FIRST EXPLANATION OF SIGNIFICANT DIFFERENCES
KOPPERS INC. GREEN SPRING FACILITY
GREEN SPRING, WEST VIRGINIA

I. INTRODUCTION

The West Virginia Department of Environmental Protection (WVDEP) has prepared this First Explanation of Significant Differences ("ESD") to explain to the public why it is modifying the selected corrective measures in the Final Decision for the former Koppers Inc. Green Spring Facility ("Facility" or "Site") in Green Spring, West Virginia (Figures 1 through 5). This ESD summarizes the information that supports the modifications and can be used to affirm that the selected corrective measures, as modified, are consistent with the criteria the WVDEP uses to evaluate corrective measures under the Resource Conservation and Recovery Act (RCRA) Corrective Action Program.

This ESD documents that the WVDEP is allowing for elimination of the groundwater and dense non-aqueous phase liquid (DNAPL) recovery component of the Hydrocarbon Sheen Containment System (System), applying changes to the Institutional Controls (ICs), and adding limited and terminable groundwater monitoring as part of the selected corrective measures to protect human health and the environment at the Facility. This ESD and the documents supporting its issuance will become part of the Administrative Record for the Facility.

II. SUMMARY OF SITE HISTORY, CONTAMINATION, AND THE SELECTED REMEDY

The 98-acre Facility, located in the eastern panhandle of West Virginia on the south bank of the North Branch Potomac River, produced wood-treated products, primarily for the railroad industry. The Facility boundary is in the shape of an irregular rectangle: the western site boundary is approximately 1,000 feet in length, the eastern boundary is approximately 750 feet wide, and is approximately 5,000 feet in length along the northern and southern boundaries as depicted in Figures 1 and 2 (Arcadis 2002). CSX Transportation, Inc. (CSXT) railroad tracks are located to the south and land owned by CSXT is to the north and east. To the southeast is the City of Green Spring, West Virginia and to the northeast is the North Branch Potomac River. The Facility included wastewater treatment system components, chemical storage areas, a wood treatment process area, a drip track area, a treated wood storage area, and undeveloped land. Koppers Inc. (Koppers) operated at the property most recently. Koppers ceased operations in September 2015 and decommissioned the facility. Koppers submitted a facility closure report (Koppers 2022), and the WVDEP approved it in August 2022 (WVDEP 2022).

In early 1911, the Baltimore and Ohio Railroad (B&O Railroad) began wood preserving operations at the Facility and operated the Facility until the Joyce Watkins Company assumed operations in 1932. In 1933, the operation of the Facility was contracted to Koppers Company, Inc. (KCI). On December 31, 1973, KCI purchased the Facility from B&O Railroad. On June 16, 1988, BNS, a Delaware Corporation, acquired greater than 90 percent of the outstanding shares of KCI. BNS was an indirect, wholly-owned subsidiary of Beazer PLC. In November 1988, BNS acquired the balance of outstanding KCI equity interest. On December 28, 1988, the Facility was sold to the newly formed Koppers Industries, Inc. (KII), a company not related to KCI or Beazer. BNS retained liability for environmental issues. On January 29, 1989, BNS merged with KCI, with KCI being the surviving entity, and the company name was changed to Beazer Materials and Science, Inc. (BM&S). On April 16, 1990, BM&S changed its name to Beazer East, Inc. On November 17, 1997, Beazer transferred liability for environmental issues to CSXT. On February 24, 2003, KII changed its name to Koppers [Key Environmental (Key) 2006]. On September 20, 2023, Koppers sold the Facility to Tanner Farms Depot, LLC (Tanner Farms).

The Facility used creosote in its wood treating process; however, from the late 1950s to the early 1960s, pentachlorophenol was used as an additive for wood treatment on a trial basis for a limited number of customers (Key 1995; Arcadis 2001). Since the early 1960s, numerous investigations and corrective actions have taken place at the Facility. Residual, immobile DNAPL remains at the Site, and the constituents of concern are benzene and naphthalene in groundwater. The applicable regulatory criteria for groundwater are the West Virginia De Minimis Standards of 5 micrograms per liter (µg/L) for benzene and 0.12 µg/L for naphthalene.

On October 5, 2013, the WVDEP issued a Statement of Basis (SB) in which a Final Remedy for the Facility was proposed. The proposed Final Remedy consisted of operation and maintenance of the System and ICs.

Consistent with public participation provisions under RCRA, the WVDEP requested comments from the public on the proposed Final Remedy. The 30-day public comment period began on October 5, 2013 and ended November 4, 2013. One comment was received by the WVDEP during the comment period and was addressed and incorporated into the Final Decision (WVDEP 2013). The comment resulted in a modification to the factual background. Based on the one comment received during the comment period, the WVDEP determined that it was not necessary to modify its proposed Final Remedy as set forth in the SB. The WVDEP did make a minor modification to the factual background.

Since the Final Decision was issued, conditions and the understanding of the Facility and CSXT property adjacent to the east of the Facility have changed. For example, the Koppers facility is no longer active, and additional site assessment activities were completed to re-evaluate the long-term strategy and remedy for the Site. Specifically, a WVDEP-approved (WVDEP 2015) pilot study was completed in 2015 and 2016 to gather data to support the hypothesis that the pumping component of the System was no longer necessary as the DNAPL at the Facility was no longer migrating or practicably recoverable. The results of the pilot test (Arcadis 2017) confirmed that the hypothesis was correct, and the WVDEP approved (WVDEP 2019) the recommendation to eliminate the pumping component of the System. The enhanced understanding of current conditions at the Facility that resulted from the data collected during the pilot test and subsequent monitoring support modified corrective measures as is outlined below.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR CURRENT CHANGES TO THE SELECTED CORRECTIVE MEASURES

This ESD modifies the selected corrective measures to allow for elimination of the groundwater and DNAPL recovery component of the System, changes to the ICs, and groundwater monitoring.

1. System Modification

The System was designed to protect the North Branch Potomac River from a creosote-based hydrocarbon sheen and contaminated groundwater. The System originally included a containment wall adjacent to the North Branch Potomac River, with a groundwater and DNAPL recovery component. In 2015 and 2016, in accordance with the Pilot Test Work Plan (Arcadis 2015), a pilot test was completed to:

- Evaluate the stability of the containment wall without the groundwater and DNAPL recovery component; and

- Evaluate DNAPL mobility to verify that DNAPL will not bypass the wall with the groundwater and DNAPL recovery component of the System deactivated.

In 2015, the WVDEP approved (WVDEP 2015) the Pilot Test Work Plan, which included deactivation of the groundwater and DNAPL recovery System components. The field activities and data evaluations that were completed for the pilot test were summarized in the 2017 Pilot Test Summary Report (Arcadis 2017). The Pilot Test concluded that the groundwater and DNAPL recovery system components are not necessary, and DNAPL is not practicably recoverable at the Site. Therefore, it was recommended that DNAPL recovery operations cease. Containment wall improvements and continued wall inspections were also recommended. In 2019, the WVDEP approved (WVDEP 2019) the recommendations in the Pilot Test Summary Report.

The containment wall associated with the System was left in place after the groundwater extraction component of the System ceased. As a conservative measure, the containment wall provides a physical barrier between trace, residual, immobile DNAPL at the Site and the North Branch Potomac River. Since wall installation in 2004, the gabion baskets had corroded. To maintain the integrity of the wall, stabilization activities (i.e., placement of riprap) were completed in 2020 in accordance with a permit from the United States Army Corps of Engineers (USACE 2020). An as-built drawing for the containment wall is included as Figure 5.

2. Institutional Controls

Per comments from the WVDEP (2018), in June and July of 2019, monitoring wells were installed to evaluate concentrations of benzene and naphthalene in groundwater at the point of compliance, the property boundary. The results of the groundwater monitoring activities indicated that DNAPL, dissolved phase benzene, and dissolved phase naphthalene have been delineated (Arcadis 2019). Additional groundwater monitoring was recommended.

In 2019, 2020, and 2021, groundwater sampling and DNAPL gauging events were completed (Arcadis 2020, 2021; Figures 3 and 4). The benzene and naphthalene concentrations detected in monitoring well MW-08 were above the West Virginia De Minimis Standards of 5 µg/L for benzene and 0.12 µg/L for naphthalene. While the concentrations of benzene and naphthalene in monitoring well MW-08 exceeded the screening levels, the area surrounding MW-08 is delineated. It was recommended that an Environmental Covenant, similar to the existing Environmental Covenant (Koppers, CSXT, WVDEP 2014) for the Facility, be established in the vicinity of monitoring well MW-08.

The restrictions in the Environmental Covenant will only permit industrial or commercial land use and impose restrictions on residential land use and groundwater withdrawal for purposes other than monitoring and remediation. The area that is proposed for restriction (Figure 3) is approximately 12.18 acres in size, is owned by CSXT, and includes railroad tracks, a road used to access the Site, a portion of the containment wall, and vacant land. The existing Environmental Covenant for the Site should also be amended consistent with West Virginia Code 22-22B-10 (amendment or termination by consent of an environmental covenant) to reflect the current owner (i.e., Tanner Farms Depot, LLC); the current, operational System components (i.e., containment wall portion and no groundwater extraction); and include a requirement for a vapor intrusion (VI) risk evaluation for areas within the former wood treatment process area/or areas with known impacts (Figures 2 and 3). If necessary, mitigation will be implemented prior to occupying buildings. Proposed language for the environmental covenants is as follows:

Any redevelopment of the Property shall require a vapor intrusion risk evaluation for areas

within the former wood treatment process area and areas with known impacts (Figures 2 and 3), and if the EPA's VI screening levels (VISLs)are exceeded for the risk evaluation scenarios being considered, then the installation of appropriate vapor intrusion risk mitigation measures (i.e., engineering controls) by properly trained and appropriately licensed personnel in full compliance with all applicable federal, state, and local laws, rules, regulations, and ordinances, shall be required. The vapor intrusion evaluation and design of any vapor intrusion mitigation/engineering control system must be approved by the WVDEP. Any persons excavating soils or working in trenches or underground shall be notified of possible hazardous vapors and advised to take appropriate precautions.

The amended covenant will need to be signed by the WVDEP, the former owner (Koppers), the current owner (Tanner Farms Depot, LLC), and CSXT. The new covenant will need to be signed by the WVDEP, Tanner Farms Depot, LLC, and CSXT. The amended and new covenants will be filed with the Hampshire County, West Virginia Land Records.

3. Groundwater Monitoring

This ESD acknowledges that the ultimate goal of the groundwater remedy at the Site is the protection of human health and the environment. Historic data demonstrated that natural attenuation is occurring at the Site. As a measure of demonstration of the effectiveness of the natural attenuation processes at work at the Site and the absence of off-site migration of main hydrocarbon risk drivers, groundwater sampling at monitoring wells R-04, MW-04, and LF-03R for analysis of benzene and naphthalene should be completed on a biennial basis. Two biennial sampling events will be completed by CSXT, and the need for additional monitoring will be re-evaluated based on the data collected. The results and recommendations associated with the biennial groundwater sampling will be submitted in a summary report after completion of the second biennial groundwater sampling event.

IV. MODIFIED CORRECTIVE MEASURES

The modified corrective measures for the facility consist of maintenance of the containment wall, ICs, and groundwater monitoring. The following is a summary of the modified corrective measures and the existing corrective measures that will continue to be implemented:

1. Containment Wall Maintenance

The containment wall component of the System was retained, improved, and will be maintained as a conservative measure and barrier between trace, residual, immobile DNAPL at the Facility and the North Branch Potomac River. Maintenance of the wall to limit vegetation growth that could affect the structural integrity of the wall and inspections of the wall, river, and creek bank along the property boundary will be completed annually and re-evaluated after 5 years from this date and will be documented in the checklist located in Attachment 1.

2. ICs

ICs are non-engineered instruments such as administrative and/or legal mechanisms that minimize the potential for human exposure to contamination and/or protect the integrity of the remedy by limiting land or resource use. The ICs shall include, but not be limited to, the following use restrictions and reporting requirements:

a. CSXT shall comply with the WVDEP-approved containment wall maintenance and

inspection schedule outlined above.

b. The Facility shall not be used for residential purposes unless it is demonstrated to WVDEP that such use will not pose a threat to human health or the environment and WVDEP provides prior written approval for such use. This restriction will also apply to the portion of the CSXT property adjacent to the east of the Site for which an environmental covenant is proposed (Figures 1 and 3).

c. A vapor intrusion risk evaluation and, if necessary, risk mitigation, shall be completed for re-development of existing buildings and new construction on the Tanner Farms Depot, LLC parcel within the former wood treatment process area and areas of known impacts (Figures 2 and 3).

d. Groundwater at the Facility and the restricted portion of the adjacent CSXT property shall not be used for any purpose other than 1) non-contact industrial use; and 2) the monitoring activities required by WVDEP, unless it is demonstrated to WVDEP that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and WVDEP provides prior written approval for such use.

e. All earth moving activities in Solid Waste Management Units (SWMUs) 1, 3, 4 and 5 (Figure 2) including excavation, drilling and construction activities shall be prohibited unless it can be demonstrated to WVDEP that such activity will not pose a threat to human health or the environment or adversely affect or interfere with the Final Remedy and WVDEP provides prior written approval for such activity.

f. The respective property owners shall monitor future changes to the Facility property and the restricted portion of the adjacent CSXT property.

g. The respective Owners and/or Operators shall evaluate compliance with ICs implemented for the Facility property and restricted portion of the adjacent CSXT property on an annual basis and provide reports documenting the findings of the evaluations to WVDEP. An inspection form (Attachment 1) to document the annual containment wall inspections will be included in the annual reports and the environmental covenant.

3. Implementation

Land and groundwater use restrictions necessary to prevent human exposure to contaminants at the Facility and the restricted portion of the adjacent CSXT property (Figures 1 and 3) will be implemented through enforceable ICs, such as Orders and/or an Environmental Covenants, pursuant to the West Virginia Uniform Environmental Covenants Act. If Environmental Covenants are to be the IC mechanism, they will be recorded in the chain of title for the Facility property and the adjacent CSXT property.

4. Groundwater Monitoring

In order to demonstrate quantifiable progress toward attaining the ultimate groundwater remedy goal of protection of human health and the environment, and absence of off-site migration of petroleum hydrocarbon constituents near the site's interface with the North Branch Potomac River, groundwater

sampling at monitoring wells R-04, MW-04, and LF-03R for analysis of benzene and naphthalene should be completed on a biennial basis. Two biennial sampling events will be completed, and the need for additional monitoring will be re-evaluated based on the data collected. The results and recommendations associated with the biennial groundwater sampling will be submitted in a summary report after completion of the second biennial groundwater sampling event or when a MCL exceedance in groundwater is observed via submittal of a data package in advance of the summary report.

Abandonment of most of the monitoring/recovery well network will be completed. A total of 49 of the 57 onsite wells will be abandoned. The four wells that flank the containment wall (CW-1 through CW-4), the three wells used for biennial groundwater monitoring (R-04, MW-04, LF-03R), and monitoring well MW-08 will be retained.

V. SUPPORT AGENCY REVIEW

The United States Environmental Protection Agency (USEPA) has been consulted regarding the modification to the Selected Corrective Measures for the Facility as described above and concurs with this ESD.

VI. AFFIRMATION OF DECLARATION

The WVDEP and the USEPA believe that the modified corrective measures outlined above remain appropriate and protective of human health and the environment.

VII. PUBLIC PARTICIPATION

The WVDEP is requesting comments from the public on this ESD. The document is available for public review at https://dep.wv.gov/pio/Pages/Settlements,Ordersouttopublicnotice.aspx The public comment period will last 30 calendar days from the date the WVDEP places an announcement in the Hampshire Review to notify the public of the ESD. Comments on, or questions regarding, the ESD may be submitted to:

Dr. Kenan Cetin
Environmental Resource Analyst
Division of Water and Waste Management
West Virginia Department of Environmental Protection
13A Peninsula Street
Wheeling, West Virginia
304-238-1220
Email: kenan.cetin@wv.gov

The WVDEP will respond to the comments received. Based on comments received or other relevant information, if the WVDEP makes minor changes to the ESD, the ESD will become effective upon those changes being made. If based on comments received or other relevant information, the WVDEP makes significant changes to the ESD, the WVDEP may seek additional public comments. The comments received during the 30-day comment period will become part of the Administrative Record for the Site, as will WVDEP responses to the significant comments.

VIII. ADMINISTRATIVE RECORD

The Administrative Record supporting the issuance of this ESD will be available by contacting

the WVDEP Project Manager, Dr. Kenan Cetin, at:

Dr. Kenan Cetin
Environmental Resource Analyst
Division of Water and Waste Management
West Virginia Department of Environmental Protection
13A Peninsula Street
Wheeling, West Virginia
304-238-1220
Email: kenan.cetin@wv.gov

IX. REFERENCES

Arcadis. 2001. Summary of Site-Wide Data. Koppers Industries, Inc., Wood Treating Facility, Green Spring, West Virginia. June 21.

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Arcadis. 2020. Groundwater Sampling Results Summary, Koppers Inc. – Green Spring Facility, Green Spring, Hampshire County, West Virginia. March 18.

Arcadis. 2021. Groundwater Monitoring Summary, Koppers Inc. – Green Spring Facility, Green Spring, Hampshire County, West Virginia. May 18.

Key. 1995. RCRA Part B Post-Closure Care Permit Application for Closed RCRA Surface Impoundments. Koppers Industries, Inc., Green Spring, West Virginia, EPA ID No: WVD003080959. October 30.

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USACE. 2020. CENAB-OPR-MN (CSX Transportation – North Branch Potomac River-Bank Stabilization) NAB-2019-00543-M43). January 7, 2020.

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Spring, West Virginia. November.

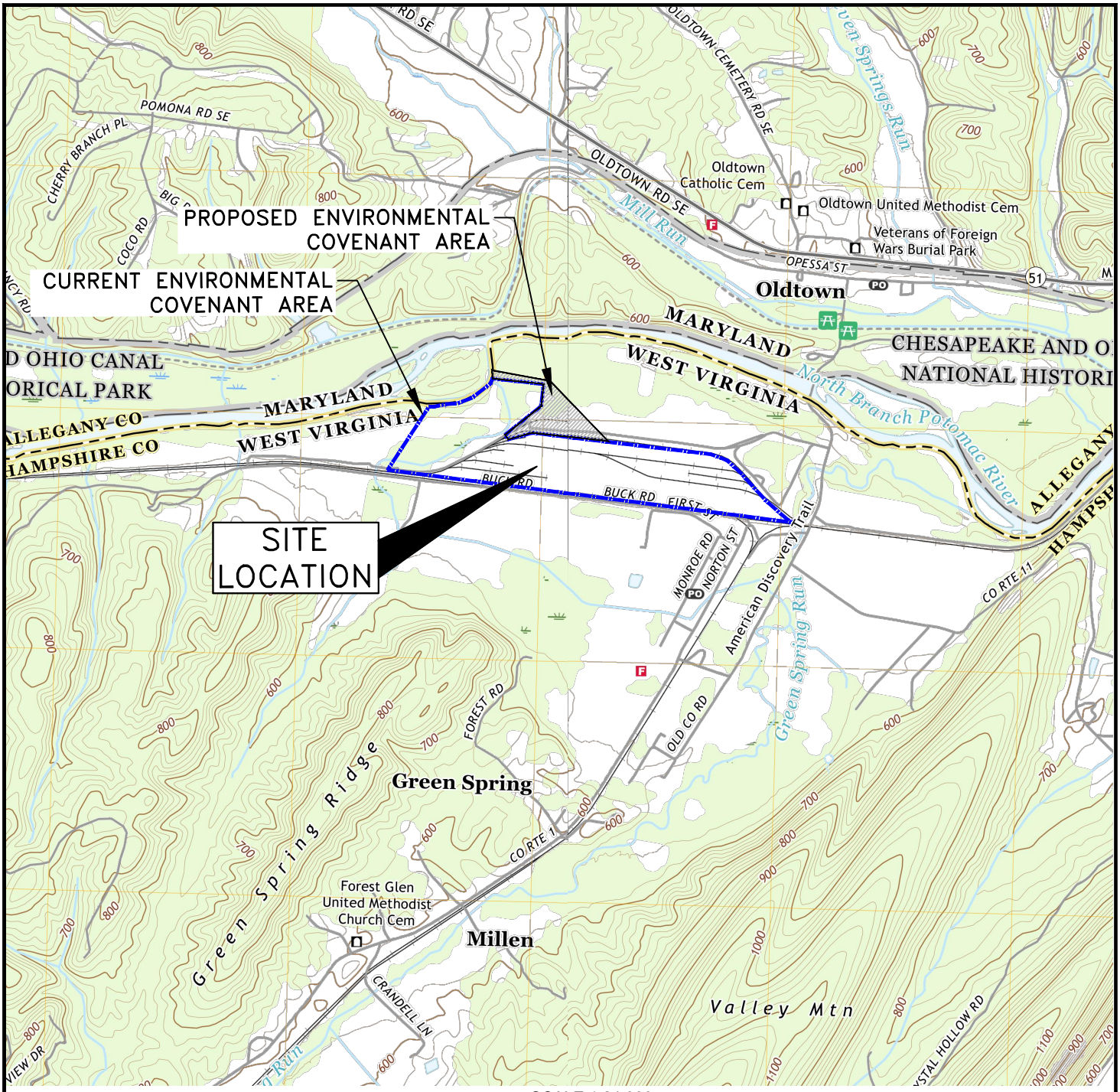
WVDEP. 2015. Email from T. Jeffries (WVDEP) to C. Grogan (Arcadis) Subject: RE: CSXT Pilot Test Work Plan, Koppers Inc. Facility, Green Spring, WV. November 17.

WVDEP. 2018. Email from K. Cetin (WVDEP) to M. Adkins (CSXT) Subject: WVDEP Review Comments on Pilot Test Summary Report & 2017 Annual Monitoring Report. March 1.

WVDEP. 2019. Email from K. Cetin (WVDEP) to C. Grogan (Arcadis) Subject: Koppers Green Spring – Affirmation of our telephone conversation points. March 1.

WVDEP. 2022. Approval of the Facility Closure Completion Report, Koppers Inc. Green Spring RCRA CA Facility (WVD003080959), Green Spring, West Virginia. August 22.

Figures



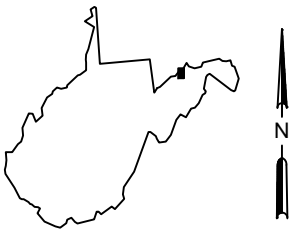
SCALE 1:24 000

1 1/2 0 1

SCALE IN MILE

1000 0 1000 2000 3000 4000 5000 6000 7000

SCALE IN FEET



WEST VIRGINIA QUADRANGLE LOCATION

REFERENCE: USGS 7.5 MINUTE QUADRANGLE; PATTERSON CREEK, WEST VIRGINIA-MARYLAND 2019 AND OLDTOWN MARYLAND 2019.

BEAZER IMPOUNDMENT
GREEN SPRING, WEST VIRGINIA

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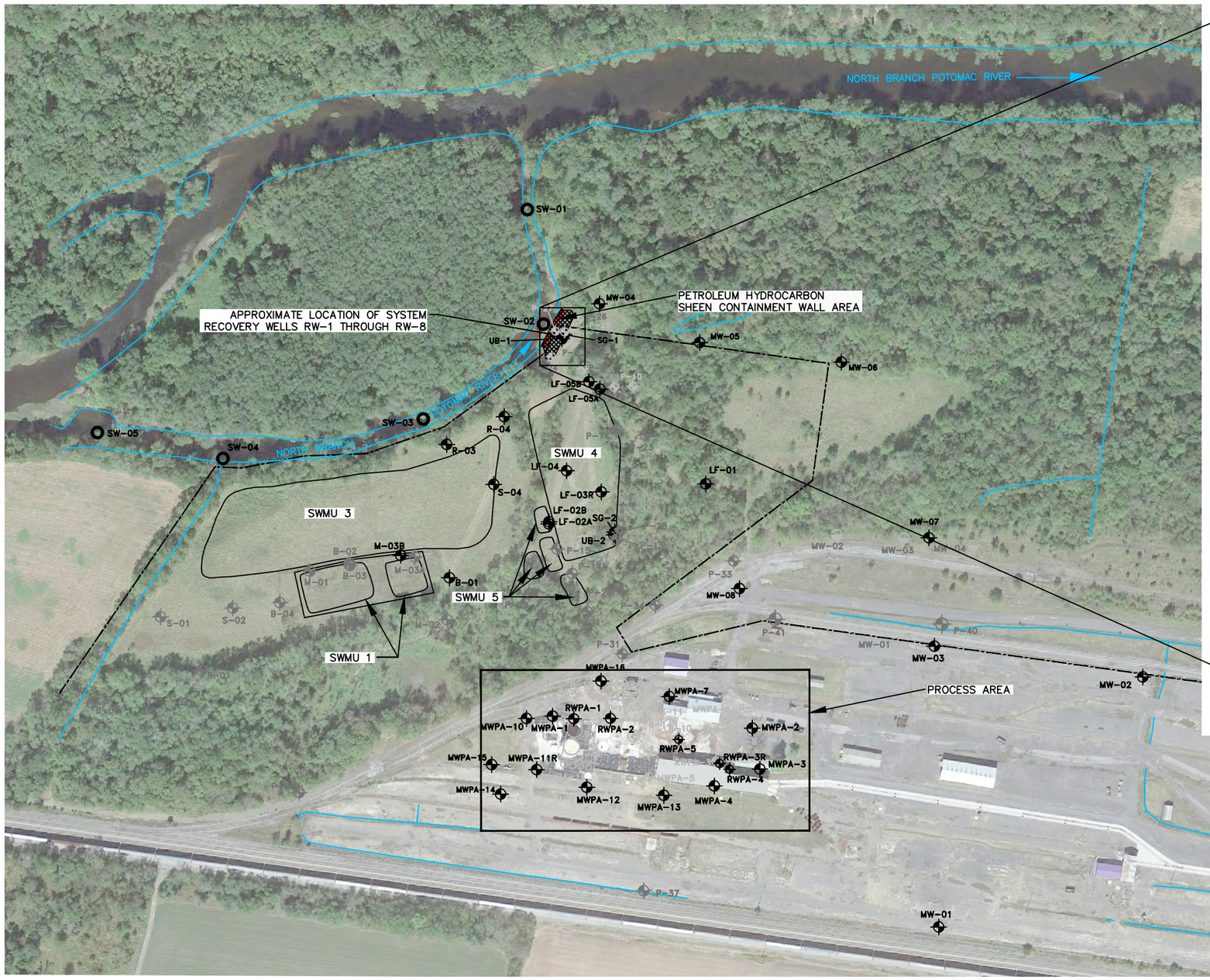
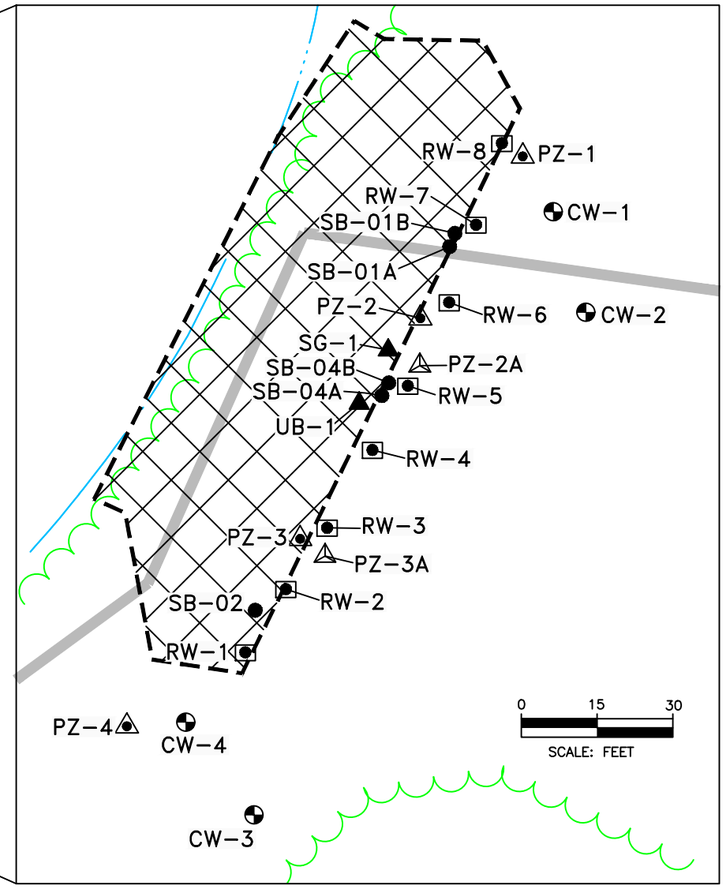
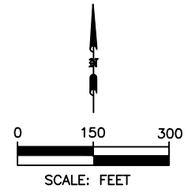
SITE LOCATION MAP

ARCADIS

FIGURE 1







LEGEND:

- PROPERTY LINE
- STORMWATER FLOW PATH
- SURFACE WATER FEATURES
- SW — SURFACE WATER SAMPLE
- S-04 — GROUNDWATER MONITORING WELL
- MONITORING WELL (CHAPMAN AND LEWIS)
- WELLS HAVE BEEN DESTROYED/BURIED/ABANDONED
- PROCESS AREA

- SWMU 1 APPROXIMATE EXTENT OF CLOSED RCRA IMPOUNDMENTS
- SWMU 3 FORMER SPRAY IRRIGATION FIELD
- SWMU 4 FORMER LANDFARM AREA
- SWMU 5 FORMER EFFLUENT BASINS

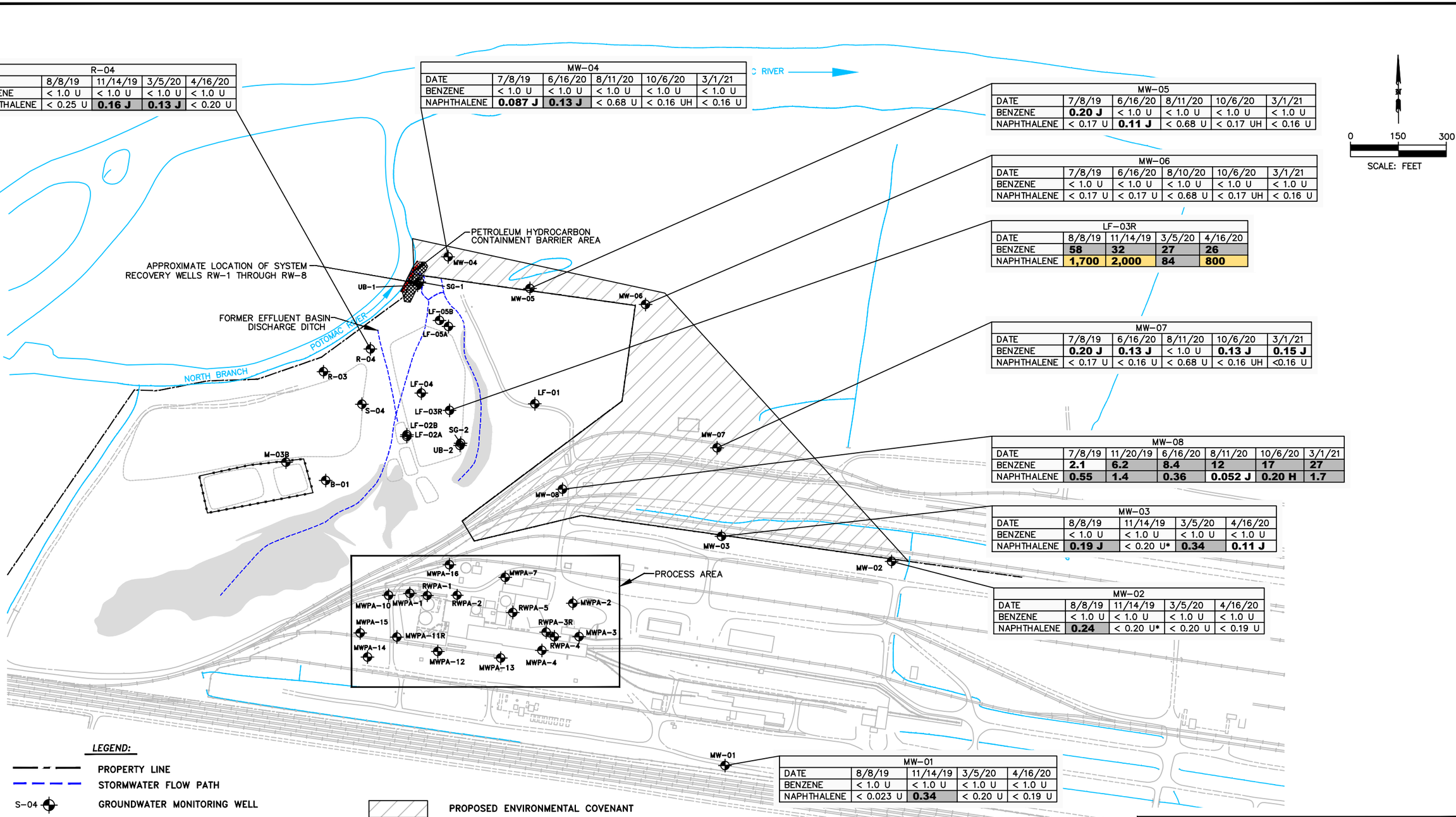
REFERENCE: AERIAL DATED SEPTEMBER 26, 2016, DOWNLOADED USING GOOGLE EARTH PRO.

BEAZER IMPOUNDMENT
GREEN SPRING, WEST VIRGINIA

SITE MAP

ARCADIS

FIGURE 2



R-04				
DATE	8/8/19	11/14/19	3/5/20	4/16/20
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	< 0.25 U	**0.16 J**	**0.13 J**	< 0.20 U

MW-04					
DATE	7/8/19	6/16/20	8/11/20	10/6/20	3/1/21
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	**0.087 J**	**0.13 J**	< 0.68 U	< 0.16 UH	< 0.16 U

MW-05					
DATE	7/8/19	6/16/20	8/11/20	10/6/20	3/1/21
BENZENE	**0.20 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	< 0.17 U	**0.11 J**	< 0.68 U	< 0.17 UH	< 0.16 U

MW-06					
DATE	7/8/19	6/16/20	8/10/20	10/6/20	3/1/21
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	< 0.17 U	< 0.17 U	< 0.68 U	< 0.17 UH	< 0.16 U

LF-03R				
DATE	8/8/19	11/14/19	3/5/20	4/16/20
BENZENE	**58**	**32**	**27**	**26**
NAPHTHALENE	**1,700**	**2,000**	**84**	**800**

MW-07					
DATE	7/8/19	6/16/20	8/11/20	10/6/20	3/1/21
BENZENE	**0.20 J**	**0.13 J**	< 1.0 U	**0.13 J**	**0.15 J**
NAPHTHALENE	< 0.17 U	< 0.16 U	< 0.68 U	< 0.16 UH	<0.16 U

MW-08						
DATE	7/8/19	11/20/19	6/16/20	8/11/20	10/6/20	3/1/21
BENZENE	**2.1**	**6.2**	**8.4**	**12**	**17**	**27**
NAPHTHALENE	**0.55**	**1.4**	**0.36**	**0.052 J**	**0.20 H**	**1.7**

MW-03				
DATE	8/8/19	11/14/19	3/5/20	4/16/20
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	**0.19 J**	< 0.20 U*	**0.34**	**0.11 J**

MW-02				
DATE	8/8/19	11/14/19	3/5/20	4/16/20
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	**0.24**	< 0.20 U*	< 0.20 U	< 0.19 U

MW-01				
DATE	8/8/19	11/14/19	3/5/20	4/16/20
BENZENE	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
NAPHTHALENE	< 0.023 U	**0.34**	< 0.20 U	< 0.19 U

LEGEND:

- PROPERTY LINE
- STORMWATER FLOW PATH
- S-04 GROUNDWATER MONITORING WELL
- APPROXIMATE EXTENT OF LOW-LYING DRAINAGE AREA
- SURFACE WATER FEATURES
- SITE FEATURES
- **BOLD** INDICATES THE CONSTITUENT WAS DETECTED
- **BOLD** INDICATES THE CONSTITUENT EXCEEDS STANDARDS
- **BOLD** INDICATES THE CONSTITUENT EXCEEDS VISL
- * MW-02 AND MW-03 WERE RESAMPLED FOR SVOCs ON 12/19/19 DUE TO LABORATORY ERRORS DURING ANALYSIS OF SAMPLES COLLECTED ON 11/14/19
- PROPOSED ENVIRONMENTAL COVENANT
- PROCESS AREA

ANALYTE	UNITS	GROUNDWATER STANDARDS		
		EPA MAXIMUM CONTAMINANT LEVEL (MCL)	WEST VIRGINIA DE MINIMIS STANDARD	INDUSTRIAL VAPOR INTRUSION SCREENING LEVEL (VISL)
BENZENE	µg/L	5	5	188
NAPHTHALENE	µg/L	--	0.12	477

NOTES:

1. THE EIGHT RECOVERY WELLS (RW-1 THROUGH RW-8) ASSOCIATED WITH THE HYDROCARBON SHEEN CONTAINMENT SYSTEM ARE NOT SHOWN ON THIS MAP.
2. J – RESULT IS LESS THAN RL BUT GREATER THAN OR EQUAL TO THE MDL AND THE CONCENTRATION IS AN APPROXIMATE VALUE.
3. U – ANALYTE WAS ANALYZED FOR BUT NOT DETECTED ABOVE THE REPORTING LIMIT. ASSOCIATED VALUE IS THE REPORTING LIMIT.
4. H – SAMPLE WAS PREPARED AND ANALYZED BEYOND THE SPECIFIED HOLDING TIME.
5. RESULTS IN MICROGRAMS PER LITER (µg/L)

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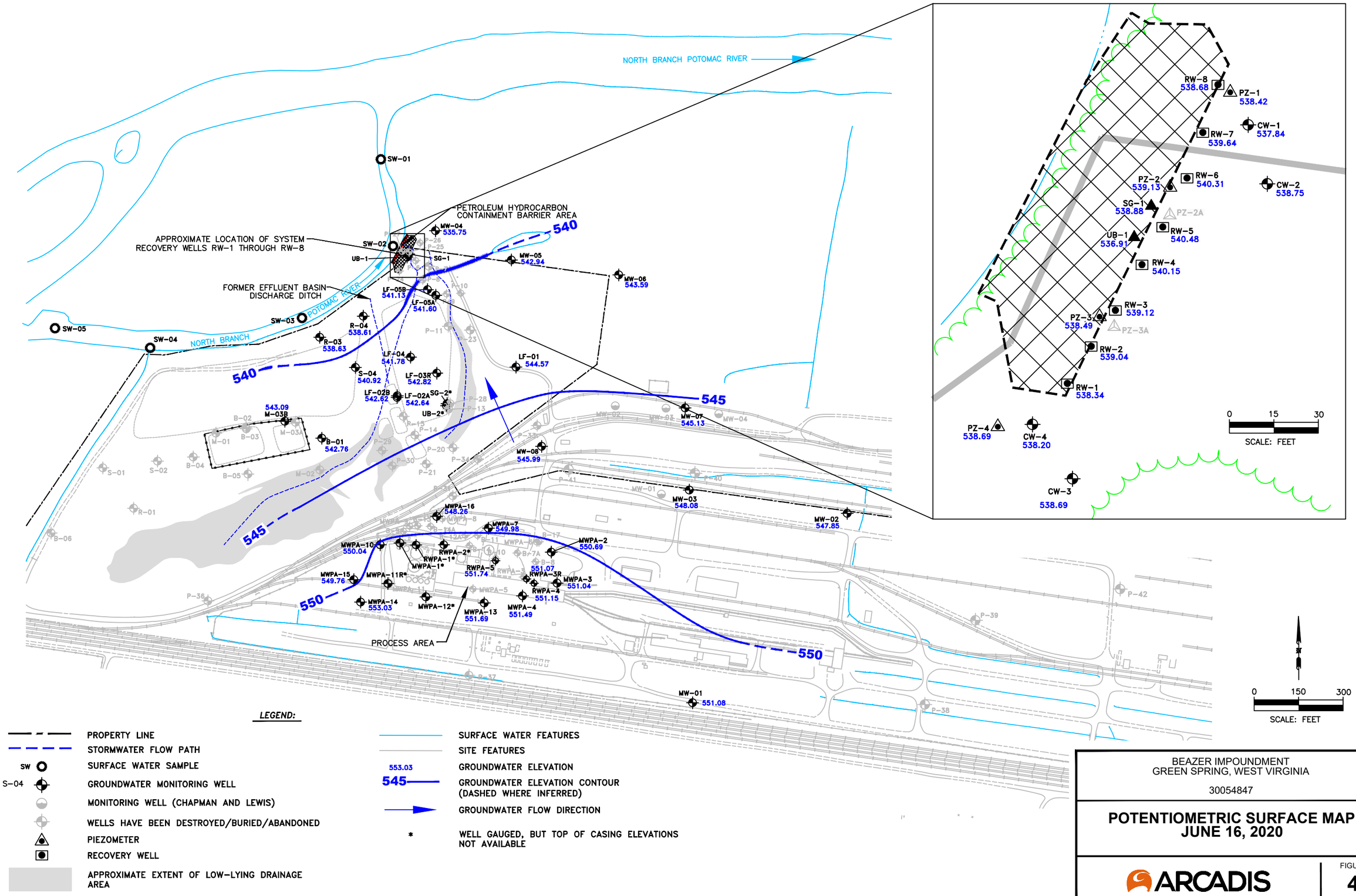
GREEN SPRING, WEST VIRGINIA

GROUNDWATER ANALYTICAL DATABOX FIGURE

ARCADIS

FIGURE 3



LEGEND:

- PROPERTY LINE
- STORMWATER FLOW PATH
- SW — SURFACE WATER SAMPLE
- S-04 — GROUNDWATER MONITORING WELL
- MONITORING WELL (CHAPMAN AND LEWIS)
- WELLS HAVE BEEN DESTROYED/BURIED/ABANDONED
- PIEZOMETER
- RECOVERY WELL
- APPROXIMATE EXTENT OF LOW-LYING DRAINAGE AREA
- SURFACE WATER FEATURES
- SITE FEATURES
- 553.03 — GROUNDWATER ELEVATION
- 545 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- * — WELL GAUGED, BUT TOP OF CASING ELEVATIONS NOT AVAILABLE

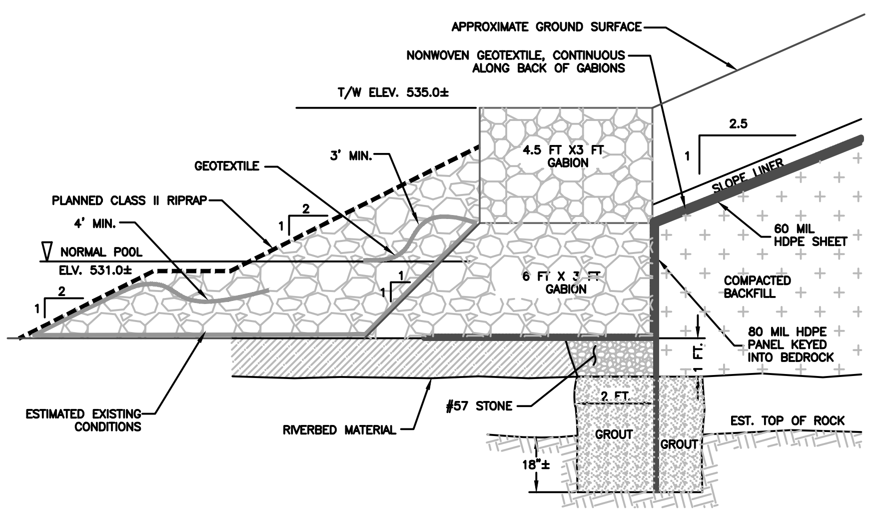
BEAZER IMPOUNDMENT
GREEN SPRING, WEST VIRGINIA

30054847

POTENTIOMETRIC SURFACE MAP JUNE 16, 2020

ARCADIS

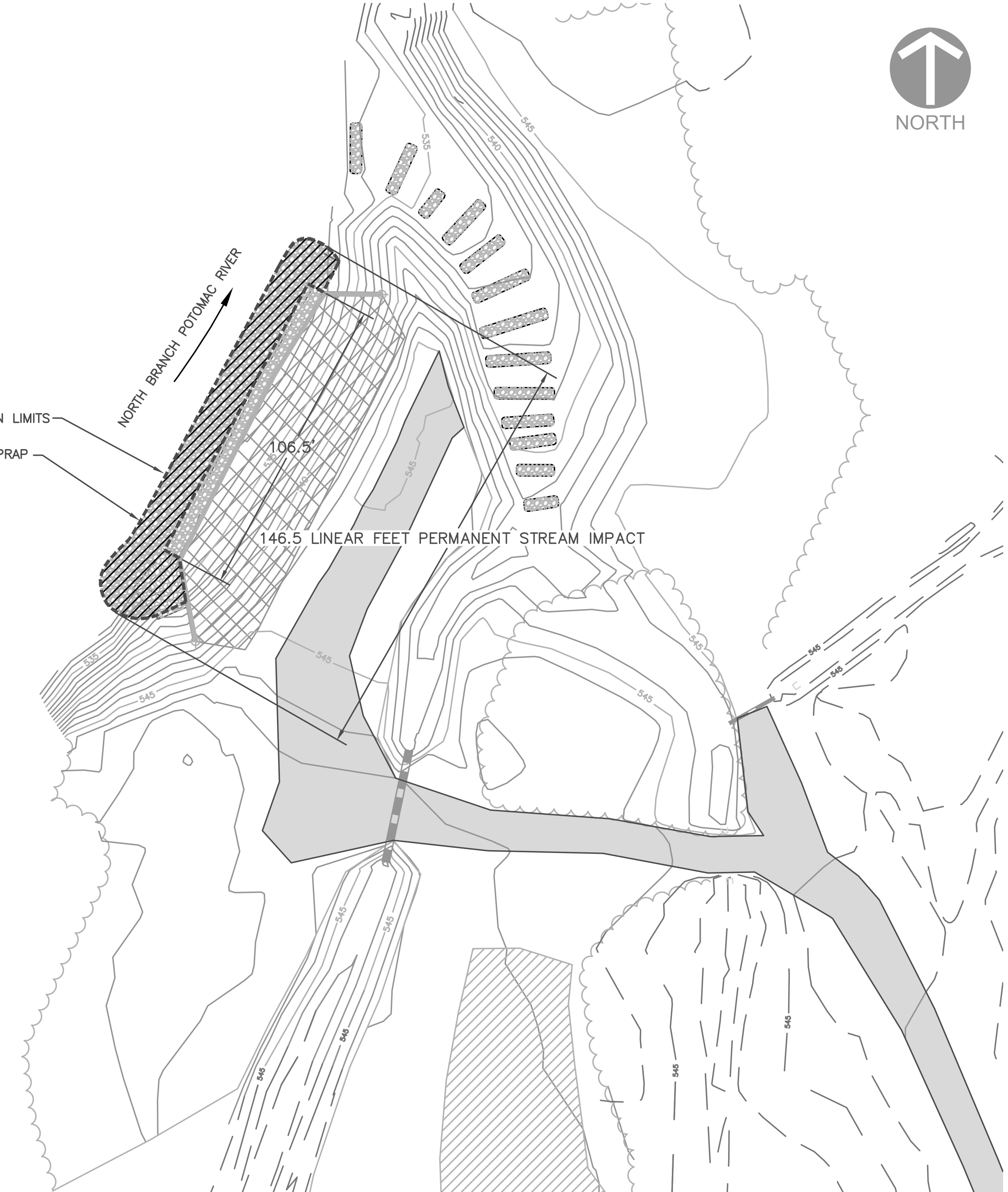
FIGURE 4



AS-BUILT DETAIL

SCALE IN FEET

0 5 10



LEGEND

540	CONSTRUCTED CONTOUR
540	ORIGINAL CONTOUR
	GRAVEL DRIVE
	DRAINAGE SWALE
	IMPACT AREA
	CONTROL POINT

SCALE IN FEET

0 50 100

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AS-BUILT WALL MODIFICATION DETAILS

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FIGURE
5

Attachment 1

Barrier Wall Inspection Checklist
CSX Transportation, Inc.
Green Spring, West Virginia

DRAFT

ARCADIS

*Refer to Figure 1 for inspection and photograph locations, wall features, and other references. Close up photographs preferred for any deficiencies, if possible.

Containment Wall Structure			
Inspection	**Yes**	**No**	**Notes**
Are there any cracks forming in the concrete-filled geotextile blanket?			
Are there any large trees, branches, or other debris lodged into the riprap at the base of the wall?			
Are there signs of erosion near the headwall?			
Is vegetation being managed such that there are not obvious integrity issues with the Containment Wall? (i.e. is there vegetation other than grasses growing on the wall)			
Are there any cracks or other visible evidence of seeps from the containment wall/evidence of structural issues or risk of failure?			
Drainage Swale			
Inspection	**Yes**	**No**	**Notes**
Is there any evidence of sheen or NAPL where the drainage swale converges with the river or proximal to the wall?			
Is there any beaver activity in this area?			
Stream Observations			
Inspection	**Yes**	**No**	**Notes**
Is there any evidence of a sheen or NAPL?			
Is there any evidence of NAPL in the stream bed? (Move some small stones around in the stream bed to assess)			
Other evidence of potential issues or ecological impacts to vegetation and/or stream species?			

Signature _____ Date _____

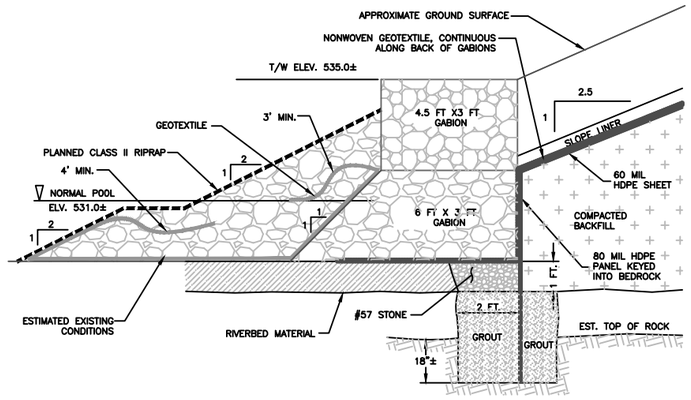
Printed Name _____

*Refer to Figure 1 for inspection and photograph locations, wall features, and other references. Close up photographs preferred for any deficiencies, if possible.

General Observations and Notes

Signature _____ Date _____

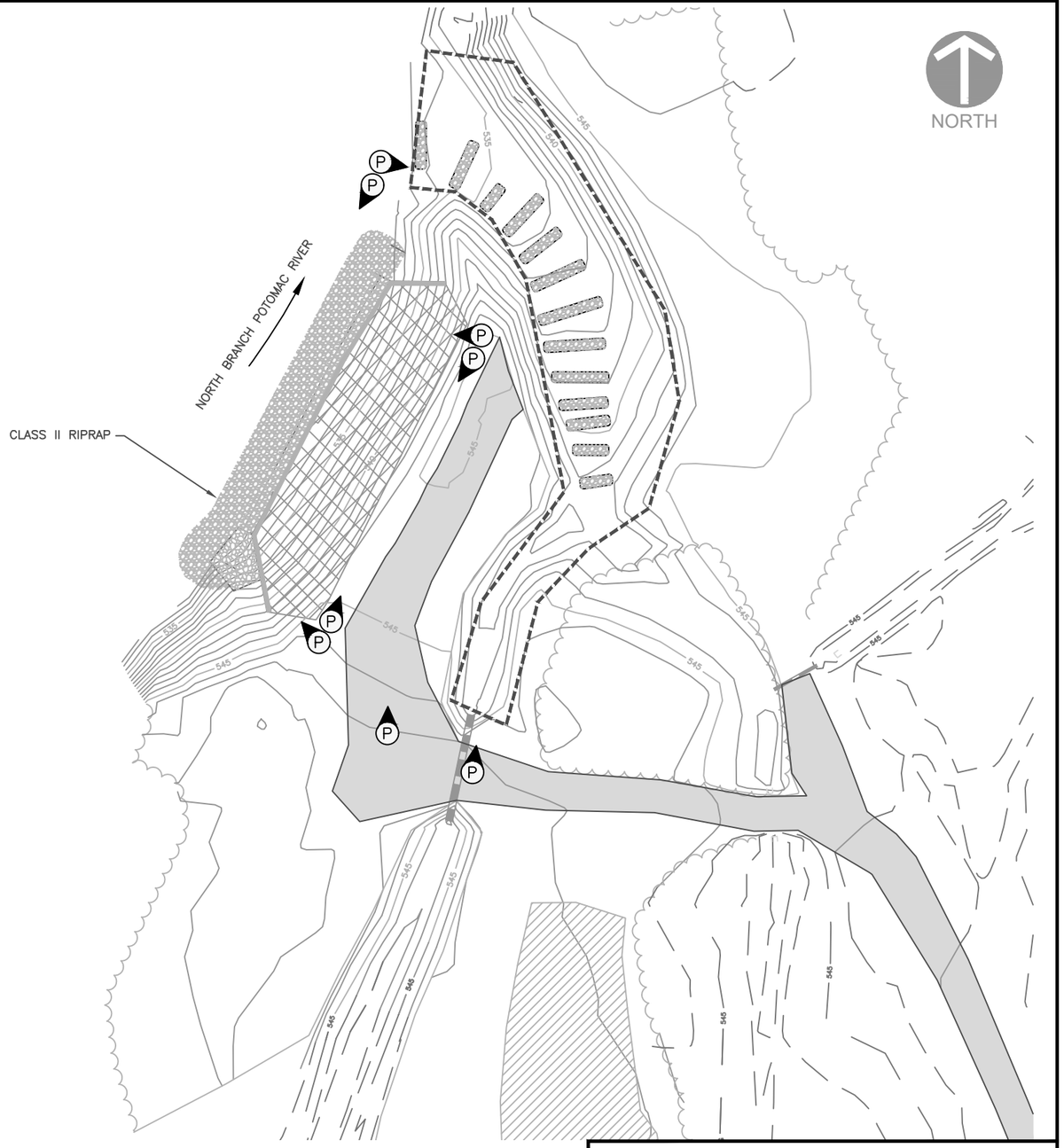
Printed Name _____



AS-BUILT DETAIL

SCALE IN FEET

0 5 10



LEGEND

540	CONSTRUCTED CONTOUR
540	ORIGINAL CONTOUR
	MOWED AREA
	DRAINAGE SWALE
P	SUGGESTED PHOTOGRAPH LOCATION AND DIRECTION

SCALE IN FEET

0 50 100

BEAZER IMPOUNDMENT
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WALL INSPECTION REPORT

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FIGURE 1