



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 629 East Main Street, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4020
1-800-592-5482

September 12, 2017

Mr. Clarence Myers
Director, Environmental Affairs
Emerson
8000 West Florissant Avenue
St. Louis, MO 63136-8506

VIA ELECTRONIC MAIL

**RE: Final Decision and Response to Comments
Former Emerson Electric, Alco Controls Facility – Wytheville, VA
EPA ID Number VAD065415457**

Dear Mr. Myers,

Please find enclosed with this letter the Final Decision and Response to Comments developed by the Department of Environmental Quality (DEQ), Office of Remediation Programs (Department) for the subject facility located in Wytheville, Virginia. The 30 day public notice soliciting comments on the Department's determination described in the Statement of Basis dated June 13, 2017 ended on September 1, 2017. No comments were received by the Department during the public comment period. Consequently, the Department's determination did not change.

Please feel free to contact me if you have any additional questions or concerns at (804) 698-4045 or ryan.kelly@deq.virginia.gov.

Sincerely,

A handwritten signature in cursive script that reads 'Ryan J. Kelly'.

Ryan J. Kelly
Corrective Action Project Manager
Office of Remediation Programs

Enclosure

Cc: Cassie McGoldrick – EPA Region 3 (3LC50)
Erich Weissbart – EPA Region 3 (3LC20)
Dan Manweiler, DEQ-SWRO
Chris Evans, Brett Fisher, DEQ-CO
David Sarr- WSP
Fred Riley, Riley Construction
File – DEQ CO



FINAL DECISION AND RESPONSE TO COMMENTS

FORMER EMERSON ELECTRIC CO. – LOTS 1 and 3

WYTHEVILLE, VIRGINIA

EPA ID NO. VAD065415457

I. FINAL DECISION

The Virginia Department of Environmental Quality (DEQ) has determined that further actions to remediate soil and groundwater, also known as corrective measures, are necessary to protect human health and the environment given current and reasonably anticipated future land use for Lots 1 and 3. VDEQ's decision requires the Facility to perform an In-Situ injection to treat groundwater, perform long term groundwater monitoring, and maintain certain property mechanisms known as Institutional Controls (ICs). This is based on our findings detailed in the Statement of Basis, dated June 13, 2017. This determination is consistent with EPA's February 2003 Final Guidance of Completion of Corrective Action Activities at RCRA Facilities (reference 68 FR 8757).

II. PUBLIC COMMENT PERIOD

Consistent with public participation provisions under the Resource Conservation and Recovery Act (RCRA), DEQ requested comments from the public on the proposed determination described in the Statement of Basis. The commencement of a thirty (30)-day comment period was announced in the Wytheville Enterprise newspaper on August 2, 2017 and on the DEQ website. The public comment period ended on September 1, 2017.

III. RESPONSE TO COMMENTS

DEQ received no comments on its proposed determination for the Facility. Consequently, DEQ's determination did not change from the determination proposed in the SB.

IV. AUTHORITY

DEQ is issuing this Final Decision under the authority of the Solid Waste Disposal Act, as amended by RCRA, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901 to 6992k.

V. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the former Emerson Electric Co. – Lots 1 and 3 facility, DEQ has determined that the Final Remedy selected in this Final Decision and Response to Comments is protective of human health and the environment.



Chris M. Evans, Director
Office of Remediation Programs
Virginia Department of Environmental Quality



Date

Attachment A: Statement of Basis, dated June 13, 2017



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF LAND PROTECTION AND REVITALIZATION

OFFICE OF REMEDIATION PROGRAMS

STATEMENT OF BASIS

FORMER EMERSON ELECTRIC CO. – LOTS 1 and 3

WYTHEVILLE, VIRGINIA

EPA ID NO. VAD065415457

JUNE 13, 2017

Table of Contents

1.0 INTRODUCTION..... 1
1.1. Facility Name.....1
1.2. Proposed Decision1
1.3. Public Participation1
2.0 FACILITY BACKGROUND..... 2
3.0 SUMMARY OF ENVIRONMENTAL HISTORY..... 3
4.0 CORRECTIVE ACTION OBJECTIVES 8
5.0 SUMMARY OF PROPOSED REMEDY 9
6.0 EVALUATION OF DEQ'S PROPOSED DECISION 10
7.0 ENVIRONMENTAL INDICATORS..... 11
8.0 FINANCIAL ASSURANCE 11
9.0 PUBLIC PARTICIPATION..... 12

Attachments

Figure 1 – Survey Plat

Figure 2 – Groundwater Monitoring Network

Administrative Record – Index of Documents for Statement of Basis

1.0 INTRODUCTION

1.1 Facility Name

The Virginia Department of Environmental Quality (VDEQ) has prepared this Statement of Basis (SB) for Lots 1 and 3 of the Former Emerson Electric Co. (formerly known as Alco Controls Division) Facility located at 555 Peppers Ferry Road, Wytheville, Virginia 24382 (hereinafter referred to as the Facility, Site, “Alco Controls”, or “Emerson Electric”).

The Facility is subject to the Corrective Action (CA) Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and waste constituents that have occurred at their site.

Information on the Corrective Action Program can be found by navigating <https://www.epa.gov/hwcorrectiveactionsites/corrective-action-resources-specific-epas-region-3>.

VDEQ has prepared this SB in cooperation with the United States Environmental Protection Agency (EPA) and is providing the opportunity for public comment and review on its proposed decision.

1.2 Proposed Decision

This Statement of Basis explains VDEQ’s proposed decision that further actions to remediate soil and groundwater, also known as corrective measures, are necessary to protect human health and the environment given current and reasonably anticipated future land use for Lots 1 and 3. VDEQ’s proposed decision requires the Facility to perform an In-Situ injection to treat groundwater, perform long term groundwater monitoring, and maintain certain property mechanisms known as Institutional Controls (ICs). ICs are generally non-engineered mechanisms such as administrative and/or legal controls that minimize or eliminate the potential for human exposure to contamination. The proposed corrective measures objectives are discussed in Section 4.0 and the proposed remedy and controls are discussed in Section 5.0 below.

This SB summarizes information that can be found in greater detail in the documents and reports reviewed by VDEQ and EPA, which can be found in the Administrative Record (AR).

1.3 Public Participation

Interested persons are invited to comment on VDEQ's proposed decision by reviewing this SB and the documents contained in the AR. The information presented in this SB can be found in greater detail in the work plans and reports submitted by the Facility to VDEQ and EPA. To gain a more comprehensive understanding of the RCRA activities that have been conducted at the Facility, VDEQ encourages the public to review these documents, which are found in the AR. A copy of the AR is available for public review from the VDEQ contact person, for which contact information is provided in Section 9.0 below.

When making a determination regarding the proposed decision, VDEQ will consider all written comments received during the comment period (see Section 9.0). If VDEQ determines that new information or public comments warrant a modification to the proposed decision, VDEQ will modify the proposed decision or select other alternatives based on such new information and/or public comments. VDEQ will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC).

2.0 FACILITY BACKGROUND

The former Emerson Electric Facility is located at 555 Peppers Ferry Road, Wytheville, Wythe County, Virginia. The Facility originally consisted of four buildings which were situated on a 21.8-acre parcel. The entire Emerson Facility contains three distinct parcels (lots). Lot 1 is 1.5 acres in size and is located at the north end of the site, next to Peppers Ferry Road. The area was formerly used as an employee parking lot, and there were no buildings on the lot. Lot 2 is located to the south of the Facility, and consists of 8.428 acres. No manufacturing or operations were conducted on Lot 2. Lot 3 consists of approximately 12 acres and contains the former Emerson manufacturing plant and surrounding land. All manufacturing operations took place on Lot 3, where the original Facility buildings were constructed. Lots 1 and 3 were never legally subdivided, but the distinction between the two lots was used during recent environmental investigations and remediation of the site. The attached Figure 1 (survey plat) shows the location and extent of Lots 1 and 3.

The former Facility is situated on a topographic high point, at an elevation of approximately 2,440 feet above mean sea level. The land gently slopes away on all sides of the buildings. The closest surface water body is a spring fed pond approximately 1,000 feet east of the Facility. No wetlands are located on the site and the Facility is not located in a flood-prone area.

Reportedly, the original Facility buildings were constructed in 1935 on farmland. The Facility operated as a textile mill and then as a knitting mill (Wyomissing Corporation) until approximately 1974, when Tuttle Electric (a division of Emerson) began operations. Tuttle Electric manufactured heating elements for commercial dryers and refrigerators.

Chromolox (a division of Emerson) leased the southern portion of the building from approximately 1974 to 1977. An addition was added to the southern portion of the Facility in the early 1950s. The first courtyard (former location of Bright Dip operations) was enclosed in 1974. The second courtyard was enclosed circa 1975 and the maintenance area was enclosed during approximately the same year.

Alco Controls manufactured control valves for residential and commercial refrigeration appliances. The facility buildings covered approximately 139,000 square feet of space, which consisted of approximately 2,500 square feet of office space, 120,000 square feet of manufacturing space, and 11,500 square feet of storage space. Former outdoor features included a chip storage area and two paved parking lots.

Primary operations conducted onsite included turning, welding, honing, grinding, spray painting, assembling, testing, warehousing, and packaging. Alco Controls operated under the Standard Industrial Classification code 3491, which is specific to establishments involved in industrial valve manufacturing (North American Industry Classification System code 332911). Raw materials previously used at the Facility include nitric acid, sulfuric acid, hydrochloric acid, chromic acid, Freon, and 1,1,1-trichloroethane (TCA). Small quantities of nitric acid and sulfuric acid were present in the wastewater laboratory.

The former Emerson Facility is located in a commercial and light industrial area on the north side of Wytheville. The Facility is currently bordered by two hotels, Wytheville community center and Wytheville Community College to the north and east, the Wytheville Regional Housing Agency to the south, and Peppers Ferry Road to the north and west. Interstate 81 is located farther to the north (approximately 0.5 mile) of the Facility.

Operations ceased at the Facility in approximately 2001 and the Facility was closed. The site was held by Emerson Charitable Trust until the entire site sold to Riley Construction Company, Inc. on February 7, 2013. Riley Construction subsequently sold Lot 2 to the Wytheville Regional Housing Agency, Inc. on February 28, 2013. EPA and VDEQ determined that corrective action on Lot 2 was complete without controls and issued a Final Decision for Lot 2 on April 16, 2015. The Wytheville Regional Housing Agency is currently redeveloping Lot 2. Riley Construction is currently utilizing Lots 1 and 3, including the former main building, for commercial storage purposes.

3.0 SUMMARY OF ENVIRONMENTAL HISTORY

Environmental Investigations

As part of the plant closure process, a Phase I environmental site assessment of the Alco Controls Facility was conducted in March 2001, which identified eight areas of concern. These areas were evaluated in subsequent investigations from 2003 through 2005, which identified affected soils in specific areas, and affected groundwater in the former aboveground solvent tank (AST) area and the former underground storage tank (UST)

area. Investigation and remediation of soil and groundwater on the property were conducted under the VDEQ Voluntary Remediation Program (VRP) from 2004 to 2006. Emerson submitted applications to participate in the VRP in October 2003. Lots 1 and 3 were accepted into the VDEQ's VRP in 2004. Lot 2 was not impacted by the industrial operations at the Facility and therefore, was not enrolled into the VRP. VRP Reports were submitted to VDEQ in 2007. On September 10, 2008, the US EPA Region III invited Emerson to participate in the RCRA Corrective Action program for the Facility under a Facility Lead Agreement (FLA). On October 8, 2008, Emerson submitted a Facility Lead Agreement to the VDEQ and EPA Region III. Subsequent environmental investigations were conducted under the requirements of the FLA. Additional details for the historical investigations are described below.

Soil Investigations

Soil investigations were conducted in 2003 through 2005, in areas of potential releases identified from the Phase I environmental site assessment. These investigations characterized metals-affected soils in the former Nickel Plating Discharge Area and former Plating and Bright Dip Area, and petroleum, metals, and VOC-affected soils in the former Scrap Metal Storage Area. With the exception of arsenic concentrations beneath the former Plating and Bright Dip Area, soil concentrations were less than the US EPA Region 3 industrial based Risk Based Concentrations (RBCs) at the time.

Groundwater Investigations

Groundwater investigations were conducted to determine the source of the groundwater contamination and delineate areas of affected groundwater. The investigations identified releases of 1,1,1-TCA impacting bedrock groundwater in the former AST area and releases of gasoline-related VOCs (benzene, toluene, ethylbenzene, and xylene [BTEX]) in perched groundwater in the former UST area. The horizontal and vertical extent of VOCs in groundwater was delineated in accordance with VDEQ VRP program criteria, and the UST case was closed in accordance with the VDEQ UST program requirements. The VRP issued a Certificate of Satisfactory Completion of Remediation on July 9, 2007. Groundwater monitoring was conducted during 2007 and 2008 in accordance with a Post-Certification Groundwater Monitoring Plan. A supplemental groundwater investigation was conducted in 2009 to fulfill delineation requirements in accordance with the FLA and RCRA Corrective Action Program criteria. Data obtained was used to develop a site conceptual model, as presented in the October 2009 RCRA Supplemental Groundwater Characterization Report.

Surface Water Investigations

Surface water samples have been collected since 2010 during various investigations. Samples collected from the upper pond (SW-3 and SW-6) regularly contained detectable concentrations of 1,1,1-TCA and 1,4-dioxane between 2010 and 2015, but these constituents have not been detected in surface water samples collected since October 2015. The 1,1,1-TCA degradation products 1,1-DCA, 1,1-DCE and chloroethane have been detected in one or more samples from the SW-3 location, but have not been detected in surface water samples from the SW-6 location. Since April 2011, the chlorinated VOC

concentrations detected in the surface water samples have not exceeded applicable screening criteria as indicated in the sampling data.

Vapor Intrusion Assessment

A vapor intrusion assessment was conducted at the Facility in 2013 and 2014 to evaluate whether residual VOCs detected in site groundwater are affecting indoor air quality in the existing building, or could affect indoor air quality in some future building on the property. As discussed in the October 13, 2014, Vapor Intrusion Assessment, the results demonstrated that VOCs in site groundwater are not affecting indoor air quality in the existing building and will not affect indoor air quality in some future building. Therefore, the vapor intrusion assessment did not identify a potential human health risk due to vapor intrusion. VDEQ approved the assessment report in a letter dated February 23, 2016.

Environmental Remediation/Remedial Activities

Remedial efforts were initiated in September 2005, including excavation and disposal of soils affected by VOCs and metals in the former Nickel Plating Discharge Area, the former Plating and Bright Dip Area, and the former Scrap Metal Storage Area.

Remedial action was also performed in September 2005 in the former UST area consisting of oxygen release compound (ORC) injections. The effect of the ORC injection was monitored through semiannual groundwater monitoring from the four perched zone monitoring wells (MW-8A, MW-9A, MW-10A, MW-11A) and one bedrock monitoring well (MW-03) for two years. Groundwater monitoring began in spring 2006, and continued through fall 2007. The UST area was closed under the Virginia UST Program in 2008.

Remediation of the bedrock groundwater in the former AST area by zero valent iron (ZVI) injection was conducted in June and September 2006. The treatment was conducted using the Ferox technology, a patented technology that injects micron-sized ZVI powder into unconsolidated or bedrock formations, targeting a conductive feature identified by an electrical resistivity (ER) survey and boring logs. Water-bearing bedrock fractures are present in a zone from 40 to 55 feet bgs, trending east from the former solvent storage tank area towards MW-4. This bedrock feature is the probable migration pathway for the VOCs detected in groundwater samples from MW-4. A total of 13,100 pounds of iron was injected into the bedrock formation in June 2006 and September 2006.

Human Health Risk Assessment

A Human Health Risk Assessment (HHRA) was performed in accordance with the August 11, 2011 Risk Assessment Work Plan, approved by VDEQ on October 13, 2011. The HHRA evaluated potential risks from exposure to constituents in soil in three defined areas; a former drum storage area, a former bright dip area, and an offsite area adjacent to the nickel plating wastewater discharge area. Affected soil was removed from each of these areas during remediation at the property as described above. The HHRA also

evaluated potential risks from exposure to constituents in soil in other portions of the property. Metals (arsenic, chromium, lead, and nickel) and one VOC (1,2,4-trimethylbenzene) were identified as constituents of potential concern (COPCs). Potential exposures evaluated in the HHRA included onsite commercial, utility, and construction workers. The HHRA found that under a current and future industrial use scenario the estimated carcinogenic risk and non-carcinogenic hazard associated with potential exposures to COPCs in the soil at the former Alco Controls Facility are within acceptable levels. The risk assessment report was transmitted to VDEQ on July 10, 2012. In response to a VDEQ comment letter dated January 14, 2013, a revised HHRA was submitted to VDEQ on April 5, 2013. The VDEQ approved the HHRA report in a letter dated February 23, 2016.

Current Environmental Conditions

The following section presents the current environmental conditions at the site:

Soil

The April 5, 2013, HHRA for soils demonstrated that residual concentrations of metals and VOCs in site soils do not pose unacceptable carcinogenic or non-carcinogenic risks associated with potential exposures of commercial, utility, and construction workers at the Former Alco Controls facility.

Groundwater

Semiannual groundwater and surface water sampling is being conducted in accordance with the Facility Lead Agreement. There are currently eleven monitoring wells and three surface water sample locations in the semi-annual monitoring program, as listed below. The locations are shown in Figure 2.

- Quality monitoring at ten bedrock groundwater monitoring locations (MW-02, MW-03, MW-04, MW-07, MW-13B, MW-16B, MW-17B, MW-18B, MW-21D, MW-22D, and MW-23A), one overburden monitoring well (MW-23A), and 3 surface water monitoring locations (SW-2, SW-3, and SW-6).
- Elevation monitoring at 18 locations (MW-01, MW-02, MW-03, MW-04, MW-05, MW-06, MW-07, MW-12, MW-13B, MW-14B, MW-15B, MW-16B, MW-17B, MW-18B, MW-19B, MW-20D, MW-21D, and MW-22D).

Concentrations of 1,1,1-TCA, 1,1-DCA, 1,1-DCE, and 1,4-dioxane in groundwater samples from one or more monitoring wells at the former Alco property are greater than the drinking water standards and risk-based criteria. Groundwater containing 1,1,1-TCA above screening criteria is restricted to the on-site monitoring wells MW-03 and MW-04, and concentrations decrease with distance downgradient from MW-04 and MW-03.

Downgradient of the former Alco property, 1,1,1-TCA and 1,1-DCE concentrations in groundwater samples are less than drinking water standards or risk-based criteria, while 1,1-DCA and 1,4-dioxane concentrations are greater than drinking water standards.

Concentrations of 1,4-dioxane are highest at the leading edge of the plume, near MW-17B. This is attributed to the gradual migration of this highly soluble compound away

from the point of release. The leading edge of the 1,4-dioxane plume does not migrate beyond the upper or lower ponds due to the presence of a groundwater divide.

Surface Water

The maximum VOC concentrations have historically been detected in samples from the middle of the upper pond (SW-3). 1,1,1-TCA concentrations in surface water samples collected in 2015 had decreased by at least 85% compared to historical maximum concentration of 6.9 micrograms per liter (ug/l) measured in April 2011, and constituents have not been detected in surface water samples collected since October 2015. Since April 2011, the VOC concentrations in surface water samples have been less than ecological screening values and drinking water standards or criteria during all monitoring events.

Former UST Area

Historically, groundwater samples collected from wells located in the former UST area (MW-8A, MW-9A, MW-10A, and MW-11A) contained BTEX concentrations greater than drinking water standards. These wells were screened in a limited zone of groundwater perched on top of the bedrock near the former UST location. These four wells were abandoned in 2014 due to construction on site. MW-23A was installed in the former UST area after the four original wells were abandoned, and was also screened in the perched groundwater zone. The samples collected from MW-23A have not contained detectable concentrations of BTEX compounds, but have contained detectable concentrations of 1,1,1-TCA and its degradation products and 1,4-dioxane. The concentrations present are lower than the concentrations detected in groundwater samples collected from the bedrock wells.

Soil Gas and Indoor Air

The vapor intrusion assessment performed in 2013 and 2014 demonstrated that VOCs in site groundwater are not affecting indoor air quality in the existing building. Further, the assessment showed that affected groundwater will not affect indoor air quality in some future building constructed on site. Therefore, the assessment did not identify a potential human health risk.

Existing Institutional Controls

There are two existing institutional controls in place on the former Alco property and adjacent properties; a deed restriction on the former Alco property, and a municipal ordinance that applies to the former Alco property and surrounding properties.

A deed restriction prohibiting any use of groundwater for purposes other than environmental monitoring of the former Alco Controls property was added to the deed for the former Alco property on February 2, 2006. The deed restriction also prohibits residential use of the property on Lots 1 and 3. This deed restriction may only be removed if monitoring indicates that VOC concentrations in groundwater samples collected on the former Alco property and at the property boundary meet drinking water standards.

A municipal ordinance in the Town of Wytheville requires buildings to be connected to the town water system and prohibits the use of private potable individual water wells. The former Alco Facility and adjacent properties are within the area served by the town water system and therefore, the ordinance prevents exposure to the groundwater.

4.0 CORRECTIVE ACTION OBJECTIVES

A. Soils

DEQ has determined that industrial risk based levels are protective of human health and the environment for individual contaminants at this Facility provided that Lots 1 and 3 are not used for residential purposes. Therefore, DEQs Corrective Action Objective for Facility soils is to control exposure to the hazardous constituents remaining in soils by requiring compliance with and maintenance of land use restrictions for Lots 1 and 3. In addition, an agency approved Materials Management Plan will be required for any soil excavation and/or management at the Facility. The requirement for a Materials Management Plan and the land use restrictions will be imposed by a Uniform Environmental Covenants Act (UECA) covenant.

B. Groundwater

VDEQ has determined that drinking water standards, namely Maximum Contaminant Levels (MCLs) or tap-water Regional Screening Levels (RSLs) for constituents that do not have an MCL, for COCs in groundwater at the Facility are protective of human health and the environment. VDEQ's Corrective Action Objectives for Facility groundwater are the following:

1. To control exposure to the hazardous constituents in the groundwater by requiring compliance with and maintenance of a groundwater use restriction at the Facility as long as drinking water standards are exceeded. This restriction will be imposed by a UECA covenant;
2. To remediate groundwater using an In-Situ injection treatment along with monitored natural attenuation (MNA), or other groundwater remediation technology approved by the VDEQ; and
3. To monitor concentrations of the following hazardous constituents in groundwater until drinking water standards are met or until such time as it can be shown that the concentrations demonstrate a generally stable or decreasing trend:

Remedial Cleanup Goals

Constituent	Remedial Goal (ug/L)	Basis
1,1,1-trichloroethane (1,1,1-TCA)	200	EPA Drinking Water MCL
1,1-dichloroethene (1,1- DCE)	7	EPA Drinking Water MCL
1,1-dichloroethane (1,1- DCA)	2.8	EPA Tap Water RSL
1,4-dioxane	0.46	EPA Tap Water RSL

ug/L = micrograms per liter

5.0 SUMMARY OF PROPOSED REMEDY

A. Summary

Under this proposed remedy, VDEQ is requiring the following actions:

1. Conduct an in-situ injection to treat affected groundwater followed by MNA, or other remediation technology approved by VDEQ.
2. The Facility shall continue to monitor groundwater pursuant to an approved groundwater monitoring plan, and any revisions thereto, until such time as it can be shown that the concentrations of hazardous constituents have met the remedial goals set forth on the table in Section 4.0 or until such time as it can be shown that the concentrations of hazardous constituents demonstrate a generally stable or decreasing trend.
3. Maintain compliance with land use restrictions and institutional controls. Institutional controls will be imposed by the UECA covenant and include the following:
 - A. Lots 1 and 3 of the Facility shall not be used for residential purposes or for children's (under the age of 16) daycare facilities, schools, or playground purposes.
 - B. Groundwater beneath the property shall not be used for any purposes except for environmental monitoring and testing, or for non-contact industrial use as may be approved by VDEQ. Any new groundwater wells installed at the Facility area must be approved by VDEQ.
 - C. Excavation and/or management of soil in Lots 1 and 3 shall be conducted in accordance with a VDEQ-approved Materials Management Plan. Future modifications at the Facility that could be reasonably understood to adversely affect or interfere with the integrity or protectiveness of the final remedy will be evaluated to identify and address those potential impacts or interferences. VDEQ shall approve any requested removal, disturbance, or

alteration at the property, including, but not limited to groundwater monitoring wells, unless the removal, disturbance, or alteration violates a deed restriction or creates unacceptable risk to human health or the environment.

B. Implementation

VDEQ proposes to implement the remedy through the existing and future UECA covenants. Therefore, VDEQ does not anticipate any regulatory constraints in implementing its remedy.

C. Reporting Requirements

Compliance with and effectiveness of the proposed remedies and institutional controls at the Facility shall be evaluated and reported to VDEQ in accordance with reporting requirements in future covenants.

6.0 EVALUATION OF VDEQ'S PROPOSED DECISION

This section provides a summary of the criteria used to evaluate the proposed decision for groundwater, consistent with EPA guidance. The criteria are applied in two phases. In the first phase, three decision threshold criteria are evaluated as general goals. In the second phase, for those remedies which meet the threshold criteria, seven balancing criteria are evaluated to determine which proposed decision alternative provides the best relative combination of attributes.

The Facility's *Corrective Measures Study*, dated May 6, 2016, documents the screening of corrective measure alternatives for groundwater. Remedial technologies that could potentially meet the corrective measure objectives were researched. Many remedial technologies were immediately excluded from evaluation due to site-specific conditions and access issues that pose technical and logistical challenges. These access restrictions include buildings, aboveground and underground utilities, and other structures. Potentially suitable remedial technologies that could meet the corrective action objectives were evaluated against the following three RCRA threshold criteria:

- Overall protection of human health and the environment
- Achievement of media clean up goals
- Remediating the source of the releases

Alternatives that passed the RCRA threshold criteria evaluation were then screened against the seven RCRA balancing criteria:

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume of wastes
- Short-term effectiveness
- Implementability

- Community and state acceptance (based on input received on other aspects of project)
- Relative cost

Evaluation of the retained alternatives resulted in the recommendation of modified biogeochemical reductive dechlorination (BiRD) with monitoring as the remedial technology for groundwater. Current site conditions demonstrate that although groundwater concentrations remain above MCLs, the previous remediation using ZVI reduced and stabilized groundwater and surface water VOC concentrations for multiple years. However, the increase in 1,1,1-TCA concentrations in groundwater samples collected on site in 2015 indicates that the ZVI has reduced the effectiveness, likely due to the passivation of the iron in the ZVI. The proposed modified BiRD technology is more likely to achieve the remedial goals because it will establish favorable conditions for long term biological degradation. Although the previous remediation did not have a noticeable impact on 1,4-dioxane concentrations, modified BiRD also has the potential to create conditions for cometabolic degradation of 1,4-dioxane by naturally occurring methanotrophic organisms.

7.0 ENVIRONMENTAL INDICATORS

Under the Government Performance and Results Act (“GPRA”), EPA has set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental indicators for each facility: (1) Current Human Exposures Under Control and (2) Migration of Contaminated Groundwater Under Control. The Facility met these indicators on September 28, 2009 and September 17, 2010, respectively.

8.0 FINANCIAL ASSURANCE

Financial assurance will be required for ongoing operation and maintenance costs associated with the proposed remedy decision including corrective/remedial measures, groundwater monitoring, and institutional controls.

Within ninety (90) calendar days of final acceptance of the proposed decision and corrective measures remedy by the VDEQ via the Final Decision and Response to Comment (FDRTC) document, the Permittee shall submit a cost estimate for completing the approved remedies. The estimate may be based on the Corrective Measure Study, the approved remedies, or any other available information.

Within thirty (30) calendar days of approval of the cost estimate for financial assurance, the Permittee shall demonstrate compliance with financial assurance to the Department for completing the approved remedies. Within thirty (30) calendar days of approval of any revised cost estimate, the Permittee shall demonstrate to the Department financial assurance for the updated cost estimates.

9.0 PUBLIC PARTICIPATION

Interested persons are encouraged to review the AR and are invited to comment on VDEQ's proposed decision. The Administrative Record contains all the information considered by VDEQ for its proposed remedy for the Facility. The public comment period will last thirty (30) calendar days from the date the notice is published in a local newspaper. Comments may be submitted by mail, e-mail, or phone to Ryan Kelly at the address listed below. VDEQ will hold a public meeting to discuss the proposed decision upon request. Requests for a public meeting should be made to Ryan Kelly.

Virginia Department of Environmental Quality
629 East Main Street
P.O. Box 1105
Richmond, VA 23218
Contact: Mr. Ryan J. Kelly
Phone: (804) 698 - 4045
Email: ryan.kelly@deq.virginia.gov

VDEQ will respond to all relevant comments received during the comment period. If it's determined that new information warrant a modification to the proposed decision, VDEQ will modify the proposed decision or select other alternatives based on such new information and/or public comments. VDEQ will announce its final decision and explain the rationale for any changes in the FDRTC. All persons who comment on this proposed decision will receive a copy of the FDRTC. Others may obtain a copy by contacting Ryan Kelly at the address listed above.

Date: 6/13/17



Chris Evans, Director
Office of Remediation Programs
Virginia Department of Environmental Quality

Attachments

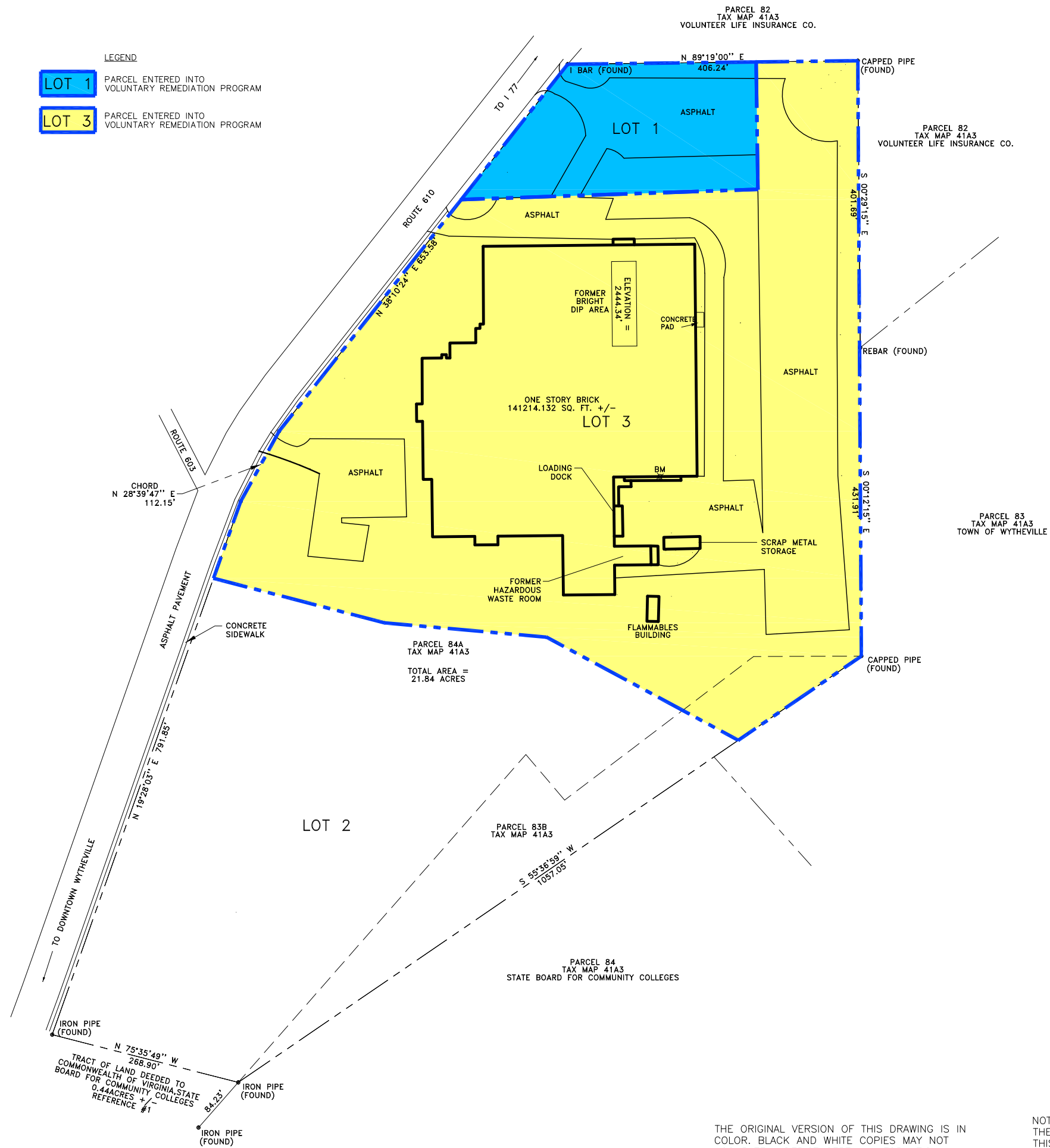
Figure 1 – Survey Plat

R:\ACAD\CADD\00005927-Wytheville\CAD\00005927-066.dwg 2/28/2017 3:13 PM USEC01012

B

LEGEND

- LOT 1** PARCEL ENTERED INTO VOLUNTARY REMEDIATION PROGRAM
- LOT 3** PARCEL ENTERED INTO VOLUNTARY REMEDIATION PROGRAM

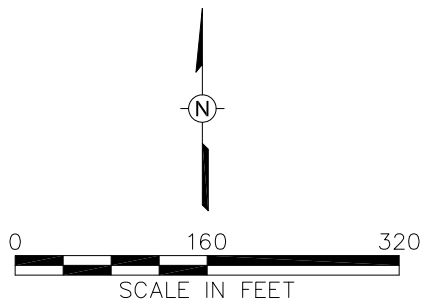


REFERENCE:

- 1: WYTHE COUNTY, VA. TOWN OF WYTHEVILLE PROPERTY OF A. EMERSON ELECTRIC CO. INC. B. COMMONWEALTH OF VA SURVEYED BY H. L. LOUTHEN, C.L.S. DATE: 1-2-86
- 2: INSTRUMENT # 000000883 RECORDED IN CLERKS OFFICE OF WYTHE ON MARCH 17, 2000
- 3: HIGHWAY PLAT BOOK 2 PAGE 16
- 4: BOUNDARY SURVEY OF A PORTION OF THE LANDS OF ACME MARKETS OF TAZEWELL, VA. INC. LOCATED IN THE TOWN OF WYTHEVILLE, VA. SCALE: 1" = 100' DATE: JULY 28, 1981 BY: CHARLES F. QUINN
- 5: WYTHE COUNTY, VIRGINIA TOWN OF WYTHEVILLE PROPERTY OF J WAYNE JOHNSON, BRENDA C JOHNSON AND GLAYDES J RIDER DB 329 PG 857 SURVEYED BY: H.L. LOUTHEN C.L.S. DATE: FEB. 23, 1989
- 6: PLAT OF PHYSICAL SURVEY OF PARCEL OF WYTHEVILLE CORPORATION PROPERTY BEING CONVEYED TO THE WYOMISSING CORPORATION WYTHEVILLE, VA. SCALE 1"=100' DATE: 2-17-65 REV. 2-24-65 BY: HOMER D. WINTER, JR
- 7: WYTHE COUNTY, VA. TOWN OF WYTHEVILLE PROPERTY OF WYTHEVILLE COMPANY SURVEYED BY: H.L. LOUTHEN C.L.S. DATE: JULY 18, 1979 REV. AUG. 23, 1979
- 8: BASEMAP PROVIDED BY APPLALACHIAN ENGINEERING & SURVEYING, INC.

THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A PROFESSIONAL. DO NOT ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF WSP USA CORP.



Drawn By: EGC
 Checked:
 Approved: *[Signature]* 2/28/2017
 DWG Name: 00005927-066

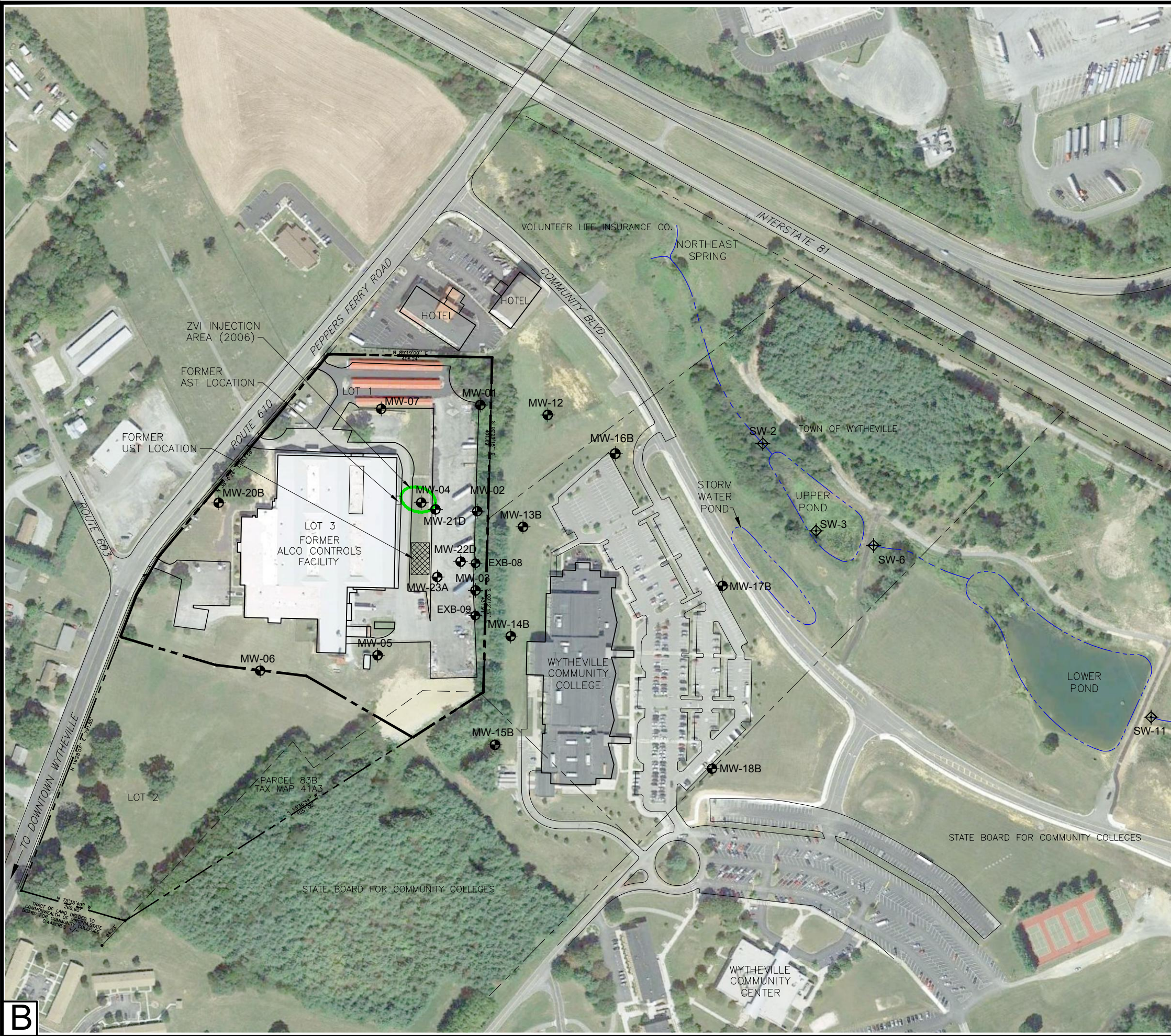
FORMER ALCO CONTROLS FACILITY
 WYTHEVILLE, VIRGINIA
 PREPARED FOR
 EMERSON
 ST. LOUIS, MISSOURI

Figure 1
 SITE PLAN

WSP | PARSONS BRINCKERHOFF
 WSP USA Corp.
 13530 Dulles Technology Drive, Suite 300
 Herndon, Virginia 20171
 (703) 709-6500
 www.wspgroup.com/usa

Figure 2 – Groundwater Monitoring Network

R:\ACAD\CADD\00005927-Wytheville\CAD\00005927-065.dwg 3/2/2017 2:10 PM USEC01012



LEGEND

- MONITORING WELL
- SURFACE WATER SAMPLE LOCATION
- APPROXIMATE PROPERTY BOUNDARIES

NOTES:

1. GOOGLE EARTH AERIAL PHOTOGRAPH, DATED 09/16/2015.
2. AERIAL PHOTOGRAPHS USED FOR THIS ILLUSTRATION CONTAIN INHERENT DISTORTIONS RESULTING FROM THE PHOTOGRAPHIC PROCESS THAT MAY RESULT IN SLIGHT MISALIGNMENTS WITH THE SURVEYED SITE FEATURES.
3. CONCENTRATION CONTOURS BASED ON APRIL 2016 SAMPLING DATA.



THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK AND WHITE COPIES MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

NOTICE: THIS DRAWING HAS BEEN PREPARED UNDER THE DIRECTION OF A PROFESSIONAL. DO NOT ALTER THIS DOCUMENT IN ANY WAY WITHOUT THE WRITTEN CONSENT OF WSP USA CORP.

Drawn By: EGC
 Checked:
 Approved: 2/28/2017
 DWG Name: 00005927-065

FORMER ALCO CONTROLS FACILITY
 WYTHEVILLE, VIRGINIA
 PREPARED FOR
 EMERSON
 ST. LOUIS, MISSOURI

FIGURE 2

SITE OVERVIEW

WSP USA Corp.
 13630 Dulles Technology Drive, Suite 300
 Herndon, Virginia 20171
 (703) 709-6500
 www.wspgroup.com/usa

Administrative Record – Index of Documents for Statement of Basis

FORMER EMERSON ELECTRIC CORPORATION – LOTS 1 and 3
WYTHEVILLE, VIRGINIA
EPA ID NO. VAD065415457

ADMINISTRATIVE RECORD
INDEX OF DOCUMENTS FOR STATEMENT OF BASIS

This index includes documents that the Virginia Department of Environmental Quality (VDEQ) relied upon to develop and propose the final remedy selection determination described in the Statement of Basis. These documents were prepared for the former Emerson Electric Corporation facility and are listed chronologically by document date.

1. Feb 9, 2007, *Voluntary Remediation Report Former Alco Controls Lot 1*, WSP Environmental Strategies LLC.
2. October 8, 2008, Facility Lead Corrective Action Agreement between EPA and (signed by) Emerson.
3. September 28, 2009, *RCRA Corrective Action Human Health Environmental Indicator (HHEI) Determination Report*, VDEQ.
4. October 29, 2009, *Supplemental Groundwater Characterization Report*, WSP Environment and Energy.
5. September 17, 2010, *RCRA Corrective Action Groundwater Environmental Indicator Determination Report*, VDEQ.
6. August 16, 2011, *Revised Risk Assessment Work Plan, Former Alco Controls Facility*, WSP Environment and Energy.
7. October 13, 2011, *Risk Assessment Workplan – Approval*, VDEQ.
8. April 5, 2013, *Human Health Risk Assessment for Soils*, WSP Environment and Energy.
9. October 13, 2014, *Vapor Intrusion Assessment: Former Alco Controls Facility*, WSP.
10. April 16, 2015, *Final Decision and Response to Comments Former Emerson Electric Corporation – Lot 2*, VDEQ.
11. May 6, 2016, *Corrective Measures Study Former Alco Controls*, WSP.

12. May 26, 2017, *Groundwater and Surface Water Quality Monitoring Report*, WSP.