff pers/home phone #'s?</b>	No

### CBI/Trade Secret Protocol

Applications or requests that contain a claim of Confidential Business Information (CBI) or "trade secret" **are not be ingested** into the Agency's eDoc system. However, any claims must be made at the time of application submission, as required by both OAC rule 3745-49-03 and OAC rule 3745-50-30. Permittees must comply with the complete requirements of the above-cited rules, which include, among other things, submission of a corresponding "public" copy of the application or request which should be ingested into eDocs.

### Financial Assurance Info Protocol

If the application contains "original signature" financial assurance documents, these documents **must be forwarded** to CO FA staff (Shawn Sellers or Melissa Cheung) as these types of documents must be secured in CO's fireproof file cabinet. Also, even if the FA information included in a mod application is not "original signature", if it includes information like insurance policy, bank account, letter of credit or bond numbers, these impacted pages should simply be physically removed and not scanned/included as a part of the ingested application. In place of the removed page, a page can be inserted which states: "Pages of this application which contain financial assurance mechanism details specific to policy or account numbers have been removed from this web-available version of the document."

Regarding review of FA components of mods, ERAS has set up a [tracking/request system](#) on SharePoint where DO staff can make a review request the HW FA Review Request list which can be accessed from the DMWM's Financial Assurance site.

### Contingency Plan Info Protocol

If the application contains facility staff personal/home phone number information, the impacted pages should simply be physically removed and not scanned/included as a part of the ingested application. In place of the removed page, a page can be inserted which states: "Pages of this application which contain facility staff personal/home phone number information have been removed from this web-available version of the document."

**Form Completed by:** Halee Smith

**3/26/2020**

### Comments



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DERR - Hazardous Waste Permitting

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## Keyword Summary:

<b>Secondary ID:</b>	OHD004 198917	<b>Stamped date on doc:</b>	6/24/2022
<b>Facility Name:</b>	PPG Industries – Barberton		
<b>County:</b>	Summit	<b>CBI/Trade Secret Info (see protocol below)</b>	
<b>Program:</b>	RCRA C – Hazardous Waste	<b>Request contains CBI/TS claim?</b>	No
<b>Permit Type:</b>	Permit to Install & Operate	<b>Was a "public" copy included?</b>	NA
<b>Permit Subtype:</b>	Application & Support	<b>Financial Assurance Info (see protocol below)</b>	
<b>Permit Classification:</b>	NOD Response	<b>Request contains FA policy/account # info?</b>	No
<b>Permit Purpose:</b>	Renewal	<b>Contingency Plan Info (see protocol below)</b>	
<b>Confidentiality Status:</b>	Public Record for Publication	<b>Request contains facility staff pers/home phone #'s?</b>	No

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**Form Completed by:** Halee Smith

**6/28/2022**

### Comments





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[www.ppg.com](http://www.ppg.com)

**Hadley Stamm**  
Senior Remediation Project Manager

**Via E-Mail**

June 24, 2022

Ms. Halee Smith  
Central Office  
Ohio EPA - Division of Environmental Response and Revitalization  
50 West Town Street, Suite 700  
Columbus, Ohio 43215

**Re: Hazardous Waste Permit Renewal Application  
Response to Notice of Deficiency  
Revised Renewal Application  
PPG Industries, Norton, Ohio RCRA Permit Renewal  
EPA ID No. OHD 004198917**

Dear Ms. Smith:

PPG Industries, Inc. (PPG) is submitting this response to Ohio EPA's January 19, 2022, Hazardous Waste Renewal Application Notice of Deficiency letter. Following a pre-application in-person meeting with Ohio EPA held in Barberton, Ohio, on February 28, 2020, PPG submitted a Permit Renewal Application on March 26, 2020. Ohio EPA issued a Notice of Deficiency letter dated October 6, 2020, to which PPG responded on January 29, 2021. The January 29, 2021, response included a revision of Section J (Revision 1) and updated figures in response to agency comments. On January 19, 2022, Ohio EPA issued a Notice of Deficiency letter.

With this response, PPG is including a complete application package incorporating all revisions made in response to Ohio EPA's January 19, 2022, Notice of Deficiency letter. The text of the application is provided in Word as requested. Section J is marked as Revision 2; all other Sections are marked as Revision 1. PPG is also providing a redline/strikeout document showing the edits made to Ohio EPA's markup of PPG's January 29, 2021, revised Section J, as requested by Sylvia Chinn-Levy. If Ohio EPA requires redline/strikeout relative to PPG's January 29, 2021, revised Section J or to PPG's original March 26, 2020 renewal application, please let us know.

Much of the revisions incorporated into the enclosed revised application respond to Ohio EPA's comments seeking additional detail as to certain items and Ohio EPA's request to reorganize certain information particularly with respect to site-wide groundwater. Following receipt of the January 19, 2022, Notice of Deficiency letter, and a conference call between Ohio EPA and PPG on February 22, 2022, we agreed to a process whereby Ohio EPA and PPG would review different subsections of Section J over the course of a series of markups, comments and conference calls. These conference calls occurred on March 31, 2022, April 14, 2022, May 9, 2022, and May 16, 2022. This revised application package reflects the discussions during each of these conference calls as well as exchanged revisions and comments.

When Ohio EPA begins the process of preparing a draft permit, it is PPG's understanding that Table J-2 included in this renewal application will not be part of the permit itself. PPG has worked closely with Ohio EPA to create an extensive Table J-2 listing documents referenced in the text of the application as well as identifying those which are current operable documents. Thus, Table J-2 is a living reference document and ongoing edits, updates and insertion of Ohio EPA document reference numbers subsequent to this submission do not require formal revision of the application and do not trigger permit modification after the renewal permit is issued.

As noted in PPG's initial renewal application submission, this renewal application seeks to continue the cooperative and flexible implementation of corrective action activities, recognizing the collaborative manner in which corrective action has been implemented at this Facility. As part of this renewal application, PPG is providing updates to the ongoing activities including a current listing of those plans that describe or otherwise relate to the ongoing activities. PPG expects these plans to be incorporated by reference into the new renewal permit with an understanding that such incorporation by reference does not result in the need for formal modifications pursuant to OAC 3745-50-51 for revisions to those plans, or future plans approved by Ohio EPA. PPG requests that the renewal permit expressly affirm this understanding.

Revisions to existing plans, and development of new plans, would require review and written approval by Ohio EPA. Written approval may be by letter from the Ohio EPA project manager, in the same manner as agency approvals are provided to interim status facilities undergoing corrective action where there is no hazardous waste permit. The renewal permit should include a specific provision stating that all existing plans governing PPG's activities at the site and all future approved plans required pursuant to the permit, including approved revisions to such plans, are incorporated by reference in the permit without the need for permit modification under OAC 3745-50-51 to the extent such modification may otherwise have been triggered. PPG's goal is to ensure the numerous and complex corrective action activities can continue to be implemented without unnecessary additional administrative steps and paperwork. To the extent Ohio EPA believes formal modification needs to occur in certain circumstances, PPG requests the opportunity to discuss those narrow circumstances during permit development. Any such exceptions to the general rule should be explicitly listed in the permit.



Ms. Halee Smith

June 24, 2022

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Contact me if you have any questions or require any further information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Hadley Stamm', followed by the letters 'es'.

Hadley Stamm  
Remediation Project Manager  
Enclosure

cc: R. Beals, Ohio EPA  
S. Chinn-Levy, Ohio EPA  
L. McEvoy, Ohio EPA  
N. McKenna, Ohio EPA  
B. Mitchell, Ohio EPA  
N. Oryshkewych, Ohio EPA  
J. Palmer, Ohio EPA  
A. Rahman, Ohio EPA  
M. Tarka, Ohio EPA  
W. Lavey, MDLLP  
B. Golla, Arcadis  
J. Thompson, PPG  
Project Files



**PPG INDUSTRIES, INC.**  
*BARBERTON, OHIO*

**OHIO HAZARDOUS WASTE FACILITY INSTALLATION AND  
OPERATION PERMIT**

**PERMIT NUMBER: 02-77-0453**

**USEPA ID: OHD 004 198 917**

**RENEWAL APPLICATION**

**JUNE 2022**



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## LIST OF ATTACHMENTS

Attachment A:	RCRA Subtitle C Site Identification Form and Hazardous Waste Permit Information Form
Attachment I:	Hazardous Waste Storage Building Closure Certification
Attachment J:	Corrective Actions Documentation



## **Section A: PART A APPLICATION FORM**

This section presents the Resource Conservation and Recovery Act (RCRA) Subtitle C Site Identification Form and the Hazardous Waste Permit Information Form containing the information required by Title 40 Code of Federal Regulation (CFR) Section 270.13 and Ohio Administrative Code (OAC) Chapter 3745-50-43. The forms have been completed and have been signed by the appropriate responsible officials. The RCRA Subtitle C Site Identification Form and Hazardous Waste Permit Information Form are provided in Attachment A.

**ATTACHMENT A:**

**RCRA SUBTITLE C SITE IDENTIFICATION FORM AND HAZARDOUS  
WASTE PERMIT INFORMATION FORM**



United States Environmental Protection Agency  
RCRA SUBTITLE C SITE IDENTIFICATION FORM



## 1. Reason for Submittal (Select only one.)

<input type="checkbox"/>	Obtaining or updating an EPA ID number for an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
<input type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
<input type="checkbox"/>	Site was a TSD facility and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, $> 1$ kg of acute hazardous waste, or $> 100$ kg of acute hazardous waste spill cleanup in <b>one or more months of the reporting year</b> (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input checked="" type="checkbox"/>	Submitting a new or revised Part A Form

## 2. Site EPA ID Number

O	H	D	0	0	4	1	9	8	9	1	7
---	---	---	---	---	---	---	---	---	---	---	---

## 3. Site Name

PPG INDUSTRIES, INC.
----------------------

## 4. Site Location Address

Street Address <b>4829 FAIRLAND ROAD</b>		
City, Town, or Village <b>NORTON</b>	County <b>SUMMIT</b>	
State <b>OH</b>	Country <b>USA</b>	Zip Code <b>44203</b>

## 5. Site Mailing Address

☐ Same as Location Address

Street Address <b>4829 FAIRLAND ROAD</b>		
City, Town, or Village <b>BARBERTON</b>		
State <b>OH</b>	Country <b>USA</b>	Zip Code <b>44203</b>

## 6. Site Land Type

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> County	<input type="checkbox"/> District	<input type="checkbox"/> Federal	<input type="checkbox"/> Tribal	<input type="checkbox"/> Municipal	<input type="checkbox"/> State	<input type="checkbox"/> Other
---	---------------------------------	-----------------------------------	----------------------------------	---------------------------------	------------------------------------	--------------------------------	--------------------------------

## 7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary) <b>325211</b>	C. <b>325188</b>
B. <b>325199</b>	D. <b>326113</b>

## 8. Site Contact Information

☐ Same as Location Address

First Name	<b>BRIAN</b>	MI	Last Name	<b>SATTERFIELD</b>	
Title	<b>MANAGER, EHS</b>				
Street Address	<b>4829 FAIRLAND ROAD</b>				
City, Town, or Village	<b>BARBERTON</b>				
State	<b>OH</b>	Country	<b>USA</b>	Zip Code	<b>44203</b>
Email	<b>BSATTERFIELD@PPG.COM</b>				
Phone	<b>(330) 825-7863</b>	Ext		Fax	<b>(330) 825-2199</b>

## 9. Legal Owner and Operator of the Site

## A. Name of Site's Legal Owner

☐ Same as Location Address

Full Name	<b>PPG INDUSTRIES, INC.</b>	Date Became Owner (mm/dd/yyyy)	<b>4/1/1984</b>		
Owner Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other				
Street Address	<b>ONE PPG PLACE</b>				
City, Town, or Village	<b>PITTSBURGH</b>				
State	<b>PA</b>	Country	<b>USA</b>	Zip Code	<b>15272</b>
Email					
Phone		Ext		Fax	
Comments					

## B. Name of Site's Legal Operator

☒ Same as Location Address

Full Name		Date Became Operator (mm/dd/yyyy)	<b>4/1/1984</b>		
Operator Type	<input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other				
Street Address					
City, Town, or Village					
State		Country		Zip Code	
Email					
Phone		Ext		Fax	
Comments					

**10. Type of Regulated Waste Activity (at your site)**

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

**A. Hazardous Waste Activities**

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
<input checked="" type="checkbox"/>	a. LQG	-Generates, in any calendar month (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Receives Hazardous Waste from Off-site	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5 Recycler of Hazardous Waste	
<input type="checkbox"/>	a. Recycler who stores prior to recycling	
<input type="checkbox"/>	b. Recycler who does not store prior to recycling	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption	
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption	

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

D001	D002	D003	D004	D007	D008	D009
D011	D018	D019	D022	D029	D032	D033
D034	D035	D038	D039	D040	D042	F002
F003	F005	F039	K073	P005		

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


**11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)****A. Other Waste Activities**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Transporter of Hazardous Waste—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Underground Injection Control
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. United States Importer of Hazardous Waste
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Recognized Trader—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter

**B. Universal Waste Activities**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If “Yes” mark all that apply. Note: Refer to your State regulations to determine what is regulated.
<input type="checkbox"/>	a. Batteries
<input type="checkbox"/>	b. Pesticides
<input type="checkbox"/>	c. Mercury containing equipment
<input type="checkbox"/>	d. Lamps
<input type="checkbox"/>	e. Other (specify) _____
<input type="checkbox"/>	f. Other (specify) _____
<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

**C. Used Oil Activities**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Used Oil Transporter—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Processor
<input type="checkbox"/>	b. Re-refiner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Off-Specification Used Oil Burner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Used Oil Fuel Marketer—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications



**D. Pharmaceutical Activities**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Withdrawing from operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is no longer an LQG or SQG.

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

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Opting into or currently operating under 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	B. Withdrawing from 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories.

**13. Episodic Generation**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator?
--	---

**14. LQG Consolidation of VSQG Hazardous Waste**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQGs hazardous waste.
--	--

**15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)**

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/>	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
<input type="checkbox"/>	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

**16. Notification of Hazardous Secondary Material (HSM) Activity**☐ Y ☒ N

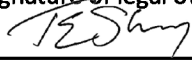
Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

**17. Electronic Manifest Broker**☐ Y ☒ N

Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

**18. Comments** (include item number for each comment)

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

Signature of legal owner, operator or authorized representative 	Date (mm/dd/yyyy) 06/21/22
Printed Name (First, Middle Initial Last) <b>TOM SELLENY</b>	Title <b>PLANT MANAGER</b>
Email <b>TSELLENY@PPG.COM</b>	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

## United States Environmental Protection Agency

## HAZARDOUS WASTE PERMIT PART A FORM



## 1. Facility Permit Contact

First Name	<b>HADLEY</b>	MI	Last Name	<b>STAMM</b>
Title	<b>SENIOR REMEDIATION PROJECT MANAGER</b>			
Email	<b>Hadley.stamm@ppg.com</b>			
Phone	<b>(440) 724-0358</b>	Ext	Fax	

## 2. Facility Permit Contact Mailing Address

Street Address	<b>4829 FAIRLAND ROAD</b>		
City, Town, or Village	<b>BARBERTON</b>		
State	<b>OH</b>	Country	<b>USA</b>
Zip Code	<b>44203</b>		

## 3. Facility Existence Date (mm/dd/yyyy)

<b>4/1/1984</b>
-----------------

## 4. Other Environmental Permits

A. Permit Type	B. Permit Number												C. Description
<b>R</b>	<b>0</b>	<b>2</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>3</b>					<b>OHIO EPA RCRA PERMIT</b>
<b>N</b>	<b>O</b>	<b>H</b>	<b>R</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>				<b>NPDES FOR PPG GENERAL, STORMWTR</b>
<b>N</b>	<b>3</b>	<b>I</b>	<b>I</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>9</b>	<b>0</b>					<b>NPDES FOR LIME LAKE #1</b>
<b>N</b>	<b>3</b>	<b>I</b>	<b>I</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>9</b>					<b>NPDES FOR LIME LAKE #5 AND #6</b>
<b>P</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>9</b>	<b>4</b>	<b>4</b>						<b>OHIO EPA TITLE V PERMIT (TESLIN)</b>
<b>P</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>9</b>						<b>OHIO EPA TITLE V PERMIT (NORTH)</b>
<b>P</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>2</b>						<b>OHIO EPA TITLE V PERMIT (SOUTH)</b>

## 5. Nature of Business

<b>A PRODUCER OF INDUSTRIAL AND COMMERCIAL CHEMICALS, INCLUDING SILICA PRODUCTS, SPECIALTY PLASTIC RESINS, POROUS PLASTIC FILM AND SHEET, AND 32 PERCENT HYDROCHLORIC ACID, ALSO PRODUCER OR ORGANIC LIGHT EMITTING DIODES (OLED'S).</b>
--

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity		C. Process Total Number of Units	D. Unit Name
					(1) Amount	(2) Unit of Measure		
N	A							

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1) )

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes											
								(1) Process Codes								(2) Process Description (if code is not entered in 7.D1))			
N	A																		

8. Map

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

9. Facility Drawing

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

10. Photographs

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

11. Comments

NO ACTIVE HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL UNITS ONSITE. ALL RELEVANT MAPS, DRAWINGS, AND/OR PHOTOGRAPHS ARE PROVIDED IN CORRETIVE ACTIONS SECTION OF APPLICATION (SECTION J).



## **Section B: FACILITY DESCRIPTION**

This section presents a description of the facility and is being provided pursuant to the general Part B permitting requirements specified in 40 CFR Part 270 Subpart B, 40 CFR Part 264 Subpart B, and OAC 3745-50-44.

### **B-1 GENERAL DESCRIPTION**

*[OAC 3745-50-44(A)(1)]*

PPG Industries, Inc. (PPG) owns and operates a commercial chemical production facility located within the cities of Barberton and Norton, Ohio. Chemical production at the facility began in 1899 with the manufacture of synthetic soda ash. PPG currently manufactures chloroformates, CR-39®, CR-39® associated products, OLED, porous film, and silica products and operates a development center at the Barberton facility.

The street address and identification numbers of the PPG Barberton facility are:

PPG Industries, Inc.  
4829 Fairland Road  
Norton, Ohio 44203  
Ohio EPA Permit No. 02-77-0453  
EPA ID No. OHD 004 198 917

All correspondence should be directed to the following facility contact:

Hadley Stamm  
Senior Remediation Project Manager  
Environmental, Health and Safety  
PPG Industries, Inc.  
4829 Fairland Road  
Barberton, Ohio 44203  
(440) 742-0358  
Hadley.stamm@ppg.com

The PPG Barberton facility consists of approximately 2,500 acres of land in the Barberton-Norton area. Approximately 300 acres are currently used for production activities. The facility is situated on the eastern end of Hudson Run Reservoir (also referred to as Columbia Lake), which divides the facility into two distinct areas, the North Plant and the South Plant. The main entrance of the facility is located on Fairland Road near its intersection with Hudson Run Road.

One hazardous waste management unit, referred to as the Hazardous Waste Storage Building (HWSB), was operated at the Barberton facility. The HWSB was located in the eastern portion of the South Plant. PPG has ceased operation of the HWSB and has completed a complete closure of the HWSB prior to the expiration of Permit No. 02-77-0453.

Permit No. 02-77-0453 also addresses the site-wide corrective action and ground-water monitoring activities at the Barberton facility. These activities are discussed in Section J of this application.

## **B-2 SITE CHARACTERISTICS**

*[OAC 3745-50-44(A)(10), (11)(c), and OAC 3745-54-18(A)]*

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, information on traffic, seismic conditions, and location of flood plains is not required.

## **B-3 CERTAIN WASTE PLACEMENT PROHIBITIONS**

*[OAC 3745-54-18(C)]*

The PPG Barberton facility does not place any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave.

## **B-4 TOPOGRAPHIC MAP**

*[OAC 3745-50-44(A)(19)]*

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements for a topographic map in OAC 3745-50-44(A)(19) do not apply.

## **Section C: WASTE CHARACTERISTICS**

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR § 264.13 and OAC 3745-54-13 do not apply.

### **C-1 CHEMICAL AND PHYSICAL ANALYSES**

*[OAC 3745-50-44(A)(2) and 3745-54-13]*

With the closure of the HWSB, this section is not applicable.

### **C-2 WASTE ANALYSIS PLAN**

*[OAC 3745-50-44(A)(3) and 3745-54-13(A), (B), and (C)]*

With the closure of the HWSB, this section is not applicable.

### **C-3 WASTE ANALYSIS PERTAINING TO LAND DISPOSAL RESTRICTIONS**

*[OAC 3745-270]*

With the closure of the HWSB, this section is not applicable.

## Section D: PROCESS INFORMATION

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR Part 264 Subparts I through O, 40 CFR Part 266 Subpart H, OAC 3745-55-70 through 99, and OAC 3745-56, 57, 67, 68, and 69 do not apply.

### D-1 CONTAINERS

*[OAC 3745-55-70 through 3745-55-78]*

With the closure of the HWSB, PPG does not operate any permitted container storage areas at the Barberton facility.

### D-2 STORAGE TANKS

*[OAC 3745-55-90 through 3745-55-99]*

PPG does not operate any permitted hazardous waste storage tanks.

### D-3 CONTAINMENT BUILDINGS

*[OAC 3745-205-100 through 3745-205-102]*

PPG does not operate any permitted hazardous waste containment buildings.

### D-4 SURFACE IMPOUNDMENTS

*[OAC 3745-56-20 through 3745-56-31]*

PPG does not operate any permitted hazardous waste surface impoundments.

### D-5 WASTE PILES

*[OAC 3745-56-50 through 3745-56-59]*

PPG does not operate any permitted hazardous waste piles.

### D-6 LAND TREATMENT UNITS

*[OAC 3745-56-70 through 3745-56-83]*

PPG does not operate any permitted hazardous waste land treatment units.

### D-7 LANDFILLS

*[OAC 3745-57-02 through 3745-57-17]*

PPG does not operate any permitted hazardous waste landfills.

## **D-8 INCINERATORS**

*[OAC 3745-57-40 through 3745-57-51]*

PPG does not operate any permitted hazardous waste incinerators.

## **D-9 MISCELLANEOUS UNITS**

*[OAC 3745-57-90 through 3745-57-93]*

PPG does not operate any permitted miscellaneous hazardous waste treatment units.

## **D-10 BOILERS AND INDUSTRIAL FURNACES**

*[OAC 3745-266-100 through 3745-266-112]*

PPG does not operate any permitted hazardous waste boilers and industrial furnaces.



## **Section E: GROUNDWATER MONITORING**

*[OAC 3745-50-44(B)]*

The permit renewal application does not include any permitted surface impoundments, waste piles, land treatment units, or landfills. Therefore, this section is not applicable.

## **Section F: PROCEDURES TO PREVENT HAZARDS**

With the closure of the HWSB, no portion of the PPG Barberton facility has active hazardous waste management. Therefore, the requirements of 40 CFR § 264.14, 15, and 17 and OAC 3745-54-14, 15, and 17 do not apply.

### **F-1 SECURITY**

*[OAC 3745-54-14]*

With the closure of the HWSB, this section is not applicable.

### **F-2 INSPECTION SCHEDULES**

*[OAC 3745-54-15]*

With the closure of the HWSB, this section is not applicable.

### **F-3 EXEMPTION FROM OR DOCUMENTATION OF PREPAREDNESS & PREVENTION REQUIREMENTS**

*[OAC 3745-50-44(A)(6), 3745-54-30 to 3745-54-37]*

With the closure of the HWSB, this section is not applicable.

### **F-4 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT**

*[OAC 3745-50-44(A)(8)]*

With the closure of the HWSB, this section is not applicable.

### **F-5 PREVENTION OF REACTION OF IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE**

*[OAC 3745-54-17]*

With the closure of the HWSB, this section is not applicable.

## Section G: RCRA CONTINGENCY PLAN

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR Part 264 Subpart D and OAC 3745-54-50 through 56 do not apply.

### G-1 GENERAL

*[OAC 3745-54-18(B) and OAC 3745-54-52]*

With the closure of the HWSB, this section is not applicable.

### G-2 EMERGENCY COORDINATORS

*[OAC 3745-54-5(D), 3745-54-55]*

With the closure of the HWSB, this section is not applicable.

### G-3 IMPLEMENTATION

*[OAC 3745-54-52(A), 3745-54-51]*

With the closure of the HWSB, this section is not applicable.

### G-4 EMERGENCY RESPONSE PROCEDURES

*[OAC 3745-54-56]*

With the closure of the HWSB, this section is not applicable.

### G-5 EMERGENCY EQUIPMENT

*[OAC 3745-54-52(E)]*

With the closure of the HWSB, this section is not applicable.

### G-6 COORDINATION AGREEMENTS

*[OAC 3745-54-52(C), 3745-54-37]*

With the closure of the HWSB, this section is not applicable.

### G-7 EVACUATION PLAN

*[OAC 3745-54-52(F)]*

With the closure of the HWSB, this section is not applicable.

### G-8 REQUIRED REPORTS

*[OAC 3745-54-56(I)]*

With the closure of the HWSB, this section is not applicable.

## **G-9 COPIES OF THE CONTINGENCY PLAN**

*[OAC 3745-54-53]*

With the closure of the HWSB, this section is not applicable.

## **G-10 AMENDMENT OF THE CONTINGENCY PLAN**

*[OAC 3745-54-54]*

With the closure of the HWSB, this section is not applicable.

## **Section H: PERSONNEL TRAINING**

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR § 264.16 and OAC 3745-54-16 do not apply.

### **H-1 TRAINING PROGRAM**

*[OAC 3745-54-16]*

With the closure of the HWSB, this section is not applicable.

### **H-2 IMPLEMENTATION OF TRAINING PROGRAM**

*[OAC 3745-54-16(B)]*

With the closure of the HWSB, this section is not applicable.

### **H-3 TRAINING FREQUENCY**

*[OAC 3745-54-16(C)]*

With the closure of the HWSB, this section is not applicable.

### **H-4 TRAINING RECORDS AND DOCUMENTS**

*[OAC 3745-54-16(D) and (E)]*

With the closure of the HWSB, this section is not applicable.



## **Section I: CLOSURE**

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR Part 264 Subpart G and OAC 3745-55 do not apply.

PPG has ceased operation of the HWSB and PPG completed RCRA closure prior to the expiration of Permit No. 02-77-0453. A copy of the closure certification and Ohio Environmental Protection Agency approval is included as Attachment I of this application.

### **I-1 CLOSURE PLAN**

*[OAC 3745-55-12]*

With the closure of the HWSB, this section is not applicable.

### **I-2 POST-CLOSURE PLANS**

*[OAC 3745-55-18]*

With the closure of the HWSB, this section is not applicable.

### **I-3 NOTICES REQUIRED FOR DISPOSAL FACILITIES**

*[OAC 3745-55-19]*

With the closure of the HWSB, this section is not applicable.

### **I-4 CLOSURE COST ESTIMATE**

*[OAC 3745-55-42]*

With the closure of the HWSB, this section is not applicable.

### **I-5 FINANCIAL ASSURANCE FOR CLOSURE**

*[OAC 3745-55-43]*

With the closure of the HWSB, this section is not applicable.

### **I-6 POST-CLOSURE COST ESTIMATE**

*[OAC 3745-55-44]*

When closing of the HWSB, post-closure activities were not required.

### **I-7 FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE CARE**

*[OAC 3745-55-45]*

When closing of the HWSB, post-closure activities were not required.

## **I-8        LIABILITY REQUIREMENTS**

*[OAC 3745-55-47]*

With the closure of the HWSB, this section is not applicable.

## **I-9        USE OF STATE REQUIRED MECHANISMS**

With the closure of the HWSB, this section is not applicable.

**ATTACHMENT I:  
HAZARDOUS WASTE STORAGE BUILDING CLOSURE  
CERTIFICATION**



Mike DeWine, Governor  
Jon Husted, Lt. Governor  
Laurie A. Stevenson, Director

August 20, 2020

**TRANSMITTED ELECTRONICALLY**

Mr. Brian Satterfield  
Manager, EHS  
PPG Industries  
4829 Fairland Rd.  
Barberton, OH 44203

RE: PPG Industries Inc  
Permit - Intermediate  
Correspondence  
General Correspondence  
RCRA C – Hazardous Waste  
Summit  
OHD004198917

**Subject: Final Closure Letter  
REMOVAL  
PPG Industries, Inc. OHD004198917**

Dear Mr. Satterfield:

On September 24, 2010, Ohio EPA approved PPG Industries, Inc.'s (PPG) closure plan for the Hazardous Waste Storage Building (HWSB) as part of the facility's final hazardous waste renewal permit. The facility is located at 4829 Fairland Road, Barberton, OH 44203.

On July 20, 2020, the director received final closure certification documents from Mr. William Golla, Senior Project Manager, Arcadis, for PPG. PPG and Mr. Golla have certified that the HWSB has been closed according to the specifications in the approved closure plan. The type of closure was an unrestricted closure by removal, demonstration of successful decontamination to below health-based standards.

On July 28, 2020, in order to verify PPG's closure activities, Sylvia Chinn-Levy from Ohio EPA's Northeast District Office used photographic evidence in lieu of conducting a final inspection of the HWSB. This approach was necessary due to Ohio EPA's current policy limiting site visits during the COVID-19 pandemic. Ms. Chinn-Levy also reviewed documents pertaining to the closure of the HWSB and determined that the activities proposed in *Section I – Closure Plan* of PPG's permit were conducted adequately.

Based on this document review, Ohio EPA has determined that PPG has closed the HWSB according to the approved closure plan and the substantive requirements of Ohio Administrative Code (OAC) rules 3745-55-11 through 3745-55-15. **PPG will need to submit a Class 1A permit modification to remove the HWSB from their hazardous waste permit.**

MR. SATTERFIELD  
PPG INDUSTRIES, INC.  
AUGUST 20, 2020  
PAGE 2 OF 2

The facility's compliance with closure obligations under Ohio's hazardous waste laws does not discharge PPG's obligation to investigate and possibly clean up contamination from releases of hazardous waste or hazardous constituents at the facility, regardless of when the waste was placed in the unit. This requirement is known as RCRA Corrective Action.

Because PPG has completed final closure at the facility, PPG is no longer subject to the financial assurance requirements for closure or closure liability coverage. The director will issue a separate letter releasing the financial assurance mechanism. Any financial assurance obligations for the ongoing Corrective Action remain in effect.

As a precautionary response to COVID-19, Ohio EPA is currently operating with most staff working remotely. During this time, we will not be issuing hard-copy mail. This letter is an official response from Ohio EPA that will be maintained as a public record.

If you have any questions concerning the closure process or the status of the facility, please contact Sylvia Chinn-Levy by phone at (330) 963-1274 or via email at [Sylvia.Chinn-Levy@epa.ohio.gov](mailto:Sylvia.Chinn-Levy@epa.ohio.gov).

Sincerely,

*Natalie Oryshkewych*

Natalie Oryshkewych  
Manager, Northeast District Office  
Division of Environmental Response and Revitalization

NO/sc

ec: Sylvia Chinn-Levy, Ohio EPA, DERR, NEDO  
Atiur Rahman, Ohio EPA, DERR, NEDO  
John Palmer, Ohio EPA, DERR, NEDO  
Michelle Tarka, Ohio EPA, DERR, NEDO  
Nyall McKenna, Ohio EPA, DERR, NEDO  
Erik Hagen, Manager ERAS, Ohio EPA, DERR, CO  
Halee Smith, Ohio EPA, DERR, CO  
Brad Mitchell, Ohio EPA, DERR, CO  
Melissa Cheung, Ohio EPA, DERR, CO  
Bill Golla, Arcadis  
Jae Lee, U.S. EPA  
RCRAInfo Data Entry





PPG Industries, Inc.  
4829 Fairland Road  
Barberton, Ohio 44203  
Telephone (330) 825-0831  
Fax (330) 825-8492

PPG Barberton Facility  
Specialty Chemicals Division

**PPG INDUSTRIES, INC.  
BARBERTON PLANT  
HAZARDOUS WASTE STORAGE BUILDING CLOSURE CERTIFICATION**

**July 20, 2020**

Ohio Division of Environmental Response & Revitalization – Hazardous Waste  
2110 East Aurora Road  
Twinsburg, OH 44087-1924

RE: Closure Certification of Hazardous Waste Storage Building

To whom it may concern;

I, Tom Selleny, as the owner/operator of the HWSB at the PPG Barberton facility, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A handwritten signature in black ink, appearing to read 'TSelleny', is written over a horizontal line.

Thomas E. Selleny  
Plant Manager, PPG Barberton

## **Section J:      CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS**

Attachment J provides information for the solid waste management units (SWMUs) located at the PPG Barberton facility as required by OAC 3745-50-44(D).

**ATTACHMENT J:**  
**CORRECTIVE ACTIONS DOCUMENTATION**



## SECTION J.

### CORRECTIVE ACTION REQUIREMENTS

#### J-1 INTRODUCTION AND BACKGROUND

##### J-1a Overview of Current Status

Corrective action activities at the Facility date back nearly 40 years and significant work has occurred over that period of time. As described in Section J-1b below, early corrective action under U.S. EPA oversight proceeded under a 1991 *Administrative Order on Consent (1991 Order)* and then a 2001 *Performance Based Corrective Action Agreement (PBA Agreement)*. When PPG's initial Ohio Hazardous Waste Facility Installation and Operation Permit for PPG's hazardous waste storage building was renewed on September 24, 2010 (2010 Renewal Permit), continuation of the corrective action activities at the Facility was incorporated with the addition of Module E (Corrective Action Requirements) and Module Z (Integrated Ground Water Monitoring). Thus, as of September 24, 2010, the legal mechanism for PPG's corrective action activities shifted from the *PBA* to the 2010 Renewal Permit, and the lead agency shifted from U.S. EPA to Ohio EPA.

This renewal application identifies the following remaining or ongoing corrective action obligations at the Facility:

- two Interim Measures (IMs)
  - IM-II (Leachate Collection and Treatment)
  - IM-III (Public Access Controls)
- two final remedies not yet fully implemented
  - Lime Lake 2
  - Recently identified seeps from Lime Lake 6 to surface water
- site-wide groundwater monitoring
- various inspection, operating and/or maintenance requirements
- development of an Environmental Covenant
- financial assurance

An overview and the status of Media Focus Areas identified under the *PBA Agreement*, as carried forward (and in some cases grouped together) in the 2010 Renewal Permit, are presented in Section J-2. The two active IMs are discussed in Section J-3 below. Descriptions, remedial goals, completed activities, status, ongoing and future activities, governing documents and deliverables for these Media Focus Areas are identified in Section J-4, including details regarding the two final remedies not yet fully implemented.

Site-wide groundwater monitoring is discussed in Section J-5. The Environmental Covenant and financial assurance are discussed in Sections J-6 and J-7.

## **J-1b Background**

PPG and U.S. EPA entered into an *Administrative Order on Consent (Docket No. V-W-91-R-05)* on April 5, 1991 (*1991 Order*). The *1991 Order* scope of work included seven Interim Measures (IMs), a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) and a Corrective Measures Study (CMS). Ohio EPA participated in the review of PPG's implementation of the *1991 Order*, which included commenting on the IMs, RFI and CMS, as well as other submittals. The *Final Revised RCRA Facility Investigation Report*, submitted April 1996 and revised February 1997, was approved by U.S. EPA on May 19, 1997 (*RFI Report*). PPG also conducted site-specific human health and ecological risk assessments (*Human Health Risk Assessment Report* dated August 25, 1997, and *Sitewide Surface Water Preliminary Ecological Risk Assessment Report* dated August 15, 1997), which were used to assess the data collected during the RFI and to develop the CMS. The *Draft Corrective Measures Study - Description of Current Situation (Draft CMS Report)* was submitted to U.S. EPA on September 19, 1997, outlining the disposition of all 110 Solid Waste Management Units (SWMUs) and four (4) Areas of Concern (AOCs) identified at the Facility. All four AOCs and 103 of the 110 SWMUs were screened out during a pre-investigation evaluation, identified as requiring no further action based on the RCRA Facility Investigation (RFI) and/or completed voluntary measures, subsumed within one of the identified source areas, or addressed as part of the proposed site-wide soils focus area. The *Draft CMS Report* concluded that the 7 remaining SWMUs were ongoing sources due to historical operations that would be addressed through corrective measures: SWMUs 100-105 (Lime Lakes 1-6) and SWMU 107 (Contractor's Landfill). Further details are contained in the *Draft CMS Report*.

The *Draft CMS Report* was never formally approved. Instead, U.S. EPA departed from the traditional corrective action administrative process and authorized PPG to proceed using 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 measures. PPG and U.S. EPA entered into the *Performance Based Corrective Action Agreement (PBA Agreement)* in August 2001. Ohio EPA provided a letter of support for the *PBA Agreement*.

Under the *PBA Agreement*, PPG prepared and submitted the *Media Focus Document (MFD)*, dated July 2007, outlining the various WMUs and other areas identified for corrective action. The *MFD* summarized the goals of remedial action as further elaborated

in the *Draft CMS Report*, identified the specific performance measurements used to evaluate compliance with the goals, and summarized relevant project milestones. Several remedies were implemented under the *PBA Agreement*. The *PBA Agreement* has since been terminated, following issuance of the 2010 Renewal Permit.

Additionally, during this same time period, progress at the Facility was measured against the two nationwide environmental indicators identified as part of U.S. EPA's RCRA reforms developed in response to the Government Performance and Results Act of 1993. Indicator CA-725 was established to determine if exposures to human health are currently under control. PPG achieved a "YE" (meaning YES – human health exposures are currently under control) determination from U.S. EPA on December 20, 2001. Indicator CA-750 was established to determine if the migration of impacted groundwater is currently under control. PPG achieved a "YE" determination from U.S. EPA on January 22, 2007 (meaning YES – groundwater migration is currently under control).

During the development of the 2010 Renewal Permit, it was (and remains) critical to PPG that the 40-year history of corrective action efforts be fully recognized and that the "performance-based approach" be retained. Both Ohio EPA staff and PPG technical support invested significant time in drafting permit language reflective of the extensive amount of work undertaken and previous understandings reached. All parties recognized the unique path of PPG's corrective action program, which did not follow the more traditional corrective action process. The 2010 Renewal Permit essentially picked up where the *PBA Agreement* left off, continuing the framework laid out in the *PBA Agreement* and the resulting *MFD*. PPG has continued to work closely with Ohio EPA in a cooperative and flexible manner, which has facilitated the completion of substantial work at the Facility over the last 10 years.

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## J-2 MEDIA FOCUS AREAS (WASTE MANAGEMENT UNITS)

A major tool created to guide the performance-based approach to the corrective action activities at the Facility was the *MFD*, which grouped waste management units (WMUs) into several primary media focus areas. A topographic map of PPG's property is provided as Figure J-1 (Site Layout); a map showing the locations of the current Media Focus Areas is provided as Figure J-2 (Media Focus Areas). The *Draft CMS Report* formed the basis for the selected areas presented in the *MFD*. The *MFD*, used as a project planning tool, evolved as corrective action data gathering, planning and corrective measure implementation proceeded. This framework was continued in the 2010 Renewal Permit, with three progress groupings:

Category 1: Remedy Complete / No Further Action;

Category 2: Remedy Construction with Long-Term Operation and Maintenance; and

Category 3: Ongoing Remedy Evaluation and/or Implementation.

For this renewal application, these three progress categories are retained with updates as appropriate based on the extensive work undertaken over the last decade.

A list of the Media Focus Areas, the category as of issuance of the 2010 Renewal Permit, and the updated category is provided in Table J-1 below. Four areas are being re-categorized from the 2010 Renewal Permit. All work required in the 2010 Renewal Permit for **Lower Hudson Run Sediments, Impounding Reservoir, and Tuscarawas River / Wolf Creek** has been completed. Because no further action under the Permit is required for these areas, other than access controls that apply to Impounding Reservoir, these three (3) media focus areas are re-categorized as Category 1. The **Lime Lake 1** remedy has been fully implemented and is reclassified as Category 2 due to the continued IM-II and performance monitoring activities. Only **Lime Lake 2** and **Lime Lake 6** are classified as Category 3, for which remedy evaluation and/or implementation is still in progress. Lime Lake 6 remains in Category 3 even though the reclamation activities are completed due to current activities underway to address seeps. **Main Plant Groundwater**, which is part of **Sitewide Groundwater** and is in Category 2, includes ongoing operation and maintenance activities associated with the potential for vapor intrusion. Vapor intrusion remedies were put into place subsequent to issuance of the 2010 Renewal Permit. Further discussion of Media Focus Areas is provided in Section J-4.

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<b>Table J-1 – Progress Categories for Media Focus Areas 4/30/2022</b>			
<b>Section Cross- Ref.</b>	<b>Media Focus Area</b>	<b>Progress Category in 2010</b>	<b>Updated Progress Category in 2020</b>
J-4a	Lower Hudson Run Surface Water	2	2
J-4b	Hudson Run Reservoir Sediment	2	2
J-4c	Contractor's Landfill	2	2
J-4d	Main Plant Soils	2	2
	Sand Quarry WMUs 83-84, 87-89		
	WMUs 9, 61, 66, 81, 90		
J-4e	Sitewide Groundwater	2	2
	Main Plant Groundwater		
	Lime Lakes 3-6 * (Southern Facility Groundwater)		
J-4f	Tuscarawas River Dredge Spoils	2	2
J-4g	Lower Hudson Run Sediments	3	1
J-4h	Tuscarawas River and Wolf Creek	3	1
J-4i	Impounding Reservoir **	3	1
J-4j	Lime Lake 1	3	2
J-4k	Lime Lake 2	3	3
J-4l	Lime Lake 6	3	3
J-4m	West Plant WMU 92	1	1
J-4n	Former Ohio Brass Settling Ponds WMU 110	1	1
J-4o	North Spoils Area WMU 96	1	1
J-4p	South Spoils Area WMU 97	1	1

\*As with Lime Lakes 3-5, groundwater associated with Lime Lake 6 is now considered part of Sitewide Groundwater because the surface reclamation remedy has been completed. Lime Lake 6 remains in Category 3 due to an ongoing remedy to address seeps.

\*\* Impounding Reservoir remains subject to IM-III (Access Controls).

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### **J-3 INTERIM MEASURES**

#### **J-3a Completed Interim Measures**

Seven (7) specific IMs were initially identified at the Facility by PPG and U.S. EPA. Of these, five (5) were completed prior to issuance of the 2010 Renewal Permit:

- IM-I: 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 4.
- IM-IV: Investigate previously plugged and abandoned brine extraction wells. Four (4) wells met criteria for re-plugging, which was done per Ohio Department of Natural Resources guidance.
- IM-V: Evaluate risks to human health and the environment, identify sources and transport mechanisms, and identify appropriate remedial actions for impacted sediments in affected adjacent waterways.
- IM-VI: Remove cement kiln dust from WMU 94
- IM-VII: Remove PCB contaminated materials in North Spoils Area.

#### **J-3b Ongoing Interim Measures**

Of the seven (7) initial IMs, only two (2) were ongoing when the 2010 Renewal Permit was issued, and continue under this second renewal:

- IM-II: Install and operate a leachate collection system for Lime Lake 1, Lime Lake 2, Sand Quarry and Contractor's Landfill, and a waste water treatment plant to treat the collected leachate.
- IM-III: Install and maintain fencing and security as needed to control and restrict public access (i.e. access controls).

IM-II was a requirement of the original *1991 Order* to address seeps from Lime Lake 1, Lime Lake 2, the western high wall of the South Plant Former Sand Quarry, and the French drain system at Contractor's Landfill. IM-II is currently implemented in accordance with the *IM-II Leachate Collection and Treatment System Operation & Maintenance Plan* dated September 13, 2011.

IM-III was also a requirement of the original *1991 Order* and the access controls are currently implemented in accordance with the *Standard Operation Procedures (SOP) for IM-III* dated March 17, 2004. Fencing was initially installed around Lime Lakes 1 through 6 and Contractor's Landfill in order to further deter public access to these areas. Over the years, additional fencing was installed or modified around Hudson Run Reservoir, along Lower Hudson Run, around two dredge spoil areas, between Contractor's Landfill and Lime Lake 2, and around the Impounding Reservoir. All of the foregoing access controls

were added to the fencing inspection program. Inspections are performed annually, with a subset inspected seasonally, and the observations (included on an inspection form) and repairs (if any) are documented in the appropriate monthly RCRA progress report submitted to Ohio EPA. Furthermore, the Summit Metro Parks completes quarterly inspections of fencing along the section of their Towpath that is on PPG property. PPG intends to develop a new comprehensive *Access and Erosion Control Work Plan* for Ohio EPA approval as a final remedy to replace IM-III anticipated to be submitted in the first quarter of 2023.

## **J-4 CORRECTIVE ACTION ACTIVITIES**

All currently operative plans, previously approved by Ohio EPA, are provided in Table J-2. These approved plans are incorporated by reference in this application. The approved plans, and future revisions by PPG once approved by Ohio EPA, will be incorporated by reference into the then-effective permit.

Key activities since issuance of the 2010 Renewal Permit are presented below together with descriptions and remedial goals. Where the 2010 Permit described both “remedial goals” and “performance standards” for a particular focus area, these have been combined in this application. The present status, including ongoing activities to be covered under the renewal permit, are also provided below. Further background information can be found in the *RFI Report*, *Draft CMS Report* and *MFD*, as well as other key documents identified in Table J-2.

### **J-4a Lower Hudson Run Surface Water**

**DESCRIPTION:** Lower Hudson Run is depicted in Figure J-3 and is a channelized stream running approximately 2,275 feet from the outlet of Hudson Run Reservoir to Wolf Creek, between Lime Lake 1 and Lime Lake 2. There are two low head dams in the channel. Constituents associated with Solvay process wastes found in this stream (e.g. chlorides), as described in the *RFI Report*, were attributed to impacted groundwater infiltrating from Lime Lakes 1 and 2.

#### **REMEDIAL GOAL:**

- Meet applicable Ohio ambient water quality standards for Constituents of Concern (COCs).

**COMPLETED ACTIVITIES:** To prevent a source of constituents of concern from entering Lower Hudson Run from upstream, a subsurface cap of sediments in the Hudson Run Reservoir was installed in 2003 (see Section J-4b). In November 2006, in order to address impacted groundwater infiltrating Lower Hudson Run from Lime Lakes 1 and 2, PPG separated surface water from the impacted groundwater by installing a low head dam (similar to the Low Head Impoundment installed in 1997 near the mouth of this waterway). This raised the surface water elevation above the groundwater potentiometric surface in designated areas of the stream. In August 2008, hexachlorobenzene was detected in surface water above Water Quality Criteria. The source was believed most likely to be sediments in Lower Hudson Run. Lower Hudson Run Sediment (a separate Media Focus Area, see Section J-4g) was evaluated under the terms of the 2010 Renewal Permit. Ultimately, it was determined that sediment removal was not required. A plan for inspecting and maintaining the low head dams was developed and approved by Ohio EPA

in 2011 and continues to be implemented. IM-II actively diverts leachate (from the Lime Lakes) from entering the waterway (see Section J-3b).

STATUS: Category 2 (remedy completed; long-term O&M and performance monitoring)

ONGOING AND FUTURE ACTIVITIES: Engineering controls installed to contain potential sources of impacts to Lower Hudson Run as described above require ongoing operation and maintenance and performance monitoring to ensure performance standards continue to be met. The *Lower Hudson Run Low Head Dams Inspection & Maintenance Plan* (1/31/11) requires annual inspections for erosion and scouring (and within two weeks of a 100-year storm event) and semi-annual inspections for debris removal to ensure the low head dams are in good repair and free flowing. The storm event is determined by a rain gauge on Lime Lake 1 and/or the data available from the Akron-Canton Airport. IM-III access controls implemented along Lower Hudson Run are addressed in Section J-3b above.

GOVERNING DOCUMENTS: *Lower Hudson Run Low Head Dams Inspection & Maintenance Plan* dated January 31, 2011, or subsequent revisions by PPG and approved by Ohio EPA. See Section J-3b regarding IM-III access controls.

DELIVERABLES: Two low head dam inspection reports are submitted each year with the corresponding Monthly RCRA Progress Report. One report is submitted following a semi-annual debris removal inspection in early spring. The second report is submitted following the annual erosion/scouring inspection and semi-annual debris removal inspection in late summer (or after a major storm event as defined above). See Section J-3b regarding IM-III access controls.

#### **J-4b Hudson Run Reservoir Sediment**

**DESCRIPTION:** The Hudson Run Reservoir is depicted in Figure J-4 and is a four- to seven-foot deep reservoir covering approximately 36 acres. Hudson Run was dammed in 1913 to provide cooling water. 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. At one time, this Media Focus Area was considered part of Lower Hudson Run Sediments. However, by issuance of the 2010 Revised Permit, Hudson Run Reservoir Sediment was and continues to be identified separately. Historical Facility outfalls included outfalls to the Hudson Run Reservoir, which contributes to sediment impacts. Sediment transport modeling was performed to evaluate the mobility of sediment, which may contain hexachlorobenzene (HCB) or other sorbed constituents. Through this modeling, it was determined that Hudson Run Reservoir was essentially a sediment trap. A sediment cap was installed to further reduce sediment transport and exposure.

#### **REMEDIAL GOALS:**

- Eliminate, to the extent necessary, potential human and ecological exposure to impacted sediment.
- Meet applicable Ohio ambient water quality standards.

**COMPLETED ACTIVITIES:** A sediment cap was installed on seven acres in late fall 2003. The purpose of the in-situ subaqueous capping was to separate clean surface water from impacted sediments. A plan for inspecting and maintaining the constructed sediment cap was developed and approved in 2011 and continues to be implemented.

**STATUS:** Category 2 (remedy completed; long-term O&M and performance monitoring).

**ONGOING AND FUTURE ACTIVITIES:** Engineering Controls installed to contain impacted sediments described above require ongoing inspection and maintenance. The *Hudson Run Reservoir PPG Barberton Facility In-Situ Sediment Cap Inspection & Maintenance Plan* dated February 16, 2011, requires maintenance of access controls, scheduled inspections, maintenance of the sediment cap, and reporting. The in situ cap inspections are completed annually in midsummer and within two weeks of a major storm event or a potential scour event such as a large release of water from Lake Dorothy. A major storm is defined as a 100-year storm event. The storm event will be determined by the rain gauge on Lime Lake 1 and/or data from the Akron-Canton Airport. IM-III access controls at Hudson Run Reservoir are addressed in Section J-3b above.

**GOVERNING DOCUMENTS:** *Hudson Run Reservoir PPG Barberton Facility In Situ Sediment Cap Inspection and Maintenance Plan*, dated February 16, 2011, or subsequent revisions by PPG and approved by Ohio EPA. See Section J-3b regarding IM-III access controls.

**DELIVERABLES:** Annual sediment cap inspection reports are submitted in the corresponding Monthly RCRA Progress Reports. See Section J-3b regarding IM-III access controls.

#### **J-4c Contractor's Landfill**

**DESCRIPTION:** The Contractor's Landfill (CLF) is depicted in Figure J-5 and is a former open-pit clay mine that subsequently served as a disposal site for contractor construction and demolition debris until 1980. The CLF is approximately 11 acres in size, and is located southeast of the South Plant, south of the Sand Quarry, and approximately 1,600 feet west of the Tuscarawas River. Landfill leachate impacted with VOCs percolates downward to an upper groundwater zone, discharges to a lower groundwater zone, and eventually to the regional aquifer. The groundwater in the Main Plant area is known to be impacted with volatile organic compounds from Contractor's Landfill. For some compounds, concentrations have historically exceeded the Maximum Contaminant Limit (MCL) for drinking water.

#### **REMEDIAL GOALS:**

- Isolate to extent practicable sources of chlorinated organic compounds from CLF to Main Plant area groundwater by reduction of leachate production and Monitored Natural Attenuation (MNA) in the regional aquifer.
- Reduce leachate flow.
- Reduce leachate elevations in key piezometers relative to historical baseline elevation data.
- Meet appropriate performance goals in the French drain discharges.
- Meet MCLs or risk-based standards<sup>1</sup> in groundwater.

**COMPLETED ACTIVITIES:** Leachate and groundwater are intercepted by French drains and conveyed to the on-site Waste Water Treatment Plant. A low permeability cover system and an upgradient groundwater diversion system were installed in the summer of 2008 and completed in 2009 in accordance with the *Contractors' Landfill Infiltration Control Performance Measures & Post-Construction Monitoring Plan (CLF Monitoring Plan)* dated April 15, 2008. A plan for the operation and maintenance of the cover system and diversion system was developed and approved in 2011 and continues to be implemented.

**STATUS:** Category 2 (remedy complete; long-term O&M and post-construction monitoring).

**ONGOING AND FUTURE ACTIVITIES:** PPG will continue to implement the *Contractors' Landfill PPG Barberton Facility Infiltration Control Cover System Post-Construction Operation and Maintenance Plan (CLF O&M Plan)*, dated February 9, 2011, and the *CLF Monitoring Plan*, or as may be subsequently revised by PPG and approved by

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<sup>1</sup> With Ohio EPA approval.



Ohio EPA. The required activities under the *CLF O&M Plan* include maintenance of access controls, scheduled inspections, maintenance of the cover of the cap and drainage areas, and reporting. Inspections of the cover system are conducted, at minimum, before and after the winter season, and following a significant storm event (25-year / 24-hour rain event or greater). Access is controlled by fencing and signage; see Section J-3b for IM-III access controls.

The Performance Standards established in the *CLF Monitoring Plan* are as follows: 1) permanent leachate flow reduction, 2) permanent leachate elevation reduction, 3) meet Performance Goals in French drain discharges (MCLs), and 4) meet MCLs or risk-based standards in groundwater. Achieving a leachate elevation of 1049 feet is not a performance standard or goal, but rather a target elevation. The required activities under the *CLF Monitoring Plan* include leachate sampling, groundwater monitoring well sampling (part of the sitewide Integrated Groundwater Monitoring Program, see Sections J-4c and J-5), flow rate monitoring, and leachate elevation monitoring. Performance monitoring information is reported annually to Ohio EPA.

The *CLF Monitoring Plan* indicates meeting the MCL Performance Goals (in leachate as measured inside the manholes) is needed to discontinue the collection and treatment of leachate from MH-1 and MH-2. Although progress has been made, and currently concentrations are well below Ohio surface water criteria, the MCL Performance Goals in the manhole leachate have not been achieved consistently. PPG anticipates submitting to Ohio EPA a work plan to pilot test the continued removal of leachate from MH-1 that would directly discharge to the adjacent South Sediment Trap located in the southeast corner of the CLF.

It is anticipated direct discharge of the leachate will lower the leachate levels further since the French drain will continuously drain, collect and convey water at a steady elevation rather than rely on the cycling of the manhole pump. Little water is recovered in MH-2 since it recovers leachate from a French drain that is downgradient from the MH-1 French drain. The pilot test is also expected to assess separately if any adverse effects are observed related to the cessation of the pumping from MH-2.

PPG will continue implementation of the *CLF O&M Plan* dated February 9, 2011, and the *CLF Monitoring Plan* dated April 15, 2008, and any approved pilot test work plan as described above. In the event of a successful pilot test, the *CLF O&M Plan* and/or *CLF Monitoring Plan* may be revised and implemented upon Ohio EPA approval.

GOVERNING DOCUMENTS: *CLF O&M Plan*, dated February 9, 2011, and *CLF Monitoring Plan*, dated April 15, 2008, or subsequent revisions by PPG and approved by Ohio EPA. See Section J-3b regarding IM-III access controls.

**DELIVERABLES:** The cap inspection reports completed twice annually and following a major storm event, and associated repairs, are submitted in the corresponding Monthly RCRA Progress Reports. These are required through 2040. The *CLF Monitoring Plan* reports are submitted annually until PPG and Ohio EPA agree to cease monitoring. See Section J-3b regarding IM-III access controls.

**J-4d Main Plant Soils** (also including Sand Quarry WMUs 83, 84, 87, 88 and 89, and WMUs 9, 61, 66, 81 and 90)

**DESCRIPTION:** The overall Main Plant Soils area is depicted in Figure J-6 and 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. Impacted soils identified during the RFI are present below the paving and exposures may occur during invasive activities. The Main Plant Soils Media Focus Area includes the locations of several WMUs with respect to which the *Draft CMS Report* concluded separate media focus areas were not necessary. See discussion in Section J-1b (Background).

First, the Main Plant Soils Media Focus Area encompasses the former Sand Quarry footprint totaling approximately 31 acres. Five waste management units were identified in this area: WMUs 83, 84, 87, 88, and 89. The Sand Quarry itself is no longer in use. WMU 83 was the permitted hazardous waste storage building (HWSB), which was closed in 2020 with the approval of Ohio EPA. WMU 84, HWSB Outdoor Container Storage Area, was an outside pad previously used for temporary storage of drummed waste generated during pre-RFI monitoring well installation and investigative activities (all drums were removed prior to the RFI). 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; however, discharges from adjacent facilities have released constituents into environmental media that have migrated to the area impacting shallow groundwater, soil, and surface water in drainage pathways at WMU 87.

Second, the Main Plant Soils Media Focus Area also includes five additional WMUs: Wastewater tanks, floor drains, trenches and sumps in the Multi-Purpose Building (WMU 9 Multi-Purpose Plant Floor Drains and Sumps); Chloroformate Process Area (WMU 61 Chloroformate Sump); CR-39 Process Area (WMU 66 CR-39 Sump and Trench System); the Air Pollution Control system (WMU 81 APC Wastewater Tanks); and the former trichloroethene manufacturing plant (WMU 90 Former TCE Plant). During the RFI, analysis of soils showed evidence of potential constituent release by the materials of the type historically and currently managed in these areas. Prior to issuance of the 2010 Renewal Permit, the various WMUs described above were inspected and repaired as needed to prevent future releases, as reported in the *Draft CMS Report*. The location of these five WMUs have been added to Figure J-6, Main Plant Soils; they are further described in the *Pre-Investigation Evaluation of Corrective Measures Technologies*

*Barberton Facility* report dated February 1992. Any risks associated with potential historic releases to soils at WMUs 9, 61, 66, 81 and 90 are addressed as part of the broader Main Plant Soils Media Focus Area. For that reason, the 2010 Renewal Permit listed all of these WMUs together and PPG continues to address them under the overall Main Plant Soils Media Focus Area.

REMEDIAL GOALS:

- Eliminate the risk to on-site excavation workers engaged in infrequent and short term activity for dermal exposure to hexachlorobenzene (HCB), dioxins (2,3,7,8-Tetrachlorodibenzo-p-dioxin [TCDD]), and other constituents when excavation is required.
- Address historical soil contamination and prevent future releases.

COMPLETED ACTIVITIES: WMUs 9, 61, 66, 81 and 90 were inspected and repaired as needed to prevent future releases. WMU 83, the former hazardous waste storage building, was closed in accordance with a closure plan approved by Ohio EPA. The potential presence of historical soil contamination in the Main Plant area was addressed by following the *On-Site Excavation and SWMU Management Procedure* dated March 27, 2008, during invasive activities to address the potential for exposure to impacted sub-surface soils. Prior to preparing this procedure, PPG issued a *Notification of Work Activities, Blanket Authorization Request* in 2003 which was approved by Ohio EPA and allowed PPG to excavate, fill, grade and conduct building activities under Rule 13 of the Ohio Administrative Code.

STATUS: Category 2 (remedy complete; long-term O&M and Excavation Plan)

ONGOING AND FUTURE ACTIVITIES: PPG will continue implementation of the *On-Site Excavation and SWMU Management Procedure (PPG Excavation Plan)* dated March 27, 2008. IM-III access controls at Contractor's Landfill are addressed in Section J-3b above.

GOVERNING DOCUMENTS: *On-Site Excavation and SWMU Management Procedure*, March 27, 2008, or subsequent revisions by PPG and approved by Ohio EPA.

DELIVERABLES: The *PPG Excavation Plan* requires Ohio EPA notification of certain excavation activities at least five (5) days prior to the work.

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**J-4e Site Wide Groundwater** (including Integrated Ground Water Monitoring Program, Infiltration Controls and Vapor Intrusion Mitigation)

The 2010 Renewal Permit described Site Wide Groundwater as a Media Focus Area that included areas referred to prior to 2010 as Main Plant Groundwater and Southern Facility Groundwater (a/k/a Lime Lakes 3, 4, and 5) as depicted in Figure J-7. Additionally, groundwater associated with Lime Lake 6 is part of Site Wide Groundwater following completion of the reclamation activities at Lime Lake 6 (see Section J-4l). Site Wide Groundwater involves three aspects: the Integrated Ground Water Monitoring Program with groundwater monitoring wells throughout the Facility, Infiltration Controls, and Vapor Intrusion Mitigation. Each of these aspects of Site Wide Groundwater is presented separately below.

**Integrated Ground Water Monitoring Program**

**DESCRIPTION:** In general, the groundwater across the Facility at all depths above the shale confining layer has been affected by various constituents of concern (COCs) including organic chemicals and metals. Groundwater COCs are found at levels unacceptable for potable use and are also a potential source of contamination to surface water. The main COCs in the groundwater include tetrachloroethene, trichloroethylene, cis-1,2-dichloroethylene, vinyl chloride, chloride, dissolved solids, barium, calcium and sodium. Source areas include the Lime Lakes, the production areas (e.g., North and South Plants) and former waste disposal areas (e.g., Contractor's Landfill). See Section J-5 below on the sitewide Integrated Ground Water Monitoring Program for additional information.

**REMEDIAL GOALS:**

- Restore groundwater to meet regulatory standards. PPG will continue to control migration of impacted groundwater (Corrective Action Environmental Indicator Determination 750 - YE).
- Prevent surface water concentrations of various COCs above water quality standards.
- Prevent extraction except for monitoring and remediation.

**COMPLETED ACTIVITIES:**

Monitoring of the natural attenuation of concentrations in groundwater and ensuring that the spatial extent of groundwater concentrations is not expanding occurs on a site-wide basis through the implementation of the *Integrated Ground Water Monitoring Program – Sampling and Analysis Plan* dated December 2013 (IGWMP). See Section J-5. In a report titled *Groundwater Attenuation Enhancement Feasibility Study and Report of Findings* dated March 15, 2011 (later revised on July 16, 2012), PPG submitted an evaluation of



potential biological and chemical enhancements to natural attenuation. This evaluation concluded that enhancement was not needed. Natural attenuation rates and risks are evaluated following each triennial groundwater monitoring event.

A *Monitoring Well Inspection Maintenance, Sealing and Abandonment Plan* was submitted to Ohio EPA in August of 2011 and approved on January 13, 2012. In accordance with the plan, wells have been abandoned from 2011 through 2018. The ninth year of well abandonment was scheduled for 2019 for Lime Lake 2 wells but was postponed until the Lime Lake 2 final remedy work plan was approved by Ohio EPA. The well abandonment was completed in 2021 and Table 1 of the *Monitoring Well Inspection Maintenance, Sealing and Abandonment Plan* has been revised consistent with the well abandonment work completed.

STATUS: Category 2 (long term monitoring).

ONGOING AND FUTURE ACTIVITIES: PPG will continue monitoring of the natural attenuation of constituents in groundwater through implementation of the Integrated Groundwater Monitoring Program, see Section J-5 below. As described in greater detail in Section J-5, monitoring is continuing on a triennial basis.

GOVERNING DOCUMENTS: *Integrated Groundwater Monitoring Program – Sampling and Analysis Plan* dated December 2013, *Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum*, dated December 2013, *Monitoring Well Inspection Maintenance, Sealing and Abandonment Plan* dated August 2011, *Groundwater Monitoring Well Inspection Procedure* dated August 2011 or subsequent revisions by PPG and approved by Ohio EPA.

DELIVERABLES: The IGWMP sampling and reporting occurs every three years and is an independent submittal to the Ohio EPA.

### **Infiltration Controls**

DESCRIPTION: As chlorinated hydrocarbons are known to be present in the Main Plant groundwater, PPG installed infiltration controls to reduce water infiltration as part of a remedial goal for groundwater in the North and South Plants. In 2002, PPG installed 24 new storm drains and paved 6 acres of the North and South Plants to reduce surface water infiltration. Additionally, storm drains were inspected and repaired in 1995 under Interim Measure V.

### **REMEDIAL GOAL:**

- Restore groundwater to meet regulatory standards. PPG will continue to control migration of impacted groundwater (Corrective Action Environmental Indicator Determination 750 - YE).



**COMPLETED ACTIVITIES:** Surface paving, utility repair, and storm water management improvements were implemented in the Main Plant area to reduce vertical infiltration into the subsurface. PPG developed and implemented the *Infiltration Control Improvements Inspection and Maintenance Plan, North and South Plants* dated May 12, 2011, which includes engineering and institutional controls such as maintaining the pavement covering impacted soils.

**STATUS:** Category 2 (long term monitoring).

**ONGOING AND FUTURE ACTIVITIES:** PPG will continue to implement the *Infiltration Control Improvements Inspection and Maintenance Plan, North and South Plants* dated May 12, 2011. The required activities include an inspection of paved areas, storm sewers and downspouts; maintenance as required; and reporting.

**GOVERNING DOCUMENTS:** *Infiltration Control Improvements Inspection and Maintenance Plan, North and South Plants* dated May 12, 2011, or subsequent revisions by PPG and approved by Ohio EPA.

**DELIVERABLES:** The annual infiltration inspection report and associated repairs are submitted in the corresponding Monthly RCRA Progress Reports.

### **Vapor Intrusion**

**DESCRIPTION:** In response to Governor Kasich's mandate in 2016 and at Ohio EPA's request, PPG voluntarily undertook a study of potential vapor intrusion into buildings located at the North Plant and South Plant areas due to the presence of chlorinated hydrocarbons in the Main Plant groundwater. Following the preliminary assessments, evidence of the potential for vapor intrusion into certain specific buildings was identified and PPG agreed to install vapor mitigation systems. The buildings subject to mitigation systems are shown on Figure J-8.

### **REMEDIAL GOAL:**

- Mitigate vapor intrusion into occupied office areas.

**COMPLETED ACTIVITIES:** In 2017 and 2018, PPG installed ten (10) vapor mitigation systems. Additional information is available in the January 2017 *Vapor Mitigation System As-Built / Start-Up Report* and January 2017 *Vapor Mitigation System Operation, Maintenance and Monitoring Plan*. An Addendum was prepared for two mitigation systems, and the *Vapor Mitigation Operation, Maintenance and Monitoring Plan* was updated in May 2018 to include all ten (10) mitigation systems. Changes to the above work plan were proposed by PPG in 2020 and approved by Ohio EPA, leading to an updated plan submitted on March 10, 2021 and approved by Ohio EPA on March 29, 2021.

STATUS: Category 2 (long term monitoring).

ONGOING AND FUTURE ACTIVITIES: PPG will continue to implement the *Vapor Mitigation System Operation, Maintenance and Monitoring Plan* dated May 2018. The vapor intrusion mitigation systems consist of ten (10) sub-slab depressurization (SSD) systems located in six (6) separate buildings. The *Plan* includes descriptions of the start-up and shutdown procedures, system monitoring procedures, equipment information, notification information, sampling schedule and contact information.

GOVERNING DOCUMENTS: *Vapor Mitigation System Operation, Maintenance and Monitoring Plan* dated March 2021.

DELIVERABLES: Operation and maintenance is required for all vapor intrusion sub-slab depressurization systems with annual monitoring. The monitoring results are submitted in the corresponding Monthly RCRA Progress Report.

#### **J-4f Tuscarawas River Dredge Spoils**

**DESCRIPTION:** The Tuscarawas River Dredge Spoils area is depicted on Figure J-9. In the 1965-1966, the Summit County Engineer dredged the Tuscarawas River for flood control and deposited the material on the banks of the river, including several locations on PPG property. Materials consisted of sediments as well as bank materials from the widening and straightening of the River. Some of these materials were subsequently found to contain elevated levels of HCB.

**REMEDIAL GOAL:**

- Eliminate unacceptable risks to human health and the environment due to the presence of constituents (HCB) in the dredge spoils.

**COMPLETED ACTIVITIES:** Fencing was installed in areas where HCB was detected in dredge spoil surface samples at concentrations greater than 100 mg/kg, a standard developed for human contact (dermal, ingestion) in the 1995 report titled *HCB Screening Criteria and Hazard Evaluation* (Revised in 1996). Two areas of the Tuscarawas River bank were armored with riprap to prevent dredge spoils from re-entering the River due to bank erosion. In April 2011, PPG prepared and is implementing the *PPG Tuscarawas River Dredge Spoils Security and River Bank Erosion Control Measures Inspection and Maintenance Plan (Dredge Spoils I&M Plan)* dated April 12, 2011 (approved by Ohio EPA on April 26, 2011) with regard to security, bank erosion and the previous control measures. The *Dredge Spoils I&M Plan* was revised on July 28, 2014. PPG completed a scoping level ecological risk assessment on September 10, 2013 as a letter titled *Tuscarawas River Dredge Spoils Scoping-Level Ecological Risk Assessment* (approved by Ohio EPA on February 13, 2014). A work plan titled *Combined Level II and III Tuscarawas River Dredge Spoils Ecological Risk Assessment Work Plan* was submitted on April 24, 2014 and approved by Ohio EPA on June 23, 2017. A report titled *Combined Level II and III Ecological Risk Assessment Tuscarawas River Dredge Spoils* was submitted to Ohio EPA on January 30, 2018, and comments were received from Ohio EPA in a letter dated November 16, 2018. A letter from PPG titled, *Response to Comments on Ecological Risk Assessment with Supplemental Dredge Spoils Evaluation*, was submitted to Ohio EPA on May 20, 2020, and preliminary comments were received on October 5, 2020 and clarified comments on April 16, 2021. On March 24, 2022, PPG submitted *Clarified Response to October 5, 2020 Correspondence on Combined Levels II and III Ecological Risk Assessment Tuscarawas River Dredge Spoils Report*, PPG Industries, Inc., which concluded that the dredge spoils be eliminated from further consideration for corrective action.

**STATUS:** Category 2 (long term monitoring).

**ONGOING AND FUTURE ACTIVITIES:** Continue implementation of the July 28, 2014 *Tuscarawas River Dredge Spoils Security and River Bank Erosion Control Measures Inspection & Maintenance Plan*. The required activities include access controls, scheduled inspections every five (5) years of the dredge spoils piles, twice annual inspections of the bank stabilization areas and Village of Clinton canoe livery, repairs due to high water conditions and reporting.

**GOVERNING DOCUMENTS:** *Tuscarawas River Dredge Spoils Security and River Bank Erosion Control Measures Inspection and Maintenance Plan*, April 12, 2011 (revised July 28, 2014), or subsequent revisions by PPG and approved by Ohio EPA.

**DELIVERABLES:** The 5-year dredge spoil review and reporting occur every five (5) years and is an independent submittal to the Ohio EPA. The two annual inspection reports are submitted in the corresponding Monthly RCRA Progress Reports.

#### **J-4g Lower Hudson Run Sediments**

**DESCRIPTION:** Sediments in the Lower Hudson Run Channel were found to have been impacted by HCB. At one time, the Lower Hudson Run Channel was identified as a single Media Focus Area. However, in the 2010 Renewal Permit, this was split into two separate areas, one for surface water (see Section J-4a) and one for sediment (this Section). The area of the Lower Hudson Run Sediments coincides with the Lower Hudson Run surface water and therefore is depicted in Figure J-3.

**REMEDIAL GOAL:**

- Eliminate, to the extent necessary, potential human and ecological exposure to impacted sediment.

**COMPLETED ACTIVITIES:** In 2011, PPG prepared a *Lower Hudson Run Focused Sediment Removal Work Plan* for the potential removal and dredging of sediment, focused on the low head impoundment and sediment mounds, which was approved by Ohio EPA on February 8, 2012 and a final version was issued on March 28, 2012. In December 2012, PPG submitted the *Lower Hudson Run Sediment Assessment Report* (revised April 9, 2013). Based on the fact that sediments targeted for removal were no longer present, coupled with the revised ecological risk assessment indicating acceptable risk for the evaluated potential wildlife receptors, Ohio EPA agreed that sediment removal was not necessary, subject to five (5) years of monitoring to confirm. PPG conducted annual monitoring of sediment from May 2013 through May 2017, the results of which are contained in a report titled *Final Summary Report, Lower Hudson Run 2017 Sediment Accumulation Monitoring and Sampling* dated June 21, 2017 and submitted on July 10, 2017 in PPG's June 2017 progress report. The *Final Summary Report* confirmed that sediment removal was not necessary.

**STATUS:** Category 1 (no further action).

**ONGOING AND FUTURE ACTIVITIES:** None. For activities relating to Lower Hudson Run Surface Water, including maintenance of the low head dams, see Section J-4a. These maintenance activities include evaluating sediment accumulation and removing as needed for purposes of maintaining the desired water levels. These activities are not designed to address the presence of COCs impacting sediment, with respect to which no further action is required as described above.

**GOVERNING DOCUMENTS:** None.

**DELIVERABLES:** None.

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#### **J-4h Tuscarawas River and Wolf Creek**

**DESCRIPTION:** The Tuscarawas River is designated a Modified Warm Water Habitat, runs roughly six stream miles through the Facility, and is a major tributary to the Muskingum River, part of the Ohio River watershed. The Tuscarawas River was partially channeled by dredging in the 1960s. Volatile and semi-volatile organics (VOCs and SVOCs), metals and total dissolved solids (TDS) have been found in Tuscarawas River sediments and surface water. Wolf Creek is a tributary of the Tuscarawas River and is also designated a Modified Warm Water Habitat. Approximately the last 1.1 miles of Wolf Creek are adjacent to the Facility. COCs were found in the water column during the RFI. Subsequent investigations in conjunction with a remedial study (phytoremediation pilot) demonstrated that the Wolf Creek surface waters are currently in attainment of chemical water quality criteria. A 1994 Ohio EPA study reported biological impairment of the stream.

The location of the Tuscarawas River and Wolf Creek are depicted on Figure J-9 along with the Tuscarawas River dredge spoils discussed in Section J-4f.

#### **REMEDIAL GOAL:**

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

**COMPLETED ACTIVITIES:** Chemical and biological surveys of the Tuscarawas River were performed in 1994 (*Biological, Sediment and Water Quality Study of the Tuscarawas River, Wolf Creek and Hudson Run Summit and Stark Counties, Ohio July 30, 1994*, Ohio EPA), 2001 (*Exponent, 2002. Water Quality Assessment of the Tuscarawas River, 2001, prepared for PPG Industries, Inc. June*), and 2006 (*Shaw, 2008. Update to the Baseline Assessment of the Tuscarawas River – 2006*). A chemical survey of Wolf Creek was performed over four quarters in 2002 and 2003, in accordance with *Phytocaps for Lime Lake 1 and Lime Lake 2 Work Plan, IT Corporation March 2002*. PPG submitted the *Revised Wolf Creek Sediment Sampling and Analysis Work Plan* (September 20, 2011). Following completion of the sediment sampling pursuant to the approved 2011 *Work Plan*, PPG submitted the *Wolf Creek Sediment Data Evaluation Report* on April 9, 2013. Ohio EPA agreed that no further action was required on April 11, 2013. In July 2013, PPG completed the *Habitat Enhancements: Riparian Zone Qualitative Habitat Evaluation Index* to determine whether habitat enhancements would be feasible or beneficial. PPG prepared a document titled *Tuscarawas River Summary Document* and dated April 2015 which summarized existing data to support a meeting with Ohio EPA on June 17, 2015. In a letter dated March 7, 2016, Ohio EPA agreed that habitat enhancements would not be feasible or beneficial.



STATUS: Category 1 (no further action required).

ONGOING AND FUTURE ACTIVITIES: None.

GOVERNING DOCUMENTS: None.

DELIVERABLES: None.

#### **J-4i Impounding Reservoir**

**DESCRIPTION:** The Impounding Reservoir is an area of approximately 240 acres immediately north of Lime Lake 6. Built in 1959, it was used to store and then release decant waters from the Lime Lakes that were in active use between 1959 and 1985. The location of the Impounding Reservoir is shown on Figure J-7, which depicts the Sitewide Groundwater areas of the Facility (Section J-4e).

#### **REMEDIAL GOAL:**

- Eliminate unacceptable risks to human health and the environment due to soil exposures.

**COMPLETED ACTIVITIES:** Current human exposures were identified as under control at the time of the 2010 Permit. To address the goal of eliminating unacceptable risks to the environment, PPG performed an evaluation of risks from the Impounding Reservoir titled *Reevaluation of Impounding Reservoir Risk Assessments* (dated July 28, 2014 and revised March 6, 2015) which concluded that a Phase I ecological risk assessment was required. On March 6, 2015, PPG submitted a *Phase I Ecological Risk Assessment Work Plan* (approved by Ohio EPA on March 19, 2015), followed by a *Phase I Ecological Risk Assessment – Impounding Reservoir Report* dated September 15, 2015. In a letter dated April 25, 2017, Ohio EPA requested fish tissue sampling, but in correspondence dated June 23, 2017, Ohio EPA concluded that no tissue sampling was required at that time.

**STATUS:** Category 1 (no further action required).

**ONGOING AND FUTURE ACTIVITIES:** Based on the *Phase I Ecological Risk Assessment – Impounding Reservoir Report*, no further action is required at the Impounding Reservoir. Accordingly, this Media Focus Area has been re-classified as Category 1. IM-III site access controls (fencing) applied at Impounding Reservoir are addressed in Section J-3b above. These fence and erosion control inspections are completed annually and the observations (included in an inspection form) and repairs (if any) are documented in the appropriate monthly RCRA Progress Report. Since IM-III evolved over time into a site wide requirement, the ongoing activities regarding access controls do not prevent the Impounding Reservoir from being identified as Category 1.

**GOVERNING DOCUMENTS:** See Section J-3b regarding IM-III access controls.

**DELIVERABLES:** Annual fence and erosion inspection forms are provided in the corresponding monthly RCRA Progress Reports. See Section J-3b regarding IM-III access controls.

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#### **J-4j Lime Lake 1**

**DESCRIPTION:** Lime Lake 1 is depicted in Figure J-10 and is a 74-acre surface impoundment rising 40 feet from local grade. Approximately 3.6 million tonnes of waste were disposed in Lime Lake 1 between 1899 and 1913. This waste largely consisted of Solvay soda ash process wastes, but also included some chlorinated solvent process wastes, coal ash and cinders.

**REMEDIAL GOAL:** Per the *Lime Lake 1 Corrective Action Plan* dated August 2017, the goal of the Lime Lake remedy is to:

- Establish a vegetative cover to reduce precipitation infiltration by 27 percent or more.

Many additional remediation goals and performance standards are further stated in the *Lime Lake 1 Final Remedy Vegetative Cover Installation Performance Monitoring Work Plan* dated August 1, 2016, but the primary goals are as follows:

- Minimize leachate generation or release.
- Improve run-on/runoff control.
- Maintain lime lake surface for industrial use.
- Maximize unit stability including dike stability and side slope integrity down to adjacent streams.
- Meet Ohio Surface Water Quality Standards for selected organic and inorganic constituents in adjacent surface water bodies (Wolf Creek and Lower Hudson Run).

**COMPLETED ACTIVITIES:** A horizontal well leachate collection system was installed to control seep discharges to adjacent water bodies (Lower Hudson Run and Wolf Creek, tributary to Tuscarawas River). The leachate is then directed to the IM-II Wastewater Treatment Plant. Background information related to the leachate collection system, initial lime lake characterization, and horizontal well pilot testing is presented Section J-4k. In 2013, PPG evaluated potential shutdown of the leachate collection system and recommended continued operation as of the conditions at that time. This evaluation is included in the *Lime Lake 1 Final Remedy Development, Horizontal Well Leachate Collection System Shutdown Pilot Summary Report* dated August 20, 2013. Extensive correspondence and activities occurred during the term of the 2010 Permit regarding a final remedy, cover design, and pilot studies. Ultimately, PPG demonstrated the sufficiency of a soil/vegetative cover. PPG submitted a work plan titled *Lime Lake 1 Phytocover Installation Soil Borrow Area Characterization Work Plan* on September 26, 2017, followed by a report titled *Lime Lake 1 Phytocover Installation Soil Borrow Area Characterization* and dated February 22, 2018, which was approved by Ohio EPA on March 27, 2018. PPG conducted a study, *Static and Seismic Slope Evaluation for Existing*

*Lime Lake 1*, in 2017. PPG implemented the final remedy with installation of the vegetative cover between summer of 2018 and summer of 2019 in accordance with the *Lime Lake 1 Corrective Action Plan* dated August 2017. PPG submitted the *Ohio Hazardous Waste Facility - Corrective Measures Construction Completion Report* on January 21, 2020. Ohio EPA identified deficiencies and the report was resubmitted within the *2019 Lime Lake 1 Performance Monitoring & Construction Completion Report* on October 2, 2020, which was approved by Ohio EPA on March 5, 2021.

STATUS: Category 2 (remedy complete; ongoing leachate collection and performance monitoring)

ONGOING AND FUTURE ACTIVITIES: The final remedy for Lime Lake 1 is complete. This Media Focus Area is re-classified as Category 2 due to the ongoing leachate collection activities (groundwater is part of site-wide groundwater). PPG will continue implementation of the *Lime Lake 1 Final Remedy Vegetative Cover Installation Performance Monitoring Plan* dated August 1, 2016, and *IM-II Leachate Collection and Treatment System Operation & Maintenance Plan* dated September 15, 2011. The performance monitoring includes leachate elevation monitoring, horizontal well extraction monitoring, precipitation monitoring, Wolf Creek seep monitoring, initial leachate sampling and shallow groundwater sampling, and surface water monitoring. Performance monitoring is to be completed for three (3) years following the installation of the cover in 2019, after which the frequency will be evaluated and revised by PPG for the approval by Ohio EPA. Also at that time, the necessity of continued operation of IM-II at Lime Lake 1 will be evaluated potentially including the implementation of a pumping shutdown pilot test with the approval of Ohio EPA. Based on the results of the evaluation, PPG may seek termination of pumping subject to Ohio EPA approval. PPG will also continue implementation of post corrective action activities identified in the *Lime Lake 1 Corrective Action Plan* dated August 2017, which includes vegetative and stormwater management. Vegetative monitoring is completed semi-annually until at least 80% of the cover is vegetated. IM-III access controls implemented at Lime Lake 1 are addressed in Section J-3b above.

GOVERNING DOCUMENTS: *Lime Lake 1 Corrective Action Plan* (specifically Section 12.0 Post-Corrective Action Activities), August 2017, *Lime Lake 1 Final Remedy Vegetative Cover Installation Performance Monitoring Work Plan*, August 1, 2016, and *IM-II Leachate Collection and Treatment System Operation & Maintenance Plan*, September 15, 2011, or subsequent revisions by PPG and approved by Ohio EPA. See Section J-3b regarding IM-III access controls.

DELIVERABLES: The performance monitoring is submitted in independent annual reports to the Ohio EPA as appropriate. The IM-II and vegetative monitoring reports are

submitted in the corresponding Monthly RCRA Progress Reports. See Section J-3b regarding IM-III access controls.

#### **J-4k Lime Lake 2**

**DESCRIPTION:** Lime Lake 2 (LL2) is depicted in Figure J-11 and is a 41-acre surface impoundment rising 55 feet from local grade. Approximately 2.3 million tons of waste are disposed here, mostly Solvay soda ash process wastes. Dense Non-Aqueous Phase Liquids (DNAPL) from chlorinated solvent manufacturing waste are known to be present within LL2. From 1949 to 1973, the surface of LL2 was stabilized with approximately 20 feet of cinders and lime slaking residue or “slaker sands.” During this same time, a variety of organic wastes from the production of solvents at the Barberton Facility were also deposited into LL2. The waste material was a mixture of coal and ash cinder, coarse asbestos, and chlorinated solvents (still bottoms from the production of tetrachloroethene and trichloroethene) and solvent production by-products (hexachlorobenzene, pentachlorobenzene, hexachlorobutadiene, and hexachloroethane). These materials form the DNAPL and are the principal subject of the recent investigation activities.

Infiltrating precipitation reacts with the lime spoils and forms a high pH leachate, with high concentrations of calcium, sodium, chloride, and bicarbonate ions. A basal hard layer exists at the bottom of LL2 that was likely created when calcium precipitated as high pH water within the lime spoils interacted with the underlying aquifer with a more neutral pH. In areas where the basal hard layer is not present, there are native clays with low permeabilities. Conceptual Site Model investigations up through 2020 have indicated that together, the basal hard layer and native clay appear to form a semi-continuous aquitard that has historically caused a leachate mound to form in LL2. This aquitard is now referred to as the “basal confining layer,” a more appropriate term that recognizes that the confining layer consists of cemented lime spoils, native clay, or both.

#### **REMEDIAL GOALS:**

- Isolate to extent practicable sources of chlorinated organics from Lime Lake 2 to Main Plant area groundwater and to nearby surface waters by reduction of leachate production and dispersion.
- Prevent direct contact and wind dispersal.
- Meet Ohio Surface Water Quality Standards for selected organic and inorganic constituents in Lower Hudson Run.
- Reduce impact to Main Plant groundwater.
- Meet human health and ecological risk based standards.

**COMPLETED ACTIVITIES:** Three horizontal wells were placed in LL2 in 1993 for the purpose of controlling leachate migration from LL2 to adjacent surface water bodies. Background information related to the leachate collection system, initial lime lake characterization, and horizontal well pilot testing is presented in the *Interim Measure II*,



*Leachate Collection and Removal, Lime Lakes 1 and 2 Design Program, Lime Spoils Characterization and Pilot Horizontal Well Testing Program, IT Corporation, April 1993.* As-built drawings for the horizontal wells are provided in the *Lime Lakes 1 and 2, Horizontal Wells As-Built Drawings, W-301 through W-309, Eastman Cherrington, 1993.* Further information on the horizontal wells can be found in Shaw Environmental, Inc., 2009, *Operational Data Evaluation Summary Lime Lakes 1 and 2 Horizontal Well Leachate Collection System*, Monroeville, PA. The horizontal well collection system directs leachate to the IM-II Wastewater Treatment Plant.

Numerous characterization and remedy development efforts were undertaken during the term of the 2010 Permit. In 2018, PPG began working with its consultant to develop a more accurate understanding of the volume and location of DNAPL using dye enhanced laser induced fluorescence (DyeLIF) techniques. Through DyeLIF, PPG was able to confirm significantly reduced volumes of DNAPL and provide an understanding of its location. This study suggests that mobility is far less of a concern than originally thought. PPG submitted the *Final Remedy Development Updated DNAPL CSM Part 1: DNAPL Mass and Distribution* on February 5, 2019, which was conditionally approved by Ohio EPA on June 20, 2019. On April 7, 2020, PPG submitted to Ohio EPA the *Final Remedy Development DNAPL CSM Part 2: Mobility Assessment Report*, which Ohio EPA approved with comments in a letter dated October 5, 2020. PPG responded to these comments in letters dated May 20, 2021. Ohio EPA accepted the response in a letter dated October 25, 2021.

PPG submitted the *Subsurface Investigation and Stability Assessment, Lime Lake 2 Containment Dike Report* on January 11, 2019, which Ohio EPA approved with comments in a letter dated June 12, 2019 (with corrections in a letter dated August 28, 2019). PPG submitted a response to Ohio EPA comments in a letter dated November 13, 2019. Ohio EPA approved the response with additional comments on July 21, 2020. PPG submitted another response to Ohio EPA comments in a letter dated May 24, 2021, and Ohio EPA determined that their concerns were adequately addressed in a letter dated June 8, 2021.

PPG submitted a letter titled *Lime Lake 2 Preliminary Design* on September 2, 2020, and Ohio EPA provided comments on October 5, 2020. PPG submitted a response to these comments and revised preliminary design in a letter dated March 3, 2021 which was approved by Ohio EPA on May 17, 2021. PPG submitted the *Final Remedy Implementation Work Plan, Lime Lake 2 (95% design)* on May 27, 2021, and received comments via email from Ohio EPA on June 9, 2021. PPG responded to these comments in a letter dated June 16, 2021, which was approved by Ohio EPA via email on June 21, 2021. PPG submitted the *Final Remedy Implementation Work Plan, Lime Lake 2 -100% Submission* on September 21, 2021. In a letter dated October 7, 2021, PPG submitted a response to comments received from Ohio EPA during a conference call on September 27,

2021. The revised *Final Remedy Implementation Work Plan, Lime Lake 2 -100% Submission* was submitted on October 12, 2021, and was approved by Ohio EPA in a letter dated October 25, 2021.

STATUS: Category 3 (ongoing remedy).

ONGOING AND FUTURE ACTIVITIES: Construction of the final remedy began in late October 2021 following Ohio EPA's approval of the *Final Remedy Implementation Work Plan, Lime Lake 2 – 100% Submission*, and is expected to be completed in 2022. The *Lime Lake 2 Final Remedy Performance Monitoring Plan* and a letter titled *Supplemental Information for Lime Lake 2 Performance Monitoring Plan* dated June 1, 2022 have been submitted to Ohio EPA for review and the *Lime Lake 2 Operation and Maintenance Plan* is expected to be submitted in 2022.

PPG will continue leachate collection through the horizontal well system until the conveyance lines and/or electricity to these wells interfere with remedy construction in 2022, at which time they will only be operated as a contingency measure if deemed necessary until Ohio EPA approves a request to permanently abandon the wells. IM-III access controls implemented at Lime Lake 2 are addressed in Section J-3b above.

GOVERNING DOCUMENTS: *Final Remedy Implementation Work Plan, Lime Lake 2 – 100% Submission* dated October 12, 2021; *Wolf Creek Surface Water and Seep Sampling Work Plan* dated October 8, 2021, *IM-II Leachate Collection and Treatment System Operation & Maintenance Plan*, September 15, 2011, or subsequent revisions by PPG and approved by Ohio EPA. Once approved by Ohio EPA, the *Lime Lake 2 Final Remedy Performance Monitoring Plan* and the *Lime Lake 2 Operation and Maintenance Plan* will replace the latter two documents as the governing documents for ongoing activities at Lime Lake 2. See Section J-3b for IM-III access controls.

DELIVERABLES: The IM-II monitoring data is currently submitted in the Monthly RCRA Progress Reports. Performance monitoring reports are submitted annually. See Section J-3b for IM-III access controls.

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#### **J-4l Lime Lake 6**

**DESCRIPTION:** Lime Lake 6 (LL6) is depicted on Figure J-12 and is a Solvay soda ash process waste impoundment that covers approximately 228 acres approximate two (2) miles southeast of the PPG Main Plant in New Franklin, Ohio. LL6 received soda ash process wastewaters from 1953-1973. During 1952-1985, LL6 also accepted wastewaters containing numerous chemicals, including silicas, chlorinated hydrocarbons, bleach, herbicides, chlorcaustic, and acetone from production at PPG's South Plant. Biological treatment sludges from the Barberton (POTW) were also disposed at LL6 beginning in 1976.

In 2015, leachate from the waste impoundment was discovered to be seeping from LL6 and discharging to surface water, resulting in elevated pH and dissolved solids in unnamed streams to the north and east of LL6, and in the southwest corner. These waters flow to the Tuscarawas River west of LL6 and potentially impact that water body as well.

In the 2010 Renewal Permit, Lime Lake 6 had not yet undergone reclamation activities (similar to those activities completed at Lime Lakes 3-5). As a result, groundwater associated with Lime Lake 6 was not specifically listed within the 2010 Renewal Permit description as part of Southern Facility Groundwater, which in turn was part of Site Wide Groundwater. Now that the reclamation activities have been completed, Site Wide Groundwater now also includes groundwater associated with Lime Lake 6. See Section J-4e and Section J-2 / Table J-1.

**REMEDIAL GOALS:** Remedial goals have been met for Lime Lake 6 cover. Primary remedial goals for remedy to address seeps include the following:

- Separate surface water from impacted discharges to the extent practical to reduce discharge of untreated Lime Lake 6 leachate with elevated dissolved solids and pH to the adjacent stream.
- Treat collected leachate discharges to reduce elevated dissolved solids and pH prior to discharge to the Tuscarawas River.
- Restore or relocate in-stream aquatic habitat to the stream immediately north and east of Lime Lake 6.

**COMPLETED ACTIVITIES:** Lime Lake 6 underwent reclamation in accordance with a Sludge Management Plan and Permit to Install issued by Ohio EPA's Division of Surface Water, renewed approximately every five years. The final approved plan titled Lime Lake 6 Reclamation Management Plan was submitted on November 18, 2011 then revised on April 27, 2012 with an approval letter from the Ohio EPA issued on June 7, 2012 for the period between July 1, 2012 through July 1, 2017. The remedy was to complete the reclamation, which involved 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. Reclamation was completed in December 2017 in accordance with the *Lime Lake 6 Reclamation Management Plan*, and the *Remedy Construction Completion Report* was submitted on February 4, 2019, and pond removal was completed in the summer of 2019. Since completing reclamation, groundwater sampling activities for Lime Lake 6 have been added to the Integrated Groundwater Monitoring Program as part of Site Wide Groundwater.

A *Lime Lake 6 Unnamed Streams Seep Discharge Mitigation Corrective Measures Study* dated April 20, 2017, and a *Lime Lake 6 Corrective Measures Implementation Pre-Design Investigation Work Plan* dated September 21, 2017, were submitted to Ohio EPA. After Ohio EPA approval of the work plan in a letter dated October 24, 2017, the pre-design investigation was completed and reported in the *Pre-Design Investigation Lime Lake 6 Unnamed Streams Seep Discharge Mitigation Corrective Measures Implementation report (CMI Pre-Design Investigation Report)* dated March 14, 2019. A *Preliminary Design for Lime Lake 6 Unnamed Stream Seep Discharge Mitigation Corrective Action* was submitted to Ohio EPA on August 3, 2020, and comments were received on October 5, 2020. PPG responded to the comments in a letter dated January 13, 2021, which included revised preliminary design drawings. In a letter dated May 11, 2021, Ohio EPA acknowledged that their comments were resolved. On behalf of PPG, Mueser Rutledge Consulting Engineers (MRCE) prepared a *Geotechnical Investigation Work Plan* for Lime Lake 6 dated September 10, 2020. On May 6, 2021, PPG submitted *Slope Stability Review and Analysis Lime Lake 6, Barberton, OH* prepared by MRCE. The report demonstrates the existing slopes have safety factors meeting Ohio EPA criteria for deep slide surfaces and MRCE criteria for shallow slide surface. By email dated June 23, 2021, Ohio EPA concurred with MRCE's conclusions on the safety factors.

STATUS: Category 3 (reclamation complete, but ongoing remedy for seeps).

ONGOING AND FUTURE ACTIVITIES: The reclamation at Lime Lake 6 is complete. Activities addressing COCs at Lime Lake 6 remain under Site-Wide Groundwater (similar to Lime Lakes 3-5) (see Section J-4e). In 2015, the discovery of seeps from Lime Lake 6 reaching surface waters led to several additional studies and remedy development. PPG is developing the *Lime Lake 6 Seep Mitigation CMI Work Plan* and final remedy design for the corrective measure to address seeps from Lime Lake 6. The *Work Plan* will be submitted to Ohio EPA in 2022. Implementation of the remedy is expected to start in 2022; however, startup of the treatment system may not occur until Spring 2023.

**GOVERNING DOCUMENTS:** See Section J-3b regarding IM-III access controls. Remedy relating to LL6 seeps is in development. Upon submittal and subsequent approval, the *Lime Lake 6 Seep Mitigation CMI Work Plan* will become a governing document.

**DELIVERABLES:** Annual fence and erosion inspection forms are provided in the corresponding monthly RCRA Progress Reports. See Section J-3b regarding IM-III access controls.



**J-4m West Plant WMU 92**

DESCRIPTION: The West Plant was developed in the 1940s 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. 96 acres of the property, and three of the four WMUs in the area of West Plant, were sold to Norton Energy Storage LLC in 1999. The remaining unit (WMU 92) 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 *Draft CMS* evaluated the data and concluded that no further action was necessary for that WMU. Ohio EPA concurred with that conclusion as part of issuance of the 2010 Renewal Permit.

STATUS: Category 1. Remedy completed. No further action.

**J-4n Former Ohio Brass Settling Ponds WMU 110**

DESCRIPTION: The Ohio Brass Settling Ponds were two settling ponds formerly used for wastewater treatment by a lessee. After termination of the lease, the ponds were re-graded. The City of Barberton owns the property and it is developed as recreational fields. The RFI found no evidence of contamination in surface soils or groundwater, and no further action is required.

STATUS: Category 1. No further action.

**J-4o North Spoils Area WMU 96**

DESCRIPTION: The North Spoils Area is an approximately 3 acre unit. The unit was formerly 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 IM-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 was completed, the excavation was backfilled and the area was re-vegetated.

STATUS: Category 1. Remedy completed. No further action.

**J-4p South Spoils Area WMU 97**

DESCRIPTION: The South Spoils Area was used for general disposal from 1980 until 1992. The materials consisted of soil, concrete, asphalt, sand, limestone, brick, clay tile and silt. The WMU covered 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: Category 1. Remedy completed. No further action.

## **J-5 GROUNDWATER MONITORING**

### **J-5a Integrated Approach**

Groundwater plumes from a number of units regulated under OAC Rule 3745-54-101 have comingled 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 that required a permit is a hazardous waste storage building (HWSB). A notification of closure of the HWSB was submitted from PPG to Ohio EPA on March 4, 2020. A pre-closure inspection of the HWSB by a professional engineer licensed in the State of Ohio was conducted on March 31, 2020. Decommissioning of the HWSB was completed during the week of May 18, 2020 followed by the engineer's inspections. A Closure Certification Report was submitted on July 20, 2020. Ohio EPA approved the Final Closure Letter on August 20, 2020. This former unit does not require groundwater monitoring in accordance with OAC 3745-54-90 through 100 because it no longer contains hazardous waste and was successfully decommissioned without any indication of historical releases to the environment.

Because the groundwater plumes from the various units undergoing corrective actions are intermingled, it is not practical to separate them for groundwater monitoring purposes. A more efficient multifaceted approach is a sitewide groundwater monitoring program in accordance with OAC 3745-54-101 through the use of the following documents: the August 2001 Performance Based Corrective Action Agreement (PBA);, which introduced a long-term sitewide groundwater monitoring program ultimately approved in September 2003; the July 2003 *Sitewide Groundwater 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)*. The 2003 *Sitewide Groundwater Monitoring Program Plan* was revised and reissued as the *Integrated Groundwater Monitoring Program – Sampling and Analysis Plan* in February 2013, updated in December 2013, and approved by Ohio EPA on February 3, 2014 (*Groundwater SAP*). The 2004 *QAPPA* was updated and reissued in April 2013, with approval by Ohio EPA on February 3, 2014.

This combined approach is hereafter referred to as the “Integrated Groundwater Monitoring Program” or “IGWMP,” and is currently comprised of the *Groundwater SAP* and *QAPPA* as approved by Ohio EPA. PPG will continue to implement the IGWMP as approved, or as it may be revised and approved by Ohio EPA in the future.

## **J-5b Background**

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 groundwater and constituents from the Sharon Conglomerate into the underlying bedrock units. Erosion and glaciation have 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.

Groundwater occurs within the glacial deposits and in the Sharon Conglomerate. Shale layers within the Sharon Conglomerate create perched zones of groundwater. Some of the perched groundwater flows laterally toward outcrop areas at the edges of the bedrock forming local seeps and springs. The flow of groundwater 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 groundwater 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 groundwater across the Facility at all depths above the shale confining layer has been impacted by various Facility specific constituents of concern including organic chemicals and metals. The main constituents of concern in the groundwater include tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, vinyl chloride, hexachlorobenzene, chloride, dissolved solids, barium, calcium, and sodium. Source areas for the groundwater impacts include but are not limited to the Lime Lakes (chloride, dissolved solids), the production areas (e.g., North and South Plants), and the former waste disposal areas (e.g., CLF). Monitoring of these source areas are either covered under the IGWMP and/or a Media Focus Area final remedy, performance monitoring plan, or other operative plan such as a Reclamation Management Plan. Once the final remedy or operative plan is complete, the area is moved into the IGWMP (e.g. Contractor's Landfill, Lime Lake 6). The IGWMP includes Main Plant Groundwater (which encompasses the production areas at the northern end of the overall Facility such as North Plant and South

Plant), select wells from Lime Lake 1 and Lime Lake 2, Lime Lakes 3-6 (which are located in the central area of the overall Facility), and Southern Facility Groundwater (which refers to areas of the Facility further south that are not otherwise part of Main Plant Groundwater or Lime Lakes 3-6). See *Table J-1 – Progress Categories for Media Focus Areas* provided in Section J-2.

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 groundwater 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 an undetermined portion of shallow groundwater generally discharging into the aforementioned adjacent 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 groundwater at the multiple waste management units at the Facility. The available groundwater data collected periodically since the 1980s indicate that activities during development of the Facility and during operations at the Facility have affected the quality of groundwater at the site and that the documented groundwater plumes are intermingled and, thus, unit specific groundwater 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 groundwater exposure pathway for drinking water is incomplete. An incomplete pathway means that there is no pathway between contaminants and receptors. 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 a hydraulic divide such as the Tuscarawas River, Wolf Creek, and Hudson Run. The ultimate receptors of the groundwater are the surface water bodies located in or running through/adjacent to the PPG property. In addition, in December 2001, it was determined by U.S. EPA through an indicator CA-725 that exposures to human health were currently under control. In January 2007, it was determined by U.S. EPA through an indicator CA-750 that the migration of contaminated groundwater is currently under control.

### **J-5c Integrated Groundwater Monitoring Program**

As described in Section J-5a, PPG is currently implementing the Integrated Groundwater Monitoring Program, which consists of the most recently approved *Groundwater SAP* and *QAPPA* (or as may be subsequently revised and approved by Ohio EPA).

The original groundwater monitoring program developed and approved under the *PBA* from 2001 to 2003 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 Lime Lake 2 was part of a suspected buried drum investigation at that unit, only. The drum investigation consisted of a magnetometer survey that was conducted across the area in which USEPA identified drums in an aerial photograph (eastern side and southern tip of Lime Lake 2). The survey identified an anomaly, that was consistent with buried drums in these areas. There was no information on the contents of these drums. These activities are discussed in the RFI. 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 constituent concentrations were relatively stable, and Ohio EPA and U.S. EPA agreed. It was further 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. Triennial sampling events were completed in 2009, 2012, 2015, 2018 and 2021.

The purpose of the long term IGWMP is to evaluate the effectiveness of intrinsic (natural) bioremediation and monitored natural attenuation (MNA) at reducing the concentrations of constituents in the groundwater and to ensure that the spatial extent of the groundwater impacts is not expanding. The rationale for monitoring well selection included:

- Wells were selected to provide a manageable sitewide groundwater monitoring network. Unit specific sampling was not included. If required, additional remedy specific groundwater 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 DNAPL is present.
- Monitoring is primarily focused on the shallow groundwater since an undetermined portion of intermediate and outwash groundwater may flow up through this shallow zone prior to discharging into the local adjacent gaining streams. However, wells



are also included that monitor the deeper intermediate, outwash and bedrock groundwater zones in specific areas. These deeper zones of groundwater would not be expected to daylight in the adjacent streams, but presumably flow below grade in downgradient directions following regional glacial channels of the Hudson Run, Wolf Creek, and Tuscarawas River water ways.

- Monitoring wells included in the program are all located in or downgradient of the known 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 list of hazardous constituents with cleanup standards is provided in Table J-3 below, at the end of this Section J. The list of monitoring wells that are part of the Integrated Groundwater Monitoring Program is provided in Table J-4 below. These two Tables were previously identified in the 2010 Renewal Permit as Tables 1 and 2 respectively. There is no change to the cleanup standards (Table J-3); however, two Lime Lake 6 wells have been added to Table J-4 as part of this renewal application. These Table J-4 edits will also be made to the appropriate tables in the *Groundwater SAP* and *QAPPA*.

Additional information regarding the Integrated Groundwater Monitoring Program is available in the *Groundwater SAP* and *QAPPA*, as well as the most recent triennial groundwater monitoring report. Historical information is also available in the *RFI Report* and *MFD*.

## **J-6 ENVIRONMENTAL COVENANT**

PPG will enter into an Environmental Covenant (EC) with Ohio EPA pursuant to ORC §§ 5301.80-5301.92 as part of the overall final remedy. Negotiations regarding the EC began within one year after issuance of the 2010 permit but have been on hold in recent years. PPG will resume discussions about the EC with Ohio EPA within three (3) months of issuance of the renewal permit. The EC will restrict specified portions of the property to industrial, commercial, recreational, and/or other non-residential uses based upon the results of investigations and completed remedies. The EC will prohibit the use of groundwater for potable uses. The EC will also address the extraction of groundwater, subsurface excavation restrictions and/or other workplace controls necessary for protection of human health and the environment.



**J-7 FINANCIAL ASSURANCE**

PPG has in place, and will continue to maintain, financial assurance in the amount necessary to implement the corrective measures required in the Permit. Following approval of a corrective measure by Ohio EPA that is not covered by financial assurance, PPG will establish financial assurance for that corrective measure in accordance with the timeline set forth in the approval.

**TABLE J-2**

**REFERENCE: Media Focus Areas, Key Documents and Current Operative Plans**

Category 1: Remedy Complete / No Further Action

Category 2: Remedy Construction Complete with Long-Term O&M

Category 3: Ongoing Remedy Evaluation and/or Implementation

**\* *Current Operative Plans are denoted with an asterisk.***

This Table may be updated to reflect current information and is provided as a reference tool.

<b>Media Focus Area (MFA)</b>	<b>2010 Cat.</b>	<b>2020 Cat.</b>	<b>Document Title</b>	<b>Date (eDoc #)</b>	<b>Ohio EPA Approval Date (eDoc #)</b>	<b>Inspection, Monitoring, Reporting Requirements (and/or Comments)</b>
All MFA's	n/a	n/a	1991 USEPA-PPG, <i>Administrative Order on Consent</i> (1991 Order)	4/5/1991 (2073197)	4/4/1991 (USEPA)	Docket No. V-W-91-R-05. Included scope of seven interim measures, <i>RCRA Facility Investigation and Corrective Measures Study</i>
			1997 IT, <i>Final Revised RCRA Facility Investigation Report</i> (RFI)	4/1996 Revised 2/1997 (2057534)	5/18/1997 (USEPA)	Investigated the chemical quality of the various media across the site as a result of facility operations.
			1997 ChemRisk, <i>Sitewide Surface Water Preliminary Ecological Risk Assessment</i>	8/15/1997 (2071892)	N/A	Identified potential risks to ecological receptors.

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
All MFA's	n/a	n/a	1997 PPG, <i>Draft Corrective Measures Study – Description of Current Situation</i> (Draft CMS Report)	9/19/1997 (2051715) (2051716) (2051719) (2051720)	N/A	Draft CMS Report was never formally approved. Proceeded with a performance-based approach to corrective action instead via a <i>Performance Based Corrective Action Agreement</i> (August 2001)
			1998 ChemRisk, <i>Human Health Risk Assessment Report</i>	8/18/1997 Revised 6/5/1998 (2071884)	N/A	Identified potentially significant risks associated with releases from the site to help determine the need for corrective action, risk reduction measures or additional detailed risk assessment studies.
			2001 USEPA-PPG, <i>Performance Based Corrective Action Agreement</i> (PBA)	8/10/2001 (1853040)	7/30/2001 (USEPA)	Agreement outlining the process to select remedial goals and performance standards and implement corrective measures.
			2007 PPG, <i>Media Focus Document</i> (MFD)	July 2007 (1854752)	N/A	Presented goals, corrective measures, performance monitoring and performance monitoring standards for each MFA.
			2010 Ohio EPA, <i>Ohio Hazardous Waste Facility Installation and Operation Permit Renewal</i>	9/24/2010 (357865)	9/24/2010	Includes specific requirements for the management of hazardous waste at the facility and the implementation of the corrective actions including a schedule.
			2014 PPG, <i>Hazardous Waste Permit Modification – Class 1A</i>	1/9/2014 (357865)	2/24/2014	Modifications to the above permit including administrative/informational changes, revised Table 1 and revised Table 2.

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Multiple MFAs	n/a	n/a	*2011 PPG, <i>IM-II Leachate Collection and Treatment System Operation &amp; Maintenance Plan</i>	10/1994 Revised 9/13/2011 (1818494) 12/12/2014 (1818251)	3/6/2012 (1818493) 12/17/2014 (1818251)	Details regarding the operation and maintenance of both the leachate collection systems (Lime Lake 1, Lime Lake 2, Sand Quarry, and CLF) and the treatment system. Revisions in December 2014 documented in email correspondence.
			*2004 PPG, Standard Operating Procedure Interim Measure III Fence Inspections	3/17/2004 (Revised)	3/25/2006 (USEPA approval)	Originally titled Interim Measure III Public Access Controls (2/1993). Includes inspection requirements for Lime Lake 3, Lime Lake 4, Lime Lake 5 and Lime Lake 6 fencing. To be replaced with pending <i>Access and Erosion Control Plan</i> and will also include the Main Plant, Lime Lake 1, Lime Lake 2, Contractor's Landfill, Impounding Basin, Hudson Run Reservoir, Lower Hudson Run Wolf Creek, Duck Ponds and portions of the Tuscarawas River Dredge Spoils.
West Plant (WMU 92)	1	1	n/a			None
Former Ohio Brass Settling Ponds (WMU 110)	1	1	n/a			None
North Spoils Area (WMU 96)	1	1	n/a			None
South Spoils Area (WMU 97)	1	1	n/a			None

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lower Hudson Run Surface Water	2	2	*2011 PPG, <i>Lower Hudson Run Low Head Dams Inspection and Maintenance Plan</i>	1/31/2011 (1818277)	4/22/2011 (1818271)	<ul style="list-style-type: none"> <li>Fencing and signage inspections annually. Repairs as needed.</li> <li>Low head dam and erosion control/stream channel scour prevention system inspection during late summer (or within 2 weeks of 100-year storm). Repairs as needed.</li> <li>Low head dam spillway debris inspections in early spring and late summer. Debris removal as necessary.</li> <li>Submit report (in Progress Reports) within 3 months of inspection event and four months of completed repairs.</li> </ul>
Hudson Run Reservoir Sediment	2	2	*2011 PPG, <i>Hudson Run Reservoir PPG Barberton Facility In Situ Sediment Cap Inspection and Maintenance Plan</i>	2/16/2011 (1868313)	3/18/2011 (1818276)	<ul style="list-style-type: none"> <li>Annually (and after 100-year storm event or a potential scour event) measure cap surface elevation at four points within the cap area. Repair submarine cap if damaged.</li> <li>Fence line inspections in April, June, August and October of each year.</li> <li>Inspection Report submitted within 3 months of inspection within Progress Report.</li> <li>Repair Report submitted within 4 months of repairs within Progress Report.</li> </ul>
Contractor's Landfill	2	2	*2008 PPG, <i>Contractor's Landfill PPG Barberton Facility Infiltration Control Performance Measures and Post Construction Monitoring</i>	4/15/2008 (1644554)	Conditional Approval: 4/11/2008 (1820180)	<ul style="list-style-type: none"> <li>Monthly leachate elevation monitoring.</li> <li>Daily flow measurements.</li> <li>Annual leachate sampling of MH-1 and MH-2.</li> <li>Annual Reporting of performance monitoring.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Contractor's Landfill	2	2	*2011 PPG, <i>Contractors' Landfill PPG Barberton Facility, Infiltration Control Cover System Post-Construction Operation and Maintenance Plan</i>	8/27/2010 (1820181)  Revised: 2/9/2011 (1471936)	Comments: 1/6/2011 (2050794)  Approved: 5/16/2011 (1818274)	<ul style="list-style-type: none"> <li>• Early and late summer mowing/vegetation control of cover.</li> <li>• Mid to Late Spring and Early to Mid-Fall Inspections or within 2 weeks of a 25 year/24 hour storm event or greater.</li> <li>• Repairs as needed to maintain cover integrity.</li> <li>• Inspection and Maintenance Reports will be submitted within 3 months of the inspection event within the Progress Reports.</li> </ul>
Main Plant Soils (Sand Quarry WMUs 83, 84, 87, 88, 89 and WMUs 9, 61, 66, 81, 90)	2	2	1992 IT, <i>Pre-Investigation Evaluation of Corrective Measures Technologies</i>	2/1992 (2051707)	N/A	Includes a discussion of WMU 9, 61, 66, 81 and 90. Evaluates potential corrective measures.
			2003 PPG, <i>Notification of Work Activities, Blanket Authorization Request</i>	6/20/2003 (1316203)	7/24/2003 (1316202)	Following PPG's request, Ohio EPA issued an authorization to excavate, fill, grade and conduct building activities under Rule 13 of Ohio Administrative Code.
			*2008 PPG, <i>On-Site Excavation and SWMU Management Procedure (PPG Excavation Plan)</i>	3/27/2008 (1818250)	Additional Guidance: 1/11/2016 (2050790)	If excavations are to be performed and soil contamination is encountered, then excavations would be conducted in accordance with this plan.

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Site Wide Groundwater (Main Plant, and Lime Lake 3-6 [Southern Facility]) Includes Main Plant Vapor Intrusion	2	2	*2011 PPG, <i>Infiltration Control Improvements Inspection and Maintenance Plan North and South Plants</i>	5/12/2011 (1845495)	6/14/2011 (1818273)	<ul style="list-style-type: none"> <li>Annual Inspection of infiltration control improvements. Repairs and maintenance will be performed as needed.</li> <li>Inspection reporting will be included as part of the monthly progress reporting and will be submitted within 3 months of the inspection, repairs report within 4 months.</li> </ul>
			*2011 Shaw, <i>Monitoring Well Inspection, Maintenance, Sealing, and Abandonment Plan</i>	8/1/2011 (1845496)	1/13/2012 (1818481)	<ul style="list-style-type: none"> <li>Inspect, develop, sample and abandon select monitoring wells every year from 2011 (Year 1) through 2019 (Year 9). Abandonment of wells in 2019 was postponed until 2021. Well abandonment complete.</li> </ul>
			*2011 PPG, <i>Groundwater Monitoring Well Inspection Procedure</i>	8/3/2011 (1845494)	1/24/2012 (1818480)	<ul style="list-style-type: none"> <li>Procedure for well inspections.</li> </ul>
			2012 PPG, <i>Final Report Groundwater Attenuation Enhancement Feasibility Study and Report of Findings</i>	Draft: 3/15/2011 (2051709) Response: 6/28/2012 (2050786) Revised: 7/16/2012 (1845503)	Comments: 4/20/2012 (2050795)  Approved 3/15/2013 (1818491 & 1845497)	<ul style="list-style-type: none"> <li>Concluded that enhancement was not needed</li> </ul>



Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Site Wide Groundwater (Main Plant, and Lime Lake 3-6 [Southern Facility]) Includes Main Plant Vapor Intrusion	2	2	*2013 Shaw, <i>Sitewide Groundwater Monitoring Program Quality Assurance Project Procedures Addendum</i>	7/2003 Revised: 3/2004 6/2004 2/2012 2/2013 4/2013 12/2013 (1818487)	2/3/2014 (357865)	<ul style="list-style-type: none"> <li>Quality assurance guidelines used for the Integrated Groundwater Monitoring Program.</li> <li>Multiple revisions since original in March 2004, some of which are minor page replacements.</li> </ul>
			*2013 Shaw, <i>Integrated Groundwater Monitoring Program – Sampling and Analysis Plan, PPG Barberton Facility</i>	2/2013 Updated: 12/4/2013 (1164667)	Comments: 5/17/2013 2/3/2014 (357865)	Sitewide groundwater monitoring is conducted every 3 years from select monitoring wells to evaluate natural attenuation of selected chemicals of concern in groundwater. Required permit modification approved 2/24/2014
			2017 ERM, <i>Vapor Mitigation System As-Built/Start-Up Report</i>	1/2017 (633993)	N/A	<ul style="list-style-type: none"> <li>As-built drawings.</li> </ul>
			2018 ERM, <i>Vapor Mitigation System As-Built/Start-Up Report Addendum (54B and 109B)</i>	5/8/2018 (879338)	10/25/2018 (929763)	<ul style="list-style-type: none"> <li>Addendum to final as-built drawings submittal.</li> </ul>
			2018 ERM, <i>Vapor Mitigation System Operation, Maintenance and Monitoring Plan</i>	1/5/2017 (633991) Updated: 5/8/2018 (879342)	10/25/2018 (929764)	<ul style="list-style-type: none"> <li>Vapor mitigation system operation, maintenance and monitoring requirements.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Site Wide Groundwater  (Main Plant, and Lime Lake 3-6 [Southern Facility]) Includes Main Plant Vapor Intrusion	2	2	2020 ERM, <i>Proposed OM&amp;M Plan Changes for PPG Barberton, OH Facility (Vapor Mitigation System)</i>	7/21/2020 (1380235)	10/6/2020 (1444412)	Approve OM&M Requirements: <ul style="list-style-type: none"> <li>• Annual suction point vacuum, suction point flow rate and differential pressure (from floor) monitoring during the heating season.</li> <li>• If floor differential pressure drops below 0.004 inches water column, then indoor air and outdoor ambient air samples will be collected for the applicable building during the heating season.</li> <li>• Building 174: If the elevated water table is present during system monitoring, no further action is needed. If the elevated water is not present, monitoring as described above will be completed.</li> </ul>
			*2021 ERM, <i>Vapor Mitigation System Operation, Maintenance and Monitoring Plan</i>	3/10/2021 (1534595)	3/29/2021 (1539740)	Revised per the above proposed changes.
Tuscarawas River Dredge Spoils	2	2	ChemRisk 1996, <i>Hexachlorobenzene Screening Criteria &amp; Hazard Evaluation</i>	10/12/1995 (940897) Revised 6/12/1996 (2051711)	12/1/1995	<ul style="list-style-type: none"> <li>• Establish a human health benchmark screening criteria of 100 mg/kg for hexachlorobenzene.</li> <li>• Identified three locations for access control using fencing.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Tuscarawas River Dredge Spoils	2	2	*2014 PPG, <i>Tuscarawas River Dredge Spoils Security and River Bank Erosion Control Measures Inspection and Maintenance Plan</i>	4/12/2011 (1538475)  Revised: 7/28/2014 (1820179)	4/26/2011 (1818275)	<ul style="list-style-type: none"> <li>• Bank erosion plan revised to include Canoe Launch Area stabilization.</li> <li>• Control public access, inspect fences in April, June, August and October,</li> <li>• Bank stabilization inspections performed in summer or late fall during low flow conditions, Repairs as needed.</li> <li>• River bank evaluations, inspections and sampling every 5 years beginning 2012 during low flow conditions.</li> <li>• Inspection Reports submitted within 3 months of inspection and repair reports submitted within 4 months of repairs.</li> </ul>
			2013 Shaw, <i>Tuscarawas River Dredge Spoils Scoping-Level Ecological Risk Assessment</i>	9/10/2013 (2051713)	2/13/2014 (2050793)	<ul style="list-style-type: none"> <li>• Concluded that past releases occurred, and ecological resources were present, therefore continued ecological investigation was warranted.</li> <li>• Recommended combining Level II and Level III ERAs and preparing a work plan.</li> </ul>
			2018 Shaw, <i>Combined Level II and III Tuscarawas River Dredge Spoils Ecological Risk Assessment Work Plan</i>	4/24/2014 (2051712)	6/23/2017 (642868)	<ul style="list-style-type: none"> <li>• Established a work plan to implement the following risk assessment.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Tuscarawas River Dredge Spoils	2	2	2018 Aptim, <i>Combined Level II and III Ecological Risk Assessment Tuscarawas River Dredge Spoils</i>	1/30/2018 (776903)	Comments: 11/16/2018 (942607)	<ul style="list-style-type: none"> <li>The Level II and III Ecological Risk Assessment recommended that a Level IV Ecological Risk Assessment be completed. (Ohio EPA did not agree that Level IV ERA is warranted at this time, but requested updating existing data and obtaining new data, and consider ways to minimize areas prone to erosion).</li> </ul>
			2020 Arcadis, <i>Response to Comments on Ecological Risk Assessment with Supplemental Dredge Spoils Evaluation.</i>	5/20/2020 (1351045)	Comments: 10/5/2020 (1443464) and 4/16/2021 (1552089)	<ul style="list-style-type: none"> <li>Presented additional sampling data (2019) and additional literature data. Recommends remedy at one bank erosion area. States implementation of remedy at Lime Lake 2 will improve water quality.</li> </ul>
			2022 Arcadis, <i>Clarified Response to October 5, 2020 Correspondence on Combined Level II and III Ecological Risk Assessment, Tuscarawas River Dredge Spoils Report.</i>	3/24/2022 (1772416)	7/21/2022 (1922274)	<ul style="list-style-type: none"> <li>Includes results of an earthworm investigation and update to ecological risk assessment.</li> <li>Concludes that the potential exposure risks to receptors foraging on earthworms from the dredge spoils are negligible and that the waste management unit be eliminated from further consideration for corrective action.</li> </ul>
Lower Hudson Run Sediment	3	1	2012 Shaw, <i>Focused Sediment Removal Work Plan, Lower Hudson Run PPG Barberton Facility</i>	8/18/2011 (1818801) Revised: 3/28/2012 (1818788)	11/28/2011 (1818482) Approved: 2/8/2012 (1818479)	<ul style="list-style-type: none"> <li>Work Plan for removal of sediment for Lower Hudson Run. (see above, removal not required)</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lower Hudson Run Sediment	3	1	2013 Tetra Tech, <i>Lower Hudson Run Sediment Assessment Report</i>	12/11/2012 (1818800) Revised: 4/9/2013 (1818489)	Comments: 1/2/2013 (2050792) Approved: 4/11/2013 (1818488)	<ul style="list-style-type: none"> <li>Accumulations of fine-grained sediment no longer present in Lower Hudson Run and ecological risk assessment indicate removal not necessary. Recommended no sediment removal.</li> <li>As recommended, from May 2013 through May 2017 annual monitoring of the LHR sediment accumulation was performed.</li> </ul>
			2017 CB&I, <i>Final Summary Report, Lower Hudson Run, 2017 Sediment Accumulation Monitoring and Sampling</i> (Submitted with June 2017 Progress Report)	6/21/2017 Revised: 7/10/2017 (Progress Report) (693389)	NA	<ul style="list-style-type: none"> <li>Report dated June 21, 2017 and was submitted to Ohio EPA in the June 2017 Progress Report dated July 10, 2017.</li> <li>No fine-grained sediment observed within 150 feet upstream of upper and lower Low Head Dams. Monitoring considered complete.</li> </ul>
Tuscarawas River and Wolf Creek	3	1	1994 Ohio EPA, <i>Biological, Sediment and Water Quality Study of the Tuscarawas River, Wolf Creek and Hudson Run, Summit and Stark Counties, Ohio</i>	7/30/1994 (2050791)	N/A	<ul style="list-style-type: none"> <li>Presented results of an Ohio EPA study performed in 1994.</li> </ul>
			2002 IT, <i>Phytocaps for Lime Lake 1 and Lime Lake 2 Work Plan</i>	3/2002	N/A	<ul style="list-style-type: none"> <li>Required a chemical survey of Wolf Creek over four quarters in 2002 and 2003.</li> </ul>
			2002 Exponent, <i>Water Quality Assessment of the Tuscarawas River</i>	6/2002 (2051714)	N/A	<ul style="list-style-type: none"> <li>Presented results of a study performed in 2001 for PPG Industries, Inc.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Tuscarawas River and Wolf Creek	3	1	2008 Shaw, <i>Update to the Baseline Assessment of the Tuscarawas River</i>	4/2008 (2051708)	N/A	• Presented results of a study performed in 2006 for PPG Industries Inc.
			2011 Shaw, <i>Revised Wolf Creek Sediment Sampling and Analysis Work Plan</i>	8/8/2011 (2050789) Final: 9/20/2011 (2050788)	9/2/2011 (approved with comments) (2050787)	• Outlines details for characterizing the sediments in Wolf Creek.
			2013 Shaw, <i>Wolf Creek Sediment Data Evaluation Report</i>	4/9/2013 (1818789)	4/11/2013 (1845499)	• Based on the data evaluation of sediment sample results from Wolf Creek, and additional lines of evidence, adverse ecological impacts are not expected, and remedial action is not recommended for Wolf Creek.
			2013 Shaw, <i>Habitat Enhancements.: Riparian Zone Qualitative Habitat Evaluation Index Tuscarawas River and Wolf Creek</i>	7/26/2013 (1818496)	3/7/2016 (411236)	• Concluded that habitat enhancements are not feasible nor beneficial. Ohio EPA approved, but stated this could be revisited. Efforts should be concentrated on the Lime Lakes and contaminant load reduction to the streams.
			2015 CB&I, <i>Tuscarawas River Summary Document</i>	4/2015 (1846596)	N/A	• Summary of data only. Data discussed with Ohio EPA during June 17, 2015 meeting.
Impounding Reservoir	3	1	*2004 PPG, Standard Operating Procedure Interim Measure III Fence Inspections	3/17/2004 (Revised)	3/25/2006 (USEPA approval)	• Includes inspection requirements for Impounding Reservoir. To be replaced with pending <i>Access and Erosion Control Plan</i> .

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Impounding Reservoir	3	1	2015 CB&I, <i>Reevaluation of Impounding Reservoir Risk Assessments</i>	7/28/2014 (1922026)  Revised & response: 3/6/2015 (1799267)  Response: 4/15/2015 (via email)	1/13/2015 (1799268) Approved with Comments: 3/19/2015 (143406) Acceptance of Responses: 4/21/2015 (via email) (1846666)	• Human health risks are acceptable. Surface water risks are acceptable. A Phase I Ecological Risk Assessment is required.
			2015 CB&I, <i>Phase I Ecological Risk Assessment Work Plan – Impounding Reservoir</i>	3/6/2015 (1799267)  Response: 4/15/2015 (via email)	Approved with Comments: 3/19/2015 (143406) Acceptance of Responses: 4/21/2015 (1846666)	• Work plan outlines methodologies to complete risk assessment.
			2015 CB&I, <i>Phase I Ecological Risk Assessment - Impounding Reservoir</i>	9/15/2015 (296669)	4/25/2017 (613997) Clarification: 6/23/2017 (642868)	• Based on the results of this Phase I ERA, potential negative effects to sensitive receptors are within acceptable boundaries, and the remedy for this unit does not need to be re-evaluated. The original 4/25/2017 approval required fish tissue sampling, but after further discussion fish tissue sampling was not required per the 6/23/2017 approval.



Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 1	3	2	1993 IT, <i>Interim Measure II, Leachate Collection and Removal, Lime Lakes 1 and 2 Design Program, Lime Spoils Characterization and Pilot Horizontal Well Testing Program</i>	4/1993 (2051710)	N/A (USEPA Approved)	<ul style="list-style-type: none"> <li>• Presents preliminary proposed locations of horizontal wells to intercept seepage.</li> <li>• Presents the information needed to design the horizontal wells.</li> </ul>
			1993 Eastman Cherrington, <i>Lime Lakes 1 and 2, Horizontal Wells As-Built Drawings, W-301 through W-309</i>	10/1993	N/A (USEPA Approved)	<ul style="list-style-type: none"> <li>• Provides the as-built drawings from the installation of the horizontal wells.</li> </ul>
			2009 Shaw, <i>Operational Data Evaluation Summary Lime Lakes 1 and 2 Horizontal Well Leachate Collection System</i>	7/2009	N/A (USEPA Approved)	<ul style="list-style-type: none"> <li>• Leachate levels in Lime Lakes 1 &amp; 2 fluctuate and are influenced by surface recharge.</li> <li>• A cap is recommended to control surface infiltration.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 1	3	2	2013 Shaw, <i>Lime Lake 1 Final Remedy Development, Horizontal Well Leachate Collection System Shutdown Pilot Study Summary Report.</i>	8/20/13 (1818486)	2/27/2014 (1818495)	<ul style="list-style-type: none"> <li>• Concluded surface water in Lower Hudson Run and Wolf Creek is not being impacted above Ohio water quality standards from Lime Lake 1 seepage, even without the operation of horizontal well leachate collection system. As of 2013, horizontal wells considered best available technology to control flow of Lime Lake 1 seeps to Wolf Creek and possibly Lower Hudson Run in conjunction with low head dams.</li> <li>• Recommended to maintain and operate horizontal well leachate collection system.</li> </ul>
			*2016, CB&I, <i>Lime Lake 1 Final Remedy Vegetative Cover Installation Performance Monitoring Work Plan</i>	12/14/2015 (1846597)  Response: 6/14/2016 (2050785)  Final: 8/1/2016 (1039259)	Comments: 5/23/2016 (447553)  Conditional Approval: 7/18/2016 (464748)	<ul style="list-style-type: none"> <li>• Monthly leachate elevation monitoring, horizontal well extraction rate monitoring, local precipitation monitoring.</li> <li>• Wolf Creek seep monitoring performed monthly during summer and fall and quarterly during spring and winter.</li> <li>• Leachate and Groundwater (non IGWMP) Lime Lake 1 Groundwater Sampling, 3 years after completion of cover.</li> <li>• Surface Water Sampling, one and three years after completion of cover.</li> <li>• Ohio EPA's response requested an evaluation of Lime Lake 1 by a geotechnical engineer.</li> </ul>
			*2017 Aptim, <i>Lime Lake 1 Corrective Action Plan</i>	8/2017 (757678)	9/11/2017 (689913)	Vegetation monitoring (Semi-annual for 3 years or until 80% vegetation) <ul style="list-style-type: none"> <li>• Vegetative and stormwater management.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 1	3	2	2017 PPG, <i>Lime Lake 1 Phytocover Installation Soil Borrow Area Characterization Work Plan</i>	9/26/2017 (763860)	11/20/2017 (726231)	<ul style="list-style-type: none"> <li>• Outlines the details for sampling the soil borrow area soil for chemical analysis and soil description.</li> </ul>
			2018 PPG, <i>Lime Lake 1 Phytocover Installation Soil Borrow Area Characterization</i>	2/22/2018 (776928)	3/27/2018 (795007)	<ul style="list-style-type: none"> <li>• Summarizes the result of the chemical analysis on the soil from within the soil borrow area. Soil was deemed acceptable for use.</li> </ul>
			2017 Timmerman, <i>Static &amp; Seismic Slope Evaluation for the Existing PPG Lime Lake 1</i>	4/17/2017 Submitted: 4/27/2017 (784157)	N/A	<ul style="list-style-type: none"> <li>• Slope analysis resulted in acceptable static and seismic safety factors. In addition, settlement is expected to be minor. Report prepared for McCabe Engineering &amp; Contracting.</li> </ul>
			2020 Entact, <i>Ohio Hazardous Waste Facility - Corrective Measures Construction Completion Report</i>	1/21/2020 (1305146)	Comments: 3/30/2020 (1329969)	<ul style="list-style-type: none"> <li>• Not approved, comments required revisions.</li> </ul>
			2021 Arcadis, <i>2019 Lime Lake 1 Performance Monitoring &amp; Construction Completion Report</i>	10/2/2020  Final: 7/1/2021 (1600140 replaced 10/2 version)	Approved with modifications 3/5/2021 (1527499)	<ul style="list-style-type: none"> <li>• Clarified vegetative monitoring schedule (spring and fall starting June 2020 for 3 years or until 80% of area is covered from selected species of vegetation).</li> <li>• Clarified performance monitoring schedule. (Post construction leachate/groundwater and surface water sampling will be conducted in June 2022).</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 2	3	3	2020 Arcadis, <i>Lime Lake 2 Preliminary Design</i>	9/2/2020 (1412471)	Comments: 10/5/2020 (1443461)	<ul style="list-style-type: none"> <li>• Preliminary design to cap Lime Lake 2</li> </ul>
			2021 Arcadis, <i>Response to Ohio EPA Comment Letter Dated October 5, 2020 Regarding the Lime Lake 2 Final Remedy Preliminary Design and PPG Industries Lime Lake 2 Final Remedy Design Equivalency Request</i>	3/3/2021 (1527920)	5/17/2021 (1570087)	<ul style="list-style-type: none"> <li>• Responded to Ohio EPA comments on initial preliminary design.</li> <li>• Included equivalency request for design which differs from state guidelines for solid waste.</li> <li>• Included a revised version of the preliminary design drawings.</li> </ul>
			2021 Arcadis, <i>Final Remedy Implementation Work Plan, Lime Lake 2 (95% Design)</i>	5/27/2021 (1588549)	6/9/2021 (email) (1591650)	<ul style="list-style-type: none"> <li>• Includes details of the Lime Lake 2 remedy including drawings with additional detail.</li> <li>• Moved the stormwater basin from the east side to the central portion of Lime Lake 2.</li> </ul>
			2021 Arcadis, Response to comments regarding above document	6/16/2021 (1588521)	6/21/2021 (email) (1590297)	
			*2021 Arcadis, <i>Final Remedy Implementation Work Plan, Lime Lake 2 – 100% Submission</i>	9/21/2021 Clarification 10/7/2021 (1663740) Final: 10/12/2021 (1658748)	10/25/2021 (1665304)	<ul style="list-style-type: none"> <li>• Final design used for construction contractor bidding, contractor selection and remedy implementation.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 2	3	3	2021 Arcadis, <i>Lime Lake 2 Performance Monitoring Plan</i>	11/15/2021 (1678712) Supplement 6/1/2022 (1832507)	Pending	<ul style="list-style-type: none"> <li>Collection of DNAPL thickness, elevation data and groundwater samples. Seep monitoring. APPROVAL PENDING</li> </ul>
			2019 Arcadis, <i>Final Remedy Development Updated DNAPL CSM Part 1: DNAPL Mass and Distribution</i>	2/5/2019 Revised: 7/8/2019 (991756)	6/20/2019 (1078391)	<ul style="list-style-type: none"> <li>Concludes that DNAPL mass is less than previously estimated, and DNAPL zones are thinner. Infiltration carries risk of downward migration of DNAPL. Recommends re-assessment of potential DNAPL mobility.</li> </ul>
			2021 Arcadis, <i>Final Remedy Development Updated DNAPL CSM Part 2: DNAPL Mobility</i>	4/7/2020 (1339620) Response: 5/20/2021 (1572999) Revised: 10/5/2021 (1663740)	Comments: 10/5/2020 (1443463) Approved: 10/25/2021 (1662524)	<ul style="list-style-type: none"> <li>Concludes that capping Lime Lake 2 would have stabilizing impact on DNAPL and would dramatically reduce vertical migration of dissolved phase contaminants into underlying aquifer. Recommends additional investigation activities.</li> </ul>
			2019 MRCE, <i>Subsurface Investigation and Stability Assessment, Lime Lake 2 Containment Dike</i>	1/11/2019 (976056) Response: dated 11/13/2019, sent 7/9/2020 (1377197)	6/12/2019 (1070735) Correction: 8/28/2019 7/21/2020 (1377197)	<ul style="list-style-type: none"> <li>Lime Lake 2 slopes are stable prior to cap installation.</li> <li>Lowering leachate or groundwater level 5 to 10 feet or placing a few feet of soil to form a cap are not anticipated to result in changes in performance.</li> <li>Lime Lake 2 slope stability analysis for conditions following cap installation yields acceptable factors of safety.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 2	3	3	2020 Lime Lake 2 Slope Stability Analysis	5/24/2021 (1576421)	6/8/2021 (1581274)	<ul style="list-style-type: none"> <li>Evaluated slope stability post construction using 2020 preliminary design. Factors of safety remained acceptable.</li> </ul>
			*2021 Arcadis, <i>Wolf Creek Surface Water and Seep Sampling Work Plan</i>	10/1/2018 (962054)  Revised 2/15/2019 (1446841)  Revised 10/8/2021 (1655617)	10/14/2021 (1656751)	<ul style="list-style-type: none"> <li>Leachate elevation data collection at the wells, seep inspections (daily if level rises above set point)</li> <li>If seeps are observed, then seep and surface water sampling will be conducted. If data shows an issue Ohio EPA will be notified within 3 business days.</li> <li>Observations and data reported in monthly progress reports.</li> </ul>
			1993 IT, <i>Interim Measure II, Leachate Collection and Removal, Lime Lakes 1 and 2 Design Program, Lime Spoils Characterization and Pilot Horizontal Well Testing Program</i>	4/1993	N/A (USEPA Approved)	<ul style="list-style-type: none"> <li>Presents preliminary proposed locations of horizontal wells to intercept seepage.</li> <li>Presents the information needed to design the horizontal wells.</li> </ul>
			1993 Eastman Cherrington, <i>Lime Lakes 1 and 2, Horizontal Wells As-Built Drawings, W-301 through W-309</i>	10/1993	N/A (USEPA Approved)	<ul style="list-style-type: none"> <li>Provides the as-built drawings from the installation of the horizontal wells.</li> </ul>

Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 2	3	3	2009 Shaw, <i>Operational Data Evaluation Summary Lime Lakes 1 and 2 Horizontal Well Leachate Collection System</i>	7/2009	N/A	<ul style="list-style-type: none"> <li>Leachate levels in Lime Lakes 1 &amp; 2 fluctuate and are influenced by surface recharge.</li> <li>A cap is recommended to control surface infiltration.</li> </ul>
Lime Lake 6	3	3	2012 PPG, <i>Lime Lake 6 Reclamation Management Plan</i>	11/18/2011 Revised: 4/27/2012 (1780058)	6/7/2012 (DSW) (1846598)	<ul style="list-style-type: none"> <li>Application of biosolids to establish vegetative cover. Approved for period between July 1, 2012 through July 1, 2017.</li> </ul>
			2019 PPG, <i>Lime Lake 6 Remedy Construction Completion Report</i>	2/4/2019 (1009408)	N/A	<ul style="list-style-type: none"> <li>Documents completion of Lime Lake 6 cover</li> </ul>
			2017 CB&I, <i>Lime Lake 6 Unnamed Streams Seep Discharge Mitigation Corrective Measures Study</i>	4/20/2017 (1726410)	Comments 8/7/2017 (672745)	<ul style="list-style-type: none"> <li>Evaluation of technologies, description of selected corrective measure and summary of design data requirements.</li> </ul>
			2017 PPG, <i>Lime Lake 6 Corrective Measures Implementation Pre-Design Investigation Work Plan</i>	9/21/2017 (861282)	10/24/2017 (713318)	<ul style="list-style-type: none"> <li>Work plan for pre-design data collection.</li> </ul>



Media Focus Area (MFA)	2010 Cat.	2020 Cat.	Document Title	Date (eDoc #)	Ohio EPA Approval Date (eDoc #)	Inspection, Monitoring, Reporting Requirements (and/or Comments)
Lime Lake 6	3	3	2019 Arcadis, <i>Pre-Design Investigation Lime Lake 6 Unnamed Streams Seep Discharge Mitigation Corrective Measures Implementation</i>	3/14/2019 (1024114)	N/A	<ul style="list-style-type: none"> <li>Investigation results used in design of the corrective measures. (Verbal comments from Ohio EPA received regarding slope stability)</li> </ul>
			2020 Arcadis, <i>Preliminary Design for Lime Lake 6 Unnamed Stream Seep Discharge Mitigation Corrective Action</i>	8/3/2020 (1435417) Response to comments: 1/13/2021 (1496358)	Comments: 10/5/2020 (1443462) 5/11/2021 (1566137)	<ul style="list-style-type: none"> <li>Preliminary Design to mitigate seep discharge into streams. Response to comments included revised preliminary design drawings.</li> </ul>
			2020 MRCE, <i>Geotechnical Investigation Work Plan (Lime Lake 6)</i>	9/10/2020 (1435418)	N/A	<ul style="list-style-type: none"> <li>Results of investigations completed in 2018 and 2020.</li> <li>Demonstrated that the existing slopes have acceptable factors of safety (stable).</li> </ul>
			2021 MRCE, <i>Slope Stability Review and Analysis, Lime Lake 6</i>	5/6/2021 (1576419)	6/23/2021 (via email) (1686414)	

Aptim – Aptim Environmental & Infrastructure, Inc.  
Arcadis – Arcadis U.S., Inc.  
Cat. – Category  
CB&I – CB&I Environmental & Infrastructure, Inc.  
CSM – Conceptual Site Model  
DNAPL – Dense non-aqueous phase liquid  
Eastman Cherrington – Eastman Cherrington Environmental  
Entact – Entact, LLC  
EPA – Environment Protection Agency  
ERA – Ecological Risk Assessment  
ERM – ERM Consulting & Engineering  
IGWMP – Integrated Groundwater Monitoring Program  
IT – IT Corporation  
MRCE – Mueser Rutledge Consulting Engineers PLLC  
n/a - not applicable  
N/A – No record of approval (either not available or no response from the agency)  
OM&M – Operation, Maintenance & Monitoring  
PPG – PPG Industries, Inc.  
Shaw – Shaw Environmental, Inc.  
SWMU – Solid Waste Management Unit  
Tetra Tech – Tetra Tech, Inc.  
Timmerman – Timmerman Geotechnical Group, Inc.  
WMU – Waste Management Unit

**Table J-3 (Former Table 1 in the 2010 Renewal Permit)**

**Single Chemical Groundwater Cleanup Standards and Recommendations for Multi-Chemical Adjustments**

**PPG Industries, Inc., Barberton, Ohio (Revised October 30, 2012)**

Unique List of Chemicals <sup>a</sup>	MCL <sup>b</sup>	Groundwater Cleanup Standard (GUPNS) <sup>c</sup> (Noncarcinogen)	Groundwater Cleanup Standard (GUPCS) <sup>d</sup> (Carcinogen)	Recommended Lowest Standard <sup>h</sup>	Standard Basis
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
1,1,1,2-TETRACHLOROETHANE	---	470	56	56	GUPNS/GUPCS
1,1,1-TRICHLOROETHANE	200	MCL	MCL	200	MCL
1,1,2,2-TETRACHLOROETHANE	---	930	7	7	GUPNS/GUPCS
1,1,2-TRICHLOROETHANE	5	MCL	MCL	5	MCL
1,1-DICHLOROETHANE	---	2600	250	250	GUPNS/GUPCS
1,1-DICHLOROETHENE	7	MCL	MCL	7	MCL
1,2,3,5-TETRACHLOROBENZENE	---	1.2	NA	1.2	RSL <sup>e</sup> – surrogate
1,2,3-TRICHLOROBENZENE	---	5.2	NA	5.2	RSL <sup>e</sup>
1,2,3-TRICHLOROPROPANE	---	0.62	0.0065	0.0065	RSL <sup>e,f</sup>
1,2,4,5-TETRACHLOROBENZENE	---	1.2	NA	1.2	RSL <sup>e</sup>
1,2,4-TRICHLOROBENZENE	70	MCL	MCL	70	MCL
1,2-DICHLOROBENZENE	600	MCL	MCL	600	MCL
1,2-DICHLOROETHANE	5	MCL	MCL	5	MCL
1,2-DICHLOROPROPANE	5	MCL	MCL	5	MCL
1,3-DICHLOROBENZENE	75	MCL	MCL	75	MCL – surrogate
1,4-DICHLOROBENZENE	75	MCL	MCL	75	MCL
1,4-DIOXANE	---	1600	140	140	GUPNS/GUPCS
2,3,4,6-TETRACHLOROPHENOL	---	170	NA	170	RSL <sup>e</sup>
2,4-DICHLOROPHENOL	---	35	NA	35	RSL <sup>e</sup>
2,4-DIMETHYLPHENOL	---	310	NA	310	GUPNS

Unique List of Chemicals <sup>a</sup>	MCL <sup>b</sup>	Groundwater Cleanup Standard (GUPNS) <sup>c</sup> (Noncarcinogen)	Groundwater Cleanup Standard (GUPCS) <sup>d</sup> (Carcinogen)	Recommended Lowest Standard <sup>h</sup>	Standard Basis
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
2,6-DICHLOROPHENOL	---	35	NA	35	RSL <sup>e</sup> – surrogate
2-BUTANONE (MEK)	---	8900	NA	8900	GUPNS
2-CHLOROPHENOL	---	71	NA	71	RSL <sup>e</sup>
2-HEXANONE	---	34	NA	34	RSL <sup>e</sup>
2-METHYLPHENOL	---	790	NA	790	GUPNS
3-METHYLPHENOL	---	790	NA	790	GUPNS
4,4'-DDD	---	22	3.5	3.5	GUPNS/GUPCS
4,4'-DDE	---	NA	2.6	2.6	GUPCS
4,4'-DDT	---	4.8	2	2	GUPNS/GUPCS
4-CHLOROANILINE	---	59	3.2	3.2	RSL <sup>e,f</sup>
4-METHYL-2-PENTANONE	---	1200	NA	1200	GUPNS
4-METHYLPHENOL	---	79	NA	79	GUPNS
ACETONE	---	14000	NA	14000	GUPNS
ACETONITRILE	---	130	NA	130	RSL <sup>e</sup>
ACETOPHENONE	---	1600	NA	1600	GUPNS
ALPHA-BHC	---	73	0.062	0.062	RSL <sup>e,f</sup>
ALPHA-CHLORDANE	2	MCL	MCL	2	MCL – surrogate
ALUMINUM – DISSOLVED	---	16000	NA	1240/31	Background <sup>g</sup>
ANILINE	---	110	280	110	GUPNS/GUPCS
ANTIMONY – DISSOLVED	6	MCL	MCL	19/21	Background <sup>g</sup>
ARSENIC – DISSOLVED	10	MCL	MCL	10	MCL
BARIUM – DISSOLVED	2000	MCL	MCL	2000	MCL
BENZENE	5	MCL	MCL	5	MCL
BENZYL ALCOHOL	---	1500	NA	1500	RSL <sup>e</sup>

Unique List of Chemicals <sup>a</sup>	MCL <sup>b</sup>	Groundwater Cleanup Standard (GUPNS) <sup>c</sup> (Noncarcinogen)	Groundwater Cleanup Standard (GUPCS) <sup>d</sup> (Carcinogen)	Recommended Lowest Standard <sup>h</sup>	Standard Basis
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
BERYLLIUM – DISSOLVED	4	MCL	MCL	4	MCL
BETA-BHC	---	NA	0.22	0.22	RSL <sup>f</sup>
BIS(2-CHLOROETHYL) ETHER	---	NA	0.12	0.12	RSL <sup>f</sup>
BIS(2-ETHYLHEXYL) PHTHALATE	6	MCL	MCL	6	MCL
CADMIUM – DISSOLVED	5	MCL	MCL	4/6	Background <sup>g</sup>
CARBON DISULFIDE	---	1400	NA	1400	GUPNS
CARBON TETRACHLORIDE	5	MCL	MCL	5	MCL
CHLORDANE	2	MCL	MCL	2	MCL
CHLORIDE	---	NA	NA	85000/126000	Background <sup>g</sup>
CHLOROBENZENE	100	MCL	MCL	100	MCL
CHLOROETHANE	---	6200	550	550	GUPNS/GUPCS
CHLOROFORM	80	MCL	MCL	80	MCL
CHLOROMETHANE	---	190	NA	190	RSL <sup>e</sup>
CIS-1,2-DICHLOROETHENE	70	MCL	MCL	70	MCL
COBALT – DISSOLVED	---	320	NA	10/13	Background <sup>g</sup>
COPPER – DISSOLVED	1300	MCL	MCL	1300	MCL
CYANIDE	200	MCL	MCL	200	MCL
DELTA-BHC	---	73	0.062	0.062	RSL <sup>e,f</sup> – surrogate
DICHLOROMETHANE	5	MCL	MCL	5	MCL
DIELDRIN	---	0.28	0.015	0.015	RSL <sup>e,f</sup>
DIETHYL PHTHALATE	---	13000	NA	13000	GUPNS
DI-N-OCTYL PHTHALATE	---	630	NA	630	GUPNS
ENDOSULFAN II	---	78	NA	78	RSL <sup>e</sup> – surrogate
ENDRIN	2	MCL	MCL	2	MCL

Unique List of Chemicals <sup>a</sup>	MCL <sup>b</sup>	Groundwater Cleanup Standard (GUPNS) <sup>c</sup> (Noncarcinogen)	Groundwater Cleanup Standard (GUPCS) <sup>d</sup> (Carcinogen)	Recommended Lowest Standard <sup>h</sup>	Standard Basis
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
ENDRIN ALDEHYDE	2	MCL	MCL	2	MCL – surrogate
ENDRIN KETONE	2	MCL	MCL	2	MCL – surrogate
ETHYL BENZENE	700	MCL	MCL	700	MCL
GAMMA-BHC (LINDANE)	0.2	MCL	MCL	0.2	MCL
GAMMA-CHLORDANE	2	MCL	MCL	2	MCL – surrogate
HEPTACHLOR	0.4	MCL	MCL	0.4	MCL
HEXACHLOROBENZENE	1	MCL	MCL	1	MCL
HEXACHLOROBUTADIENE	---	4.7	2.6	2.6	RSL <sup>e,f</sup>
HEXACHLOROETHANE	---	15	100	15	GUPNS/GUPCS
INDENO(1,2,3-CD)PYRENE	---	NA	0.34	0.34	GUPCS
IRON – DISSOLVED	---	11000	NA	1570/3400	Background <sup>g</sup>
ISOBUTYL ALCOHOL	---	4700	NA	4700	GUPNS
ISOPHORONE	---	3200	1700	1700	GUPNS/GUPCS
LEAD – DISSOLVED	15	MCL	MCL	15	MCL
MANGANESE – DISSOLVED	---	320	NA	1274/2390	Background <sup>g</sup>
MERCURY – DISSOLVED	2	MCL	MCL	2	MCL
METHOXYCHLOR	40	MCL	MCL	40	MCL
METHYL METHACRYLATE	---	1400	NA	1400	RSL <sup>e</sup>
NAPHTHALENE	---	67	100	67	GUPNS/GUPCS
NICKEL – DISSOLVED	---	320	NA	43/12	Background <sup>g</sup>
PENTACHLOROBENZENE	---	2.3	NA	2.3	RSL <sup>e</sup>
PENTACHLORONITROBENZENE	---	19	1	1	RSL <sup>e,f</sup>
PHENOL	---	4700	NA	4700	GUPNS
SELENIUM – DISSOLVED	50	MCL	MCL	50	MCL

Unique List of Chemicals <sup>a</sup>	MCL <sup>b</sup>	Groundwater Cleanup Standard (GUPNS) <sup>c</sup> (Noncarcinogen)	Groundwater Cleanup Standard (GUPCS) <sup>d</sup> (Carcinogen)	Recommended Lowest Standard <sup>h</sup>	Standard Basis
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
STYRENE	100	MCL	MCL	100	MCL
TETRACHLOROETHENE	5	MCL	MCL	5	MCL
THALLIUM – DISSOLVED	2	MCL	MCL	6/12.3	Background <sup>g</sup>
TOLUENE	1000	MCL	MCL	1000	MCL
TRANS-1,2-DICHLOROETHENE	100	MCL	MCL	100	MCL
TRICHLOROETHENE	5	MCL	MCL	5	MCL
VINYL CHLORIDE	2	MCL	MCL	2	MCL
XYLENE	10000	MCL	MCL	10000	MCL

<sup>a</sup> This list of chemicals represents the chemicals detected in PPG Barberton groundwater between 2003 and 2011 and on Table 1 from the September 2010 OEPA Permit.

<sup>b</sup> The maximum contaminant levels (MCLs) are from USEPA's Regional Screening Level (RSL) Table, published May 2012.

<sup>c</sup> The OEPA Non-carcinogenic Single Chemical Unrestricted Potable Use Standard (GUPNS) is from OAC 3745-300-08. Note GUPNS are based on a target hazard of 1.0, unless not available, then the RSL was used. NA = not available.

<sup>d</sup> The OEPA Carcinogenic Single Chemical Unrestricted Potable Use Standard (GUPCS) is from OAC 3745-300-08. Note GUPCS are based on a target cancer risk of 1E-05, unless not available, then the RSL was used. NA = not available.

<sup>e</sup> The USEPA Noncarcinogenic Tapwater SL, May 2012. Note: Noncarcinogenic SLs are based on a target hazard of 1.0.

<sup>f</sup> The USEPA Carcinogenic Tapwater SL, May 2012. Note: Carcinogenic SLs are adjusted by a factor of 10 to reflect a target cancer risk of 1E-05.

<sup>g</sup> Site-specific upper limit background (BG) concentrations are presented for glacial outwash and bedrock groundwater, from Table E.8-1 in the 1997 RFI Report.

<sup>h</sup> The current recommended cleanup standard is selected based on the following hierarchy: (1) the MCL, (2) the OEPA GUPNS or GUPCS, or (3) the USEPA SLs.

If the background value is higher than the MCL or the OEPA or USEPA values, it was selected as the recommended value. Note: Background will be addressed Area by Area. If no MCL exists for an inorganic chemical, background values are listed in the Recommended Lowest Standard column; **however, PPG may propose alternative Standards at a future date under OAC 3745-54-94 (B), such as risk-based values that are greater than background.**

Surrogates were selected as follows:

- Chlordane MCL for alpha- and gamma-Chlordane
- Endrin MCL for Endrin aldehyde and Endrin ketone
- 1,2,4,5-Tetrachlorobenzene RSL for 1,2,3,5-Tetrachlorobenzene
- 1,4-Dichlorobenzene MCL for 1,3-Dichlorobenzene
- 2,4-Dichlorophenol RSL for 2,6-dichlorophenol
- alpha-BHC RSL for delta-BHC
- Endosulfan RSL for Endosulfan II.

In the future, the generic groundwater clean-up standards will follow the Ohio EPA hierarchy in effect at that time.

Using Groundwater Cleanup Standard (GCS) for Area-by-Area Cleanup Numbers:

The single chemical GCS in the table have been determined to be applicable for PPG Barberton. To estimate cleanup numbers for a given Area, chemicals with additive affects are considered as follows:

- 1) Chemicals with MCLs require no adjustment and are eliminated from multi-chemical adjustments.
- 2) Inorganic chemicals at levels equal to or below the background levels are eliminated from multi-chemical adjustments. Note: background will be evaluated Area by Area.
- 3) Highly censored data sets will be evaluated on a case-by-case basis, since the screening of censored data depends on many specific factors, including the number of samples (wells), the number of observations (from a given well), and the quality of the data. If 20 or more samples are available, the constituent may be eliminated if the detection frequency is 5% or lower.
- 4) All chemicals from a given Area with Noncarcinogenic Cleanup Standards should be counted and the total number then divided into each individual Noncarcinogenic Standard to determine the appropriate Noncarcinogenic GCS for each chemical in that Area.

Example Equations:

Adjusted Standard for Noncarcinogens =

$$\frac{\text{Recommended Noncarcinogenic Standard}_{\text{Chemical A} \dots \text{Z}}}{\text{Total number of chemicals with Noncarcinogenic Recommended Standards}}$$

- 5) All chemicals from a given Area with Carcinogenic Cleanup Standards should be counted and the total number then divided into each individual Carcinogenic Standard to determine the appropriate Carcinogenic GCS for each chemical in that Area.

Example Equations:



Adjusted Standard for Carcinogens =

Recommended Carcinogenic Standard  $\frac{\text{Chemical A} \dots \text{Z}}{\text{Total number of chemicals with Carcinogenic Recommended Standards}}$

- 6) For chemicals with both Noncarcinogenic and Carcinogenic GCS, the lowest value from steps 4 and 5 should be selected as the adjusted GCS for the area.

Using GCNs for a determination of No Further Action:

To determine if no further action is necessary at an Area:

- 1) Create a list of COCs for the Area.
- 2) Chemicals with MCLs are required to be less than the MCL.
- 3) Determine the exposure point concentration for each COC (i.e., the 95% UCL or maximum concentration).
- 4) For chemicals without MCLs, set up two equations, one to determine the cumulative cancer risk and the other to determine the cumulative noncancer hazard.

The cancer equation is:

$$\text{Risk} = [(CW_a/\text{GUPCS}_a) + (CW_b/\text{GUPCS}_b) + \dots + (CW_x/\text{GUPCS}_x)] \times 10^{-5}$$

The noncancer equation is:

$$\text{Hazard Index} = (CW_a/\text{GUPNS}_a) + (CW_b/\text{GUPNS}_b) + \dots + (CW_x/\text{GUPNS}_x) \times 1.0$$

Where

$CW_{a \dots x}$  = the groundwater concentration of chemical a through x

$\text{GUPCS}_{a \dots x}$  = Carcinogenic Single Chemical Unrestricted Potable Use Standard for chemical a through x

$\text{GUPNS}_{a \dots x}$  = Noncarcinogenic Single Chemical Unrestricted Potable Use Standard for chemical a through x

**Table J-4 (Former Table 2 in the 2010 Renewal Permit)**

**Monitoring Wells Information**

The following monitoring wells are included in the Integrated Groundwater Monitoring Program (IGWMP). Several aquifer zones are monitored including shallow, mid outwash, deep outwash, perched groundwater, and the base of the Sharon Conglomerate (BSC). Some wells are used for static water level (SWL) measurements, only.

Monitoring Well ID	Depth Monitored	Analytes	Rationale for Inclusion
NP-05A	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	MNA
NP-29V2	Shallow GW	Group B	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

Monitoring Well ID	Depth Monitored	Analytes	Rationale for Inclusion
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
LL1-22A	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 (Replaced by LL2-06B-R)	Shallow GW	Group B	Source Area, MNA
LL2-08A	Shallow GW	Group A	MNA
LL2-08AV1	Shallow GW	Group A	MNA
LL2-08AV2	Shallow GW	Group A	MNA
LL2-11A	Shallow GW	Group A	MNA
LL2-12A	Shallow GW	Group A	MNA
LL2-14B* (Replaced by LL2-14-R)	Shallow GW	Group B	Source Area
LL3-02A	Shallow GW	Group A	MNA
LL3-04*	Shallow GW	Group A & D	MNA, Total Phosphorous
LL3-05	Shallow GW	Group A	MNA

Monitoring Well ID	Depth Monitored	Analytes	Rationale for Inclusion
LL3-06	Shallow GW	Group A	MNA
LL3-12A	Shallow GW	Group A & D	MNA, Total Phosphorous
LL4-01	Shallow GW	Group C	MNA, Post Reclamation
LL4-02A	Misc. Perched	Groups A & C	MNA, Post Reclamation
LL4-04	Shallow GW	Group C	MNA, Post Reclamation
LL4-05	Shallow GW	Groups A & C	MNA, Post Reclamation
LL4-09	Shallow GW	Groups A & C	MNA, Post Reclamation
LL4-12A	Shallow GW	Group C	MNA, Post Reclamation
LL4-13A	Shallow GW	Groups A, C, & D	MNA, Post Reclamation, Total Phosphorous
LL4-14A	Shallow GW	Group C & D	MNA, Post Reclamation, Total Phosphorous
LL4-15	Shallow GW	Groups A & C	MNA, Post Reclamation
LL4-18A	Shallow GW	Group C	MNA, Post Reclamation
LL5-01*	Shallow GW	Groups A & C	MNA, Post Reclamation
LL5-02	Shallow GW	Group A	MNA, Post Reclamation
LL5-04	Shallow GW	Groups A & C	MNA, Post Reclamation
LL5-05	Shallow GW	Group C & D	MNA, Post Reclamation, Total Phosphorous
LL5-09A*	Shallow GW	Group A & D	MNA, Post Reclamation, Total Phosphorous
LL5-10	Shallow GW	Groups A & C	MNA, Post Reclamation
LL5-13B	Shallow GW	Groups A & C	MNA, Post Reclamation
LL5-17B*	Shallow GW	Groups A & C	MNA, Post Reclamation
LL5-21A	Shallow GW	Group C	MNA, Post Reclamation

Monitoring Well ID	Depth Monitored	Analytes	Rationale for Inclusion
LL5-22A	Shallow GW	None	SWL, only
LL6-02	Shallow GW	None	SWL, only
LL6-04A	Shallow GW	Group A	MNA
LL6-06	Shallow GW	Group C	MNA, Post Reclamation
LL6-07	Shallow GW	Group C	MNA, Post Reclamation
LL6-08	Shallow GW	Group C	MNA, Post Reclamation
LL6-09	Shallow GW	Group C & D	MNA, Post Reclamation, Total Phosphorous
LL6-19A	Shallow GW	Group C & D	MNA, Post Reclamation, Total Phosphorous
LL6-21A	Shallow GW	Group A & D	MNA, Total Phosphorous
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

Monitoring Well ID	Depth Monitored	Analytes	Rationale for Inclusion
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	MNA
SP-36AV1	Shallow GW	Group A	MNA
SP-36AV2	Shallow GW	Group A	MNA
SP-43A	Shallow GW	None	SWL, only
SQ-02	Shallow GW	Group A	Plume Migration, MNA
SQ-02V1	Shallow GW	Group A	Plume Migration, MNA
SQ-02V2	Shallow GW	Group A	Plume Migration, 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

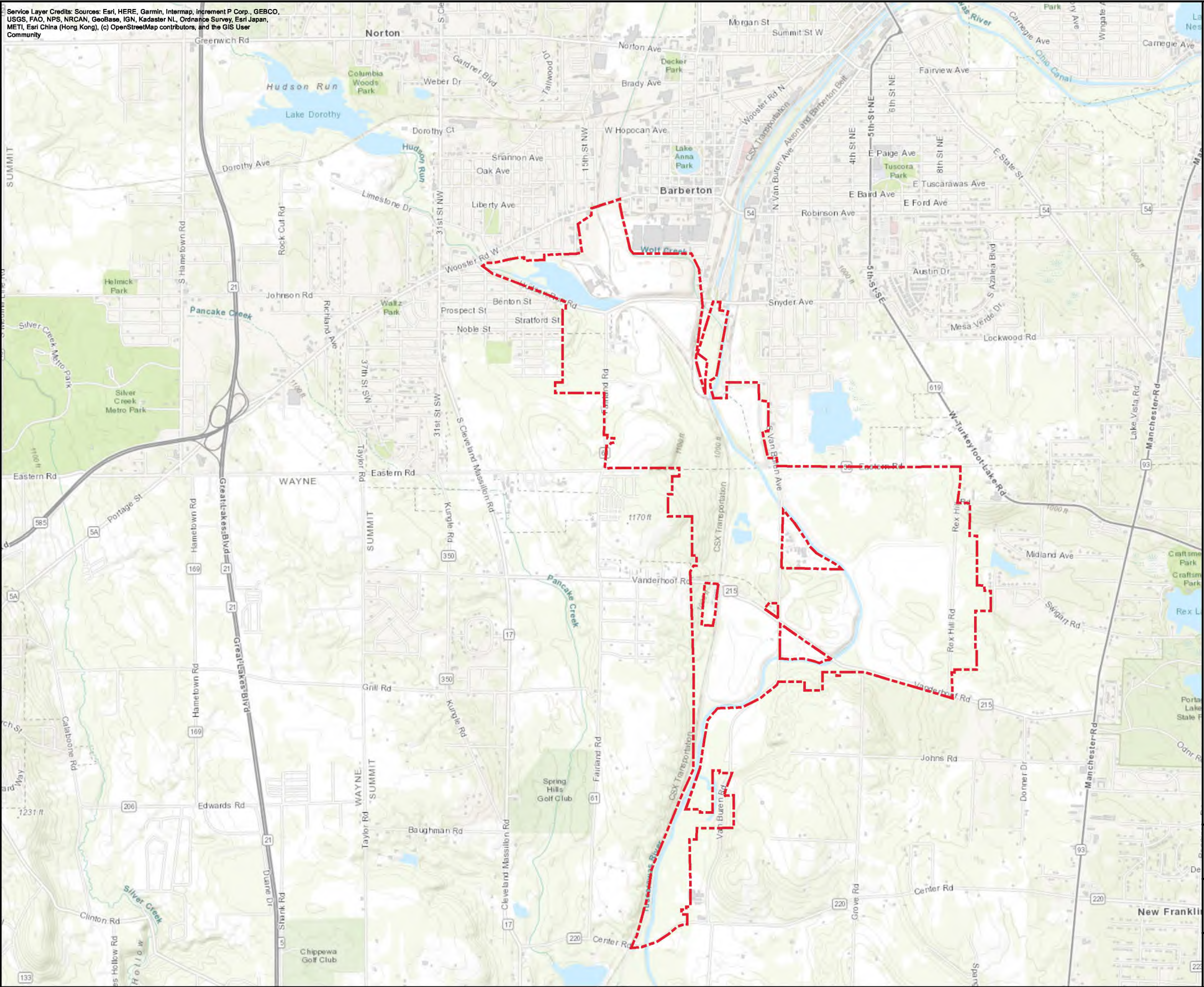
- Group A: Analytes, including Appendix IX VOLATILE ORGANIC COMPOUNDS (VOC), plus cis-1,2-dichloroethene, selected dissolved Target Analyte List (TAL) metals (arsenic, manganese, nickel, lead, copper, antimony, and thallium), chloride, pH, TDS, and intrinsic bioremediation/MNA indicator

analytes including dissolved gases (dissolved ethene, ethane and methane, total organic carbon, dissolved oxygen, dissolved ferrous iron, oxidation reduction potential, pH, nitrate/nitrite), 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.
- Group C: Four dissolved metals (arsenic, barium, calcium, and sodium), pH, specific conductance, TDS, alkalinity, chloride, nitrite, nitrate, TKN, sulfate, and ammonia.
- Group D: Total Phosphorous analysis (for lime lakes where digested sewage sludge was applied for surface reclamation).
- SWL, only. Wells with this designation are used to collect water level elevation data, only.
- Upper and lower perched zones are in the bedrock.

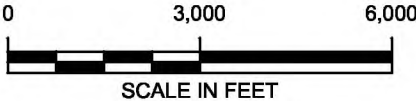


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**LEGEND**

 Property Boundary

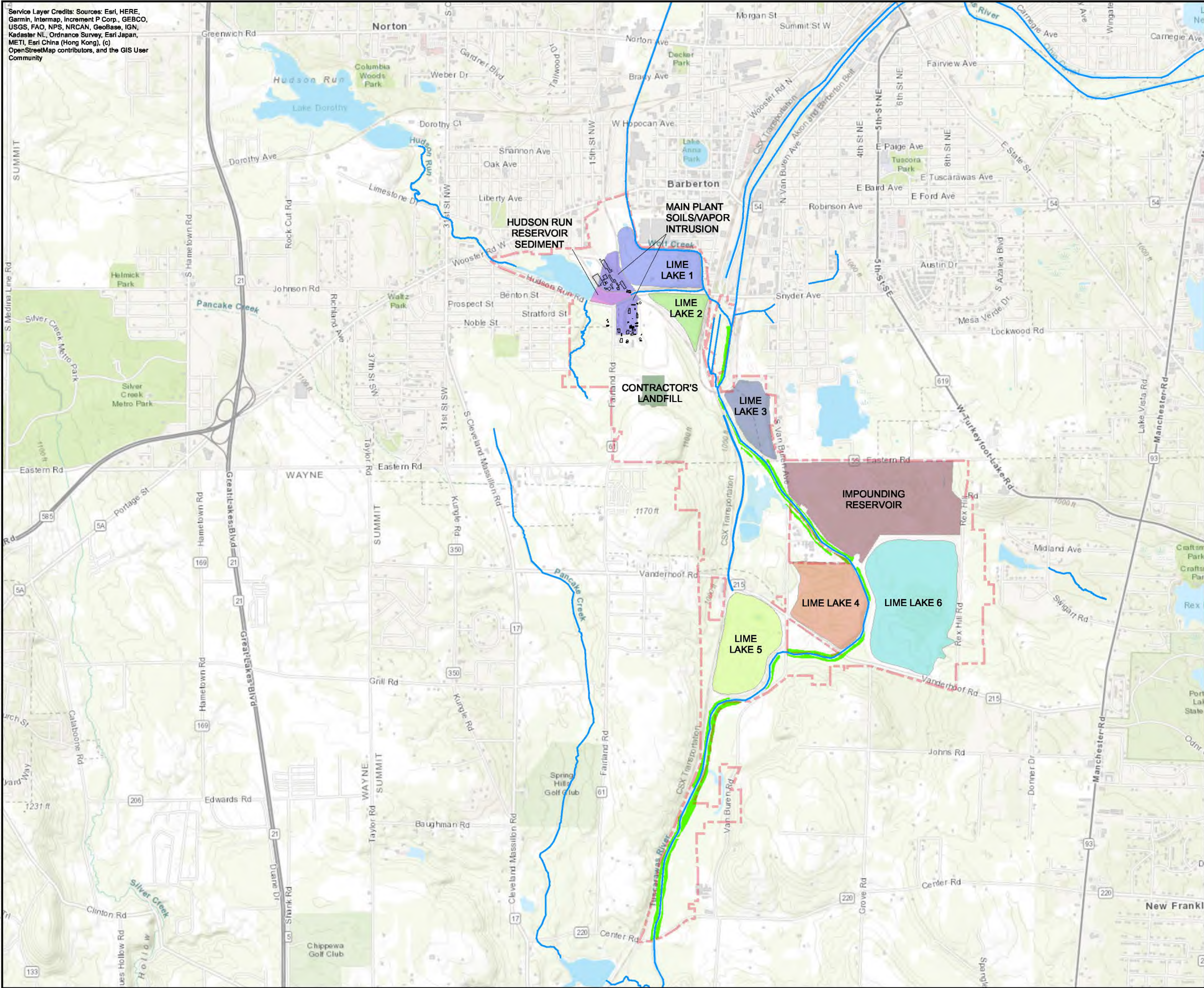


PPG BARBERTON  
BARBERTON, OHIO

**SITE LAYOUT**

FIGURE  
**J-1**



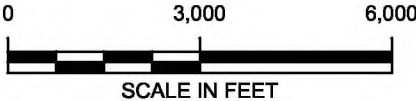


**LEGEND**

- Property Boundary
- Dredge Spoils Boundary

**MEDIA FOCUS AREAS**

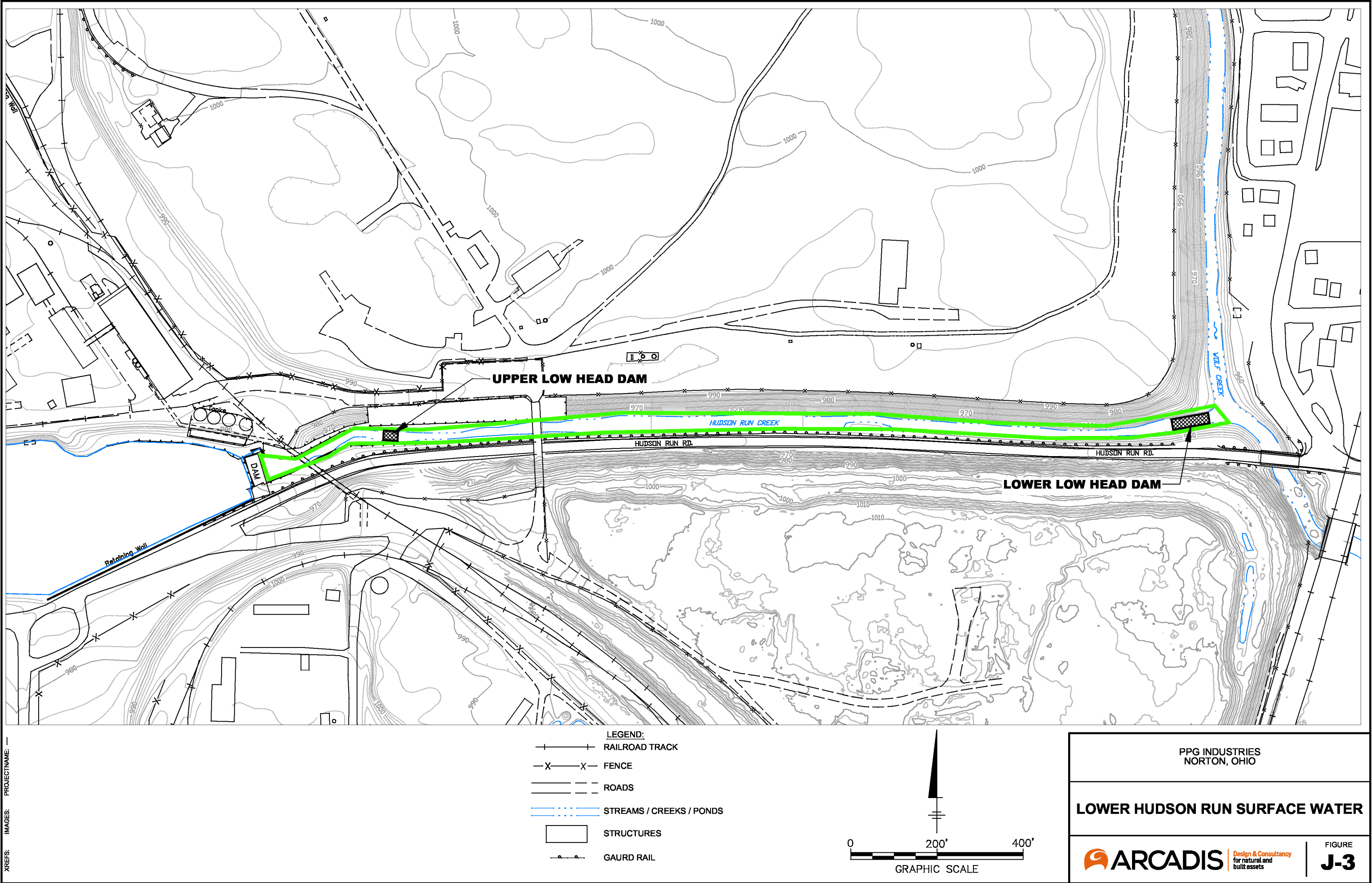
- Contractor's Landfill
- Hudson Run Reservoir Sediment
- Impounding Reservoir
- Main Plant Soils/Vapor Intrusion
- Lime Lake 1
- Lime Lake 2
- Lime Lake 3
- Lime Lake 4
- Lime Lake 5
- Lime Lake 6



PPG BARBERTON  
BARBERTON, OHIO

**MEDIA FOCUS AREA**







GAURD RAIL

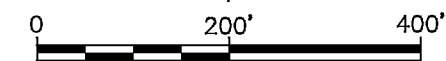
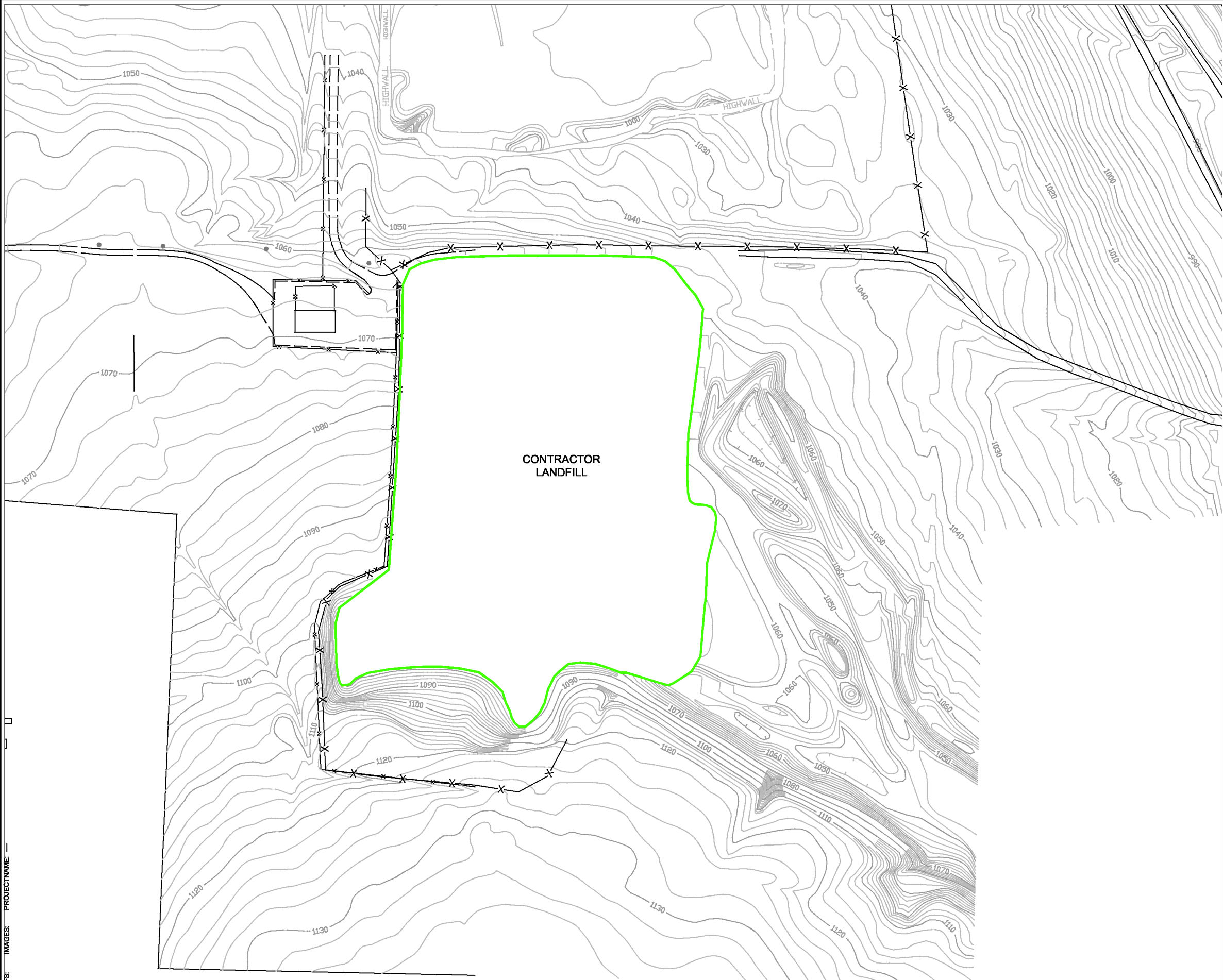


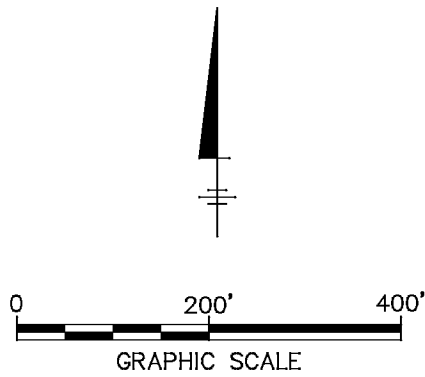
FIGURE  
**J-4**



CITY: COLUMBUS, OHIO DIV: GROUP: (MIDV) DB: (R. SMITH) LD: (Opt) PIC: (Opt) PM: (J. WRIGHT) TM: (Opt) LVR: (Opt) ON: "OFF" REF: "C:\Users\smith\min\360\Arcadis\ANA - PPG\Project Files\PPG BARBERTON\2020\09\04\366501-DWG\GMPA-CONTRACTOR LANDFILL.dwg" LAYOUT: LC-SYS SAVED: 1/5/2021 10:01 AM ACADVER: 23.1 S (LMS TECH) PAGES: 1/1 PLOTTED: 1/7/2021 11:48 AM BY: SMITH, BOB



- LEGEND:**
- X — X — FENCE
  - — — ROADS
  - STRUCTURES



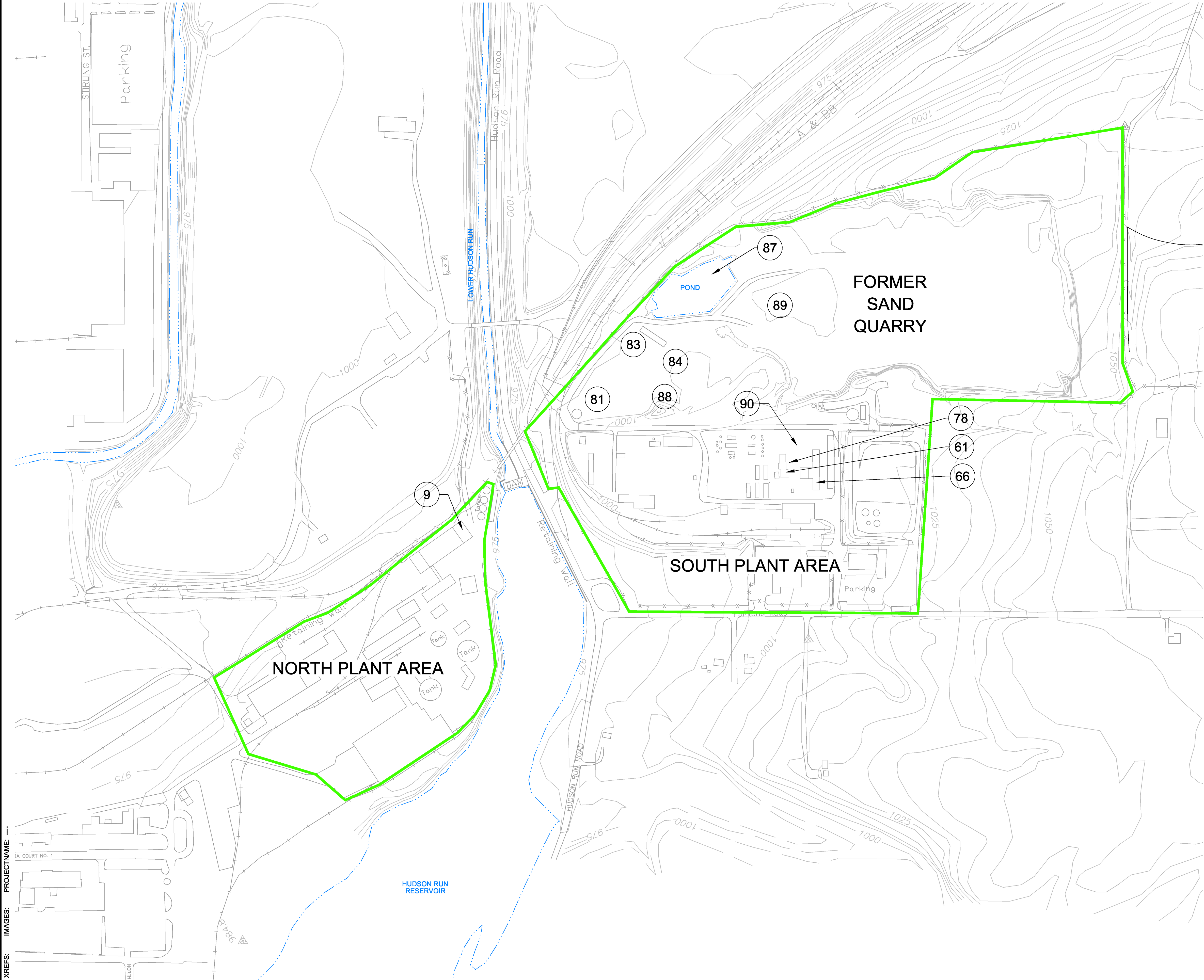
PPG INDUSTRIES  
NORTON, OHIO

**CONTRACTORS' LANDFILL**



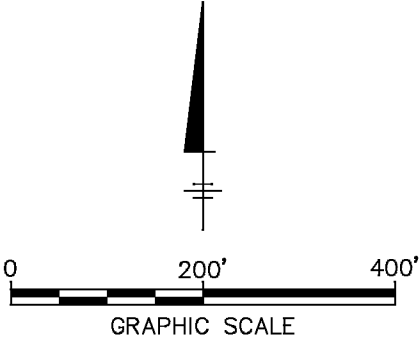
FIGURE  
**J-5**





REFERENCES	
SOLID WASTE MANAGEMENT UNIT (SWMU) No.	PAST AND PRESENT SOLID OR HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL AREAS - NORTH PLANT
9	MULTI PURPOSE PLANT FLOOR DRAINS AND SUMP

REFERENCES	
SOLID WASTE MANAGEMENT UNIT (SWMU) No.	PAST AND PRESENT SOLID OR HAZARDOUS WASTE TREATMENT, STORAGE, OR DISPOSAL AREAS - SOUTH PLANT
61	CHLOROFORMATE PLANT
66	FORMER CHLOROFORMATE WASTE RETENTION TANK
78	CR-38 PLANT
81	CATALYST SUMP AND OVERFLOW TANK
83	APC WASTEWATER TANKS
84	FORMER HWSS OUTDOOR CONTAINER STORAGE AREA
87	SAND QUARRY HOLDING BASIN
88	FORMER SAND QUARRY POND
89	FORMER CATALYST DETONATION AREA (FORMER RCRA REGULATED THERMAL TREATMENT - DECOMPOSITION UNIT)
90	FORMER TCE PLANT

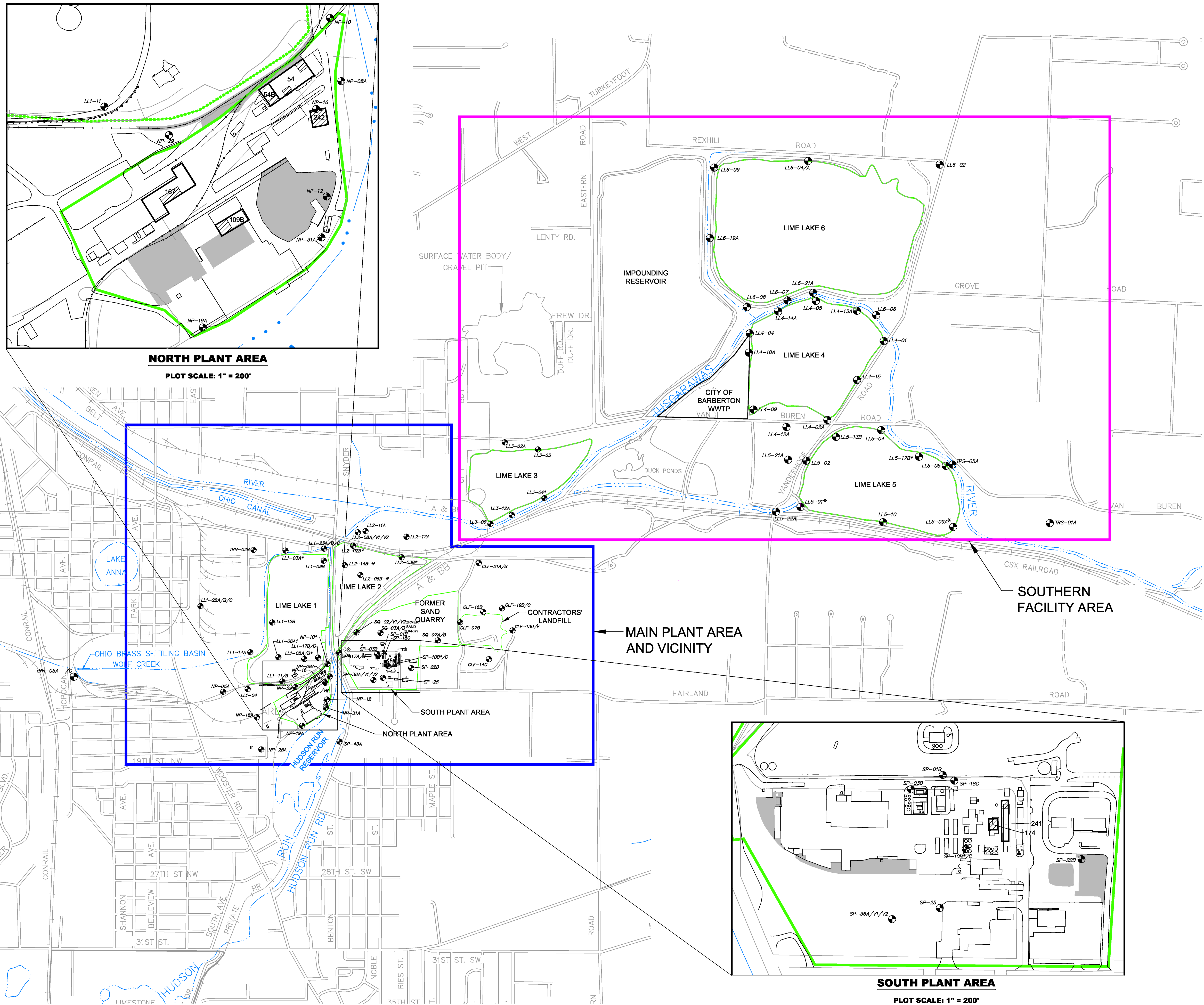


PPG INDUSTRIES  
NORTON, OHIO

MAIN PLANT SOILS



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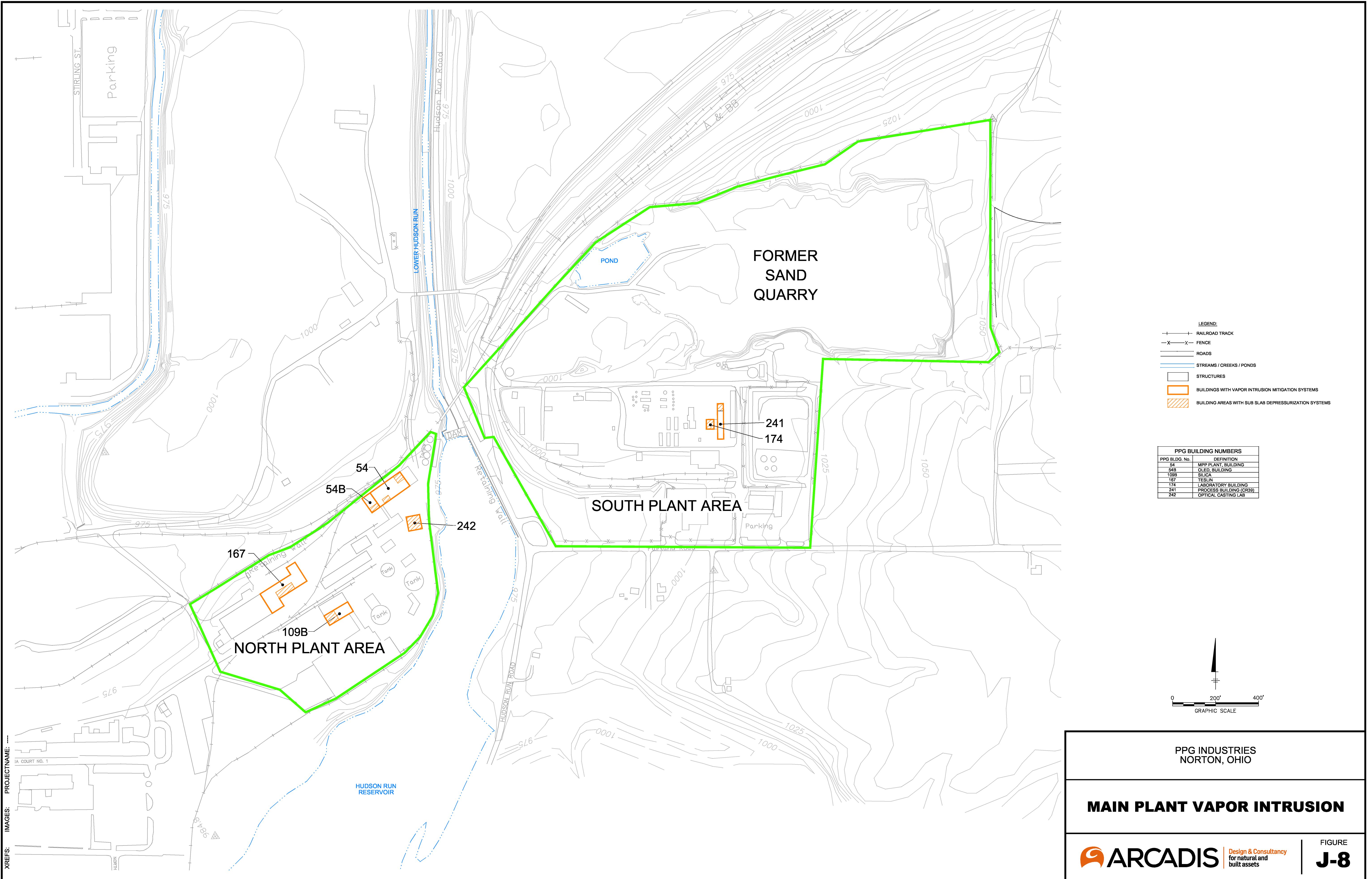


PPG INDUSTRIES  
NORTON, OHIO

**SITEWIDE GROUNDWATER**

FIGURE  
**J-7**







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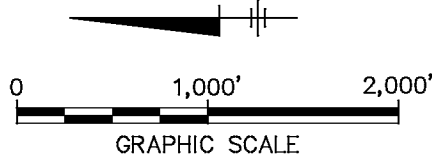
REFERENCE:

NOTES:

- STREET MAPPING PROVIDED BY THE SUMMIT COUNTY ENGINEERS OFFICE. STREET LINE REPRESENT THE CENTERLINE OF STREET.
- RIVER BOUNDARY IDENTIFIED DURING A RIVER SURVEY CONDUCTED OCTOBER, 2012. PORTIONS OF THE RIVER BOUNDARY IDENTIFIED IN OCTOBER, 2012 WERE REVISED PER THE SAMPLING EVENT IN JUNE, 2013.
- RIVER DREDGE SPOIL LOCATIONS/AREA TAKEN FROM RCRA FACILITY INVESTIGATION APPENDIX E, FIGURE 3.7-9, INTERNATIONAL TECHNOLOGY CORPORATION, FEBRUARY 1997.

LEDEND:

RIVER DREDGE SPOIL LOCATION MAPPED FROM JULY, 1966 AERIAL PHOTO

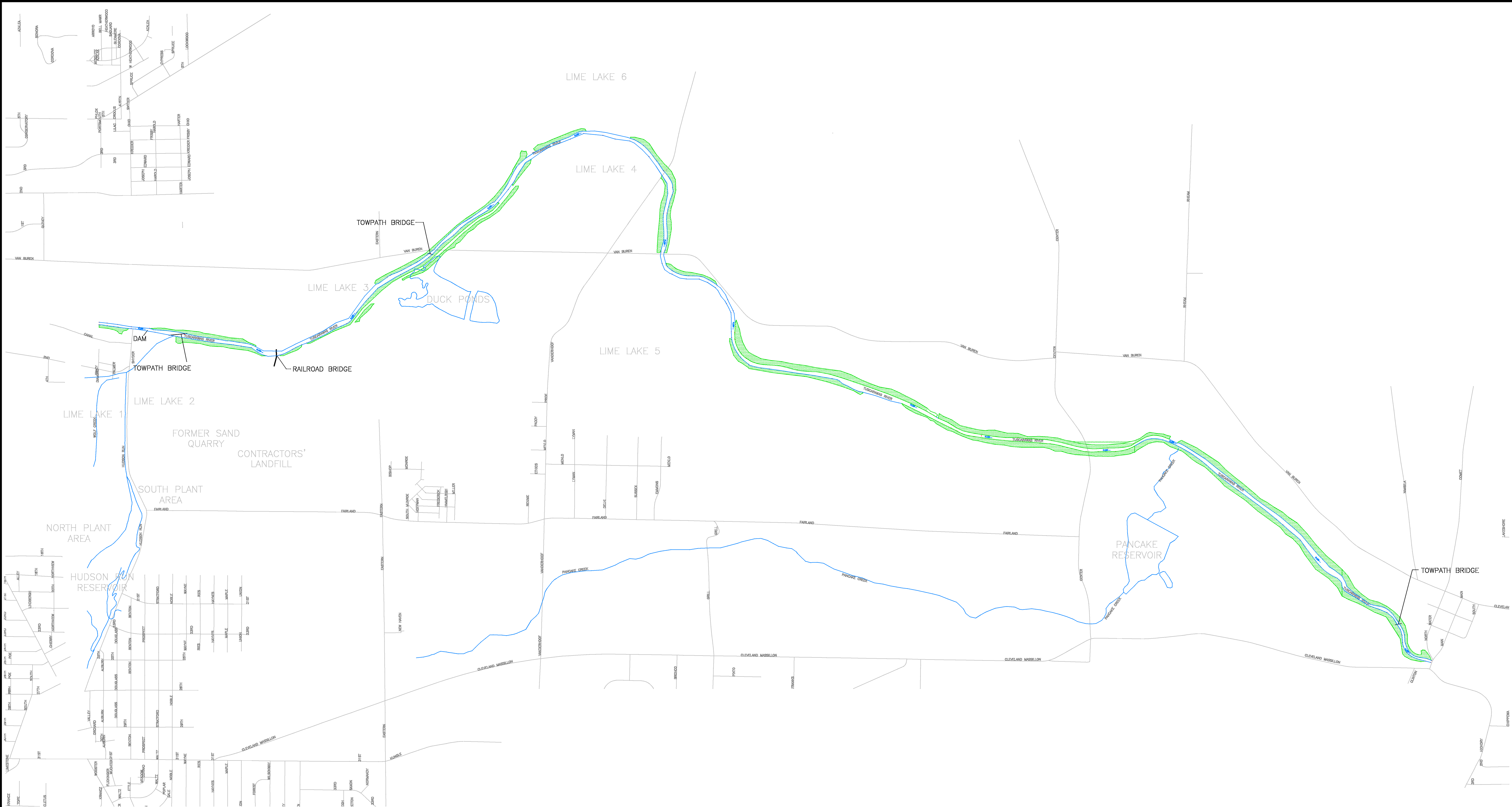


PPG INDUSTRIES  
NORTON, OHIO









TUSCARAWAS RIVER DREDGE SPOILS



FIGURE  
J-9





	HORIZONTAL WELL AND RISER
	HORIZONTAL WELL SCREEN
	RAILROAD TRACK
	FENCE
	ROADS
	STREAMS / CREEKS / PONDS
	STRUCTURES
	GUARD RAIL

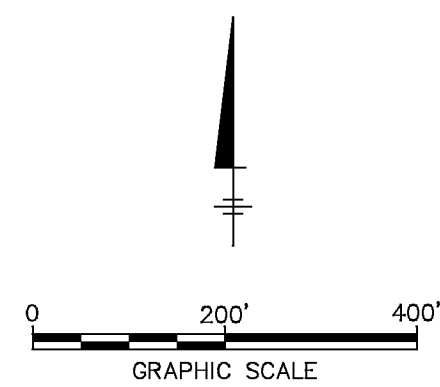
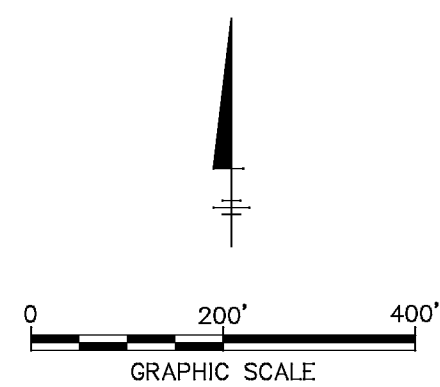


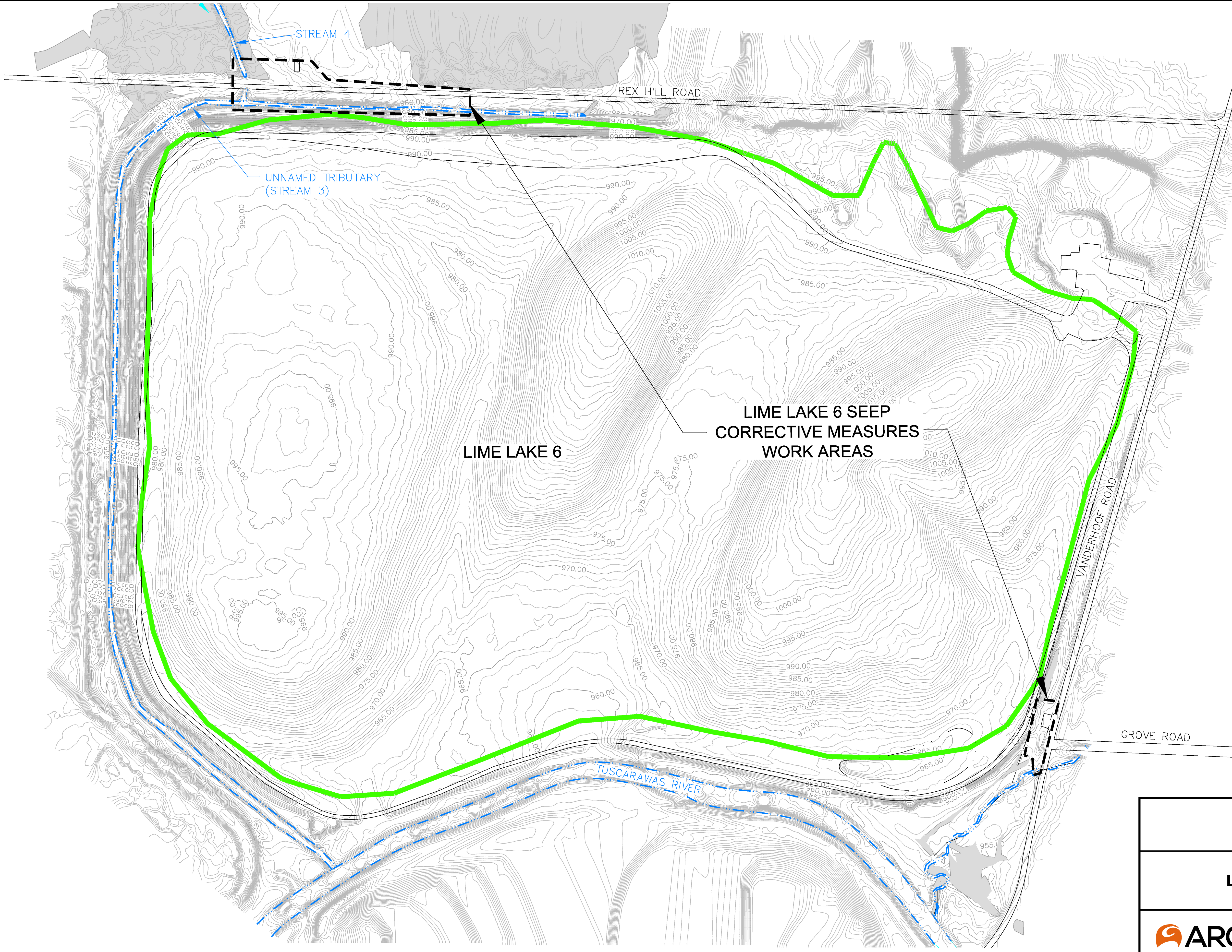
FIGURE  
**J-10**







CITY: COLUMBUS, OHIO DIV: GROUP/ENVCAD DE: (R. SMITH) LD: (Opt) PIC: (Opt) PM: (B. GOLLA) TM: (Opt) LXR: (Option) OFF: REF\*  
C:\Users\bmth\BIN\360\Arcadis\ANA - PPG\Project Files\PPG BARBERTON\2020\3004385501-DWG\MFA-LL6.dwg LAYOUT: LL6 SAVED: 1/7/2021 12:26 PM ACADVER: 23.1S (LWS TECH) PAGES: 1 OF 1 PLOT: 1/7/2021 2:57 PM BY: SMITH, BOB  
XREFS: IMAGES: PROJECTNAME: ---



**LEGEND:**

- ROADS
- STREAMS / CREEKS / PONDS

0 200' 400'  
GRAPHIC SCALE

PPG INDUSTRIES NORTON, OHIO	
LIME LAKE 6 SEEPS	
 <b>ARCADIS</b>	Design & Consultancy for natural and built assets
FIGURE <b>J-12</b>	




## **Section K: OTHER FEDERAL LAWS**

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, this section does not apply.

## Section L: PART B CERTIFICATION

The following statement is being provided and signed by a responsible corporate officer of PPG Industries, Inc., per OAC-3745-50-42 for the renewal of the Ohio Hazardous Waste Facility Installation and Operation Permit No. 02-77-0453 at PPG's Barberton, Ohio, facility (EPA ID No. OHD 004 198 917).

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*



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Signature

06/21/22

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Date

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**Tom Selleny**

Printed Name

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**Plant Manager**

Title

## **Section M: AIR EMISSION STANDARDS FOR PROCESS VENTS, EQUIPMENT LEAKS, TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS**

With the closure of the HWSB, PPG does not manage hazardous waste in permitted units. Therefore, the requirements of 40 CFR Part 264 Subparts AA, BB, and CC do not apply.

### **M-1 SUBPART AA**

This section is not applicable.

### **M-2 SUBPART BB**

This section is not applicable.

### **M-3 SUBPART CC**

With the closure of the HWSB, this section is not applicable.