



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF LAND PROTECTION AND REVITALIZATION

OFFICE OF REMEDIATION PROGRAMS

STATEMENT OF BASIS

Former New River Foundry

**1701 West Main Street
Radford, Virginia
EPA ID No. VAD981730930**

June 10, 2019

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I. INTRODUCTION

The Virginia Department of Environmental Quality (VDEQ) has prepared this Statement of Basis (SB) for the former New River Foundry (NRF) property located at 1701 West Main Street, Radford, Virginia 24141 (hereinafter referred to as the Facility) to solicit public comment on its proposed final remedy. VDEQ's proposed decision requires the Facility to maintain certain property mechanisms known as Institutional Controls (ICs). The proposed controls are discussed in Section V below. This SB highlights key information relied upon by VDEQ in selecting its proposed remedy for the site.

The Facility is subject to the Corrective Action 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. Sections 6901 to 6992k. 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 property. Information on the Corrective Action Program can be found by navigating <http://www.epa.gov/reg3wcmd/correctiveaction.htm>.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which VDEQ's proposed decision is based. See Section IX, Public Participation, for information on how you may review the AR.

II. FACILITY BACKGROUND

The Facility is located at 1701 West Main Street in Radford, Virginia. The approximately 66-acre property was formerly owned and operated as an iron foundry beginning in the 1890s. Foundry operations were conducted until 2014. The previous owner decommissioned, dismantled and removed much of the foundry equipment from the Facility in late 2015 and early 2016.

Various foundry buildings have operated on the property since the 1890s. The former New River Foundry became operational in 1977 and produced medium-sized iron parts for automobiles, farm equipment and construction equipment. Castings were formed in green sand molds with phenolic urethane cores. The Facility was heavily automated and featured two production lines. The former New River Foundry was owned and operated by subsidiaries of Internet Corporation from 1977 until May 2010 when it was sold to Virginia Casting Industries, LLC. Virginia Casting Industries, LLC owned and operated the Facility until March 2012 when the Facility was sold to Grede Radford, LLC. Grede Radford, LLC owned and operated the Facility until early 2014 when the Facility closed. The property is now owned by Radford Trading, LLC. There have been no ongoing operations at the Facility since 2014.

The Facility is bounded by the demolished Former Radford Foundry to the North; the New River to the West; railroad tracks and parking lots to the South; and West Main Street to the East. A facility layout map is included as Figure 1.

Numerous hazardous chemicals, non-hazardous chemicals, and petroleum products were historically used during the manufacturing process. The raw chemicals and petroleum products were stored in small aboveground storage tanks (ASTs), 55-gallon drums, and carboys.

Solid non-hazardous wastes generated at the facility included commercial wastes (trash, cardboard, pallets, drums, bags, etc.), foundry production wastes (used sand, used/broken cores, carbide slag, cupola slag, used refractory, baghouse dust, used air pollution bags or filters, used grinding wheels), and waste fluids (oil, metal cleaner, rust preventive testing fluids, spent scrubber liquid, etc.). Commercial waste was disposed off-site through contracted trash hauling services. Foundry production wastes were formerly disposed at on-site landfills until the landfills were full. After the landfills were full, the foundry production wastes were transported off-site for disposal at off-site facilities.

III. SUMMARY OF ENVIRONMENTAL HISTORY

A report entitled *Description of Current Conditions, RCRA Corrective Action Program* was prepared by Groundwater and Environmental Services, Inc. in April 2003 concerning the Facility. The report contains background information about the Facility, a history of site operations, and descriptions of site geology and hydrogeology. The report identified 72 Solid Waste Management Units (SWMUs) and two Areas of Concern (AOCs) at the Facility and made recommendations concerning the need for further evaluation or additional sampling at each SWMU and AOC. Additional investigations were thereafter conducted, including a RCRA Facility Investigation by Intermet in 2004 and a Targeted Brownfield Assessment by U.S. EPA in 2011. Subsequent investigation reports include the *Phase I Investigation Summary Report, RCRA Corrective Action Program*, dated February 2005, and the *Targeted Brownfields Assessment Report, ASTM Phase II Environmental Assessment, Virginia Casting Industries Property, New River Foundry, Radford, Virginia*, dated July 30, 2012. After reviewing the results of these investigations, VDEQ determined that a quantitative risk assessment should be conducted for the environmental media at 46 SWMUs. A report containing that assessment was submitted by Haley & Aldrich, Inc. in February 2017 entitled *Report on Former New River Foundry*. A letter responding to VDEQ's comments was submitted to the agency in September 2018 followed by an addendum submitted in January 2019 to address one additional VDEQ comment. The February 2017 report and associated documents were approved by VDEQ by letter dated February 26, 2019. Additional details on the risk assessment, groundwater screening results, and releases are found below.

Risk Assessment and Results

For purposes of conducting the quantitative risk assessment, the 46 SWMUs were evaluated based on the assumption that similar exposures would occur within certain groupings of SWMUs. Accordingly, three Exposure Areas (EA) were designated for soil and one EA was designated for groundwater. The EAs are depicted on Figure 2. The text below summarizes the EAs and their respective SWMUs.

Exposure Area 1 (EA1):

Exposure Area 1 included the following SWMUs located along the south and west boundaries of the Facility that handled and stored large quantities of solid and slurry foundry waste:

- Cement Lining Pond (SWMU #53),
- Dust Slurry Pond (SWMU #54),

- Dust Slurry Drying Pond (SWMU #55),
- Original Landfill (SWMU #64), and
- Southwest Landfill (SWMU #65).

This exposure area represented portions of the Facility that are not located near existing buildings, are presently unpaved, and are generally in or near the floodplain of the New River. Given the proximity of this area to the river and floodplain, it is unlikely that buildings would (or legally could) be constructed there.

Exposure Area 2 (EA2):

Exposure Area 2 included the following SWMUs located within and adjacent to the existing and former New River Foundry buildings:

- Former dust collectors (SWMUs #1 through #12, #15 through #17, #22, #56, and #57),
- Foundry waste holding bin (SWMU #14),
- Container Storage Area (SWMU #18),
- New River Waste Building (SWMU #21),
- Waste, Used Oil, and Drum Storage Areas and Tanks (SWMUs #49, #50, #73, and #74),
- Drum Storage Pad & Sump (SWMU #51),
- Calcium Carbide Slag Treatment Area (SWMU #52),
- Special Foundry Waste Pile (SWMU #67),
- DMEA Spill Area (SWMU #68),
- Facility Storm Water System (SWMU #70),
- New River Hazardous Waste Trailer (SWMU #71),
- Scrap Metal Receiving and Storage Area (SWMU #75),
- Transformers (SWMUs #76 and #78),
- Ladle Lining/Pipe Processing Building – Painting Area (SWMU #79),
- Pipe Foundry Iron Yard (AOC #1 / SWMU #80),
- Degreaser Station (SWMU #13),
- MCF Grit Removal Unit (SWMU #19),
- MCF Waste Sand Holding Bin (SWMU #20),
- Black Sand Handling Area (SWMU #69), and
- Basement Compressor Area (SWMU #77).

This exposure area represented portions of the Facility that are located near or beneath existing buildings, and that are generally paved or covered with hardscape. This area of the Facility could support new buildings for re-developed commercial/industrial uses.

Exposure Area 3 (EA3):

Exposure Area 3 included the Former Baseball Field (SWMU #62) located across the railroad tracks from the main portion of Facility. This area is physically separated from the other exposure areas.

Exposure Area 4 (EA4):

Exposure Area 4 included groundwater associated with the former New River Foundry related to the following monitoring wells:

- OW-1A
- OW-1B
- RFIMW-2
- RFIMW-3
- RFIMW-4
- MW-16
- MW-17D
- MW-18
- MW-19
- MW-20
- MW-21
- MW-25
- MW-26
- USTMW-4
- USTMW-5
- USTMW-6

The quantitative risk assessment was performed using the Virginia Unified Risk Assessment Model (VURAM) software developed by VDEQ in 2016. Results of the VURAM risk analysis, which include individual and cumulative risks and hazards for constituents of concern (COCs), were compared to the following limits:

- Total cumulative hazard index of 1.0 or less for non-carcinogens;
- Total cumulative risk of 1E-04 or less for all carcinogens.

The results of the quantitative risk assessment indicated that all cancer risks and hazard index values are below VDEQ RCRA risk management thresholds for a future commercial/industrial use of the Facility for all environmental media and pathways, with two exceptions. First, the soil from SB-28, a soil boring located within EA1 at SWMU 55, contained cadmium, lead, manganese, and thallium concentrations at 5-6 feet below ground surface that present an unacceptable direct contact risk to commercial/industrial workers or construction workers. Because surface soil samples were not collected at this SWMU, the risk assessment was based on the conservative assumption that subsurface soil quality was representative of surface soil quality. SWMU 55 is in or near the floodplain of the New River, and it is unlikely that development would (or legally could) occur in this area.

Second, shallow groundwater at monitoring well MW-21 contained naphthalene at concentrations that would present an unacceptable vapor inhalation risk to construction workers in a trench if the groundwater is less than 15 feet below ground surface. This monitoring well is situated at the bottom of a slope in the New River floodplain, and it is unlikely that development

would (or legally could) occur in this area. The proposed remedy set forth in this Statement of Basis is designed to address these risks.

Groundwater Screening Results

Groundwater sampling was conducted at the site in 2004 during the RCRA Facility Investigation and in 2011 as part of the Targeted Brownfields Assessment. Details on the sampling, location of the well network, and the analytical data for each event can be found in the associated historical submittals noted above.

U.S. EPA and VDEQ utilize drinking water standards, namely U.S. EPA drinking water Maximum Contaminant Levels (MCLs), or tap water Regional Screening Levels (RSLs) for constituents that do not have an MCL, for groundwater data screening purposes. The available groundwater data was screened and the results of the groundwater evaluation are as follows:

- The following volatile organic compounds (VOCs) were identified in at least one location in exceedance of applicable screening criteria: 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene; Chloroform; and Naphthalene.
- The following semi-volatile organic compounds (SVOCs) were identified in at least one location in exceedance of applicable screening criteria: Benzo(a)anthracene; Benzo(a)pyrene; Benzo(b)fluoranthene; Benzo(k)fluoranthene; 2-Methylnaphthalene; Chrysene; Dibenzofuran; and Naphthalene.
- The following metals were identified in at least one location in exceedance of screening criteria: Aluminum; Antimony; Arsenic; Cobalt; Iron; Lead; Manganese; Selenium; and Vanadium.

Screening levels for the following constituents identified above are based on MCLs: benzo(a)pyrene, antimony, arsenic, lead (U.S. EPA action level), and selenium. The screening levels for all other identified constituents are based on the tap water RSLs using the Hazard Index (HI) = 0.1. A majority subset of the identified constituents meet the applicable screening criteria using a HI = 1.0. In addition, it should be noted that most of the SVOCs exceedances were “J” flagged/qualified by the laboratory which introduces a level of uncertainty about the reported concentrations.

The identified exceedances of VOCs, SVOCs, and metals are not linked to any specific SWMUs/AOCs or source areas. Based on site-specific data obtained from the Phase I RFI, the New River is the discharge point and hydraulic barrier for the property. All groundwater beneath the Facility ultimately discharges to the New River, preventing any migration of constituents in groundwater beyond the river.

Historical Releases

Releases have been documented at the Facility. A release of chemicals from a truck was reported in 2005. The spill was assigned Incident Response (IR) # 2005-W-0274. This IR# was closed by VDEQ in June 2005. A spill of approximately 20 gallons of hydraulic fluid was reported in 2008 and was assigned IR# 2008-W-0339. This IR# was closed by VDEQ in May 2008.

IV. CORRECTIVE ACTION OBJECTIVES

4.1 Soil

VDEQ's Corrective Action Objective for Facility soils is to control exposure to any hazardous waste constituents remaining in soils by requiring compliance with institutional controls at the Facility that are further described in Section V below. The controls will limit the Facility to non-residential uses and require compliance with a Materials Management Plan prepared by Haley & Aldrich, Inc. dated September 2018. Subsequent owners will also be required to comply with these controls.

4.2 Groundwater

VDEQ's Corrective Action Objective for groundwater at the Facility is to control exposure to any hazardous constituents in the groundwater by requiring compliance with institutional controls at the Facility that are further described in Section V below. The controls will prohibit use of groundwater for potable purposes and require compliance with a Materials Management Plan prepared by Haley & Aldrich, Inc. dated September 2018. Subsequent owners will also be required to comply with these controls. These controls will remain in effect until data is presented demonstrating that groundwater meets drinking water standards and poses no risk to human health.

V. PROPOSED REMEDY

VDEQ's proposed decision represents "Corrective Action Complete with Controls" as described in U.S. EPA's "Final Guidance on Completion of Corrective Action Activities at RCRA Facilities", (68 FR 8757, February 25, 2003). A Corrective Action Complete with Controls determination indicates that protection of human health and the environment has been achieved and will continue as long as the necessary operation and maintenance actions are performed and institutional controls are maintained and complied with. Institutional controls are required to restrict the Facility to non-residential uses, control the excavation and management of soil, and prohibit the potable use of groundwater beneath the Facility. VDEQ's proposed remedy for the Facility consists of the ICs identified below.

VDEQ anticipates that the land use restrictions will be implemented by an environmental covenant pursuant to the Virginia Uniform Environmental Covenants Act (UECA), Title 10.1, Chapter 12.2, Sections 10.1- 1238-10.1-1250 of the Code of Virginia (Environmental Covenant).

5.1 Compliance with and Maintenance of Institutional Controls (ICs)

Because contamination remains in the soil and groundwater at the Facility, VDEQ's proposed final remedy includes land use restrictions to minimize the potential for human exposure to soil and groundwater that contains contaminants above levels of concern and to minimize the potential for construction workers in a trench to inhale vapor from groundwater above levels of concern. The land use restrictions will be implemented through institutional controls (ICs). ICs are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use and inform subsequent purchasers of the environmental conditions at the Facility and of VDEQ's final remedy for the Facility.

VDEQ is proposing the following ICs be implemented and maintained at the Facility:

- To ensure that potential exposures to hazardous constituents in soil and groundwater encountered during construction or other intrusive activities are minimized, the then owner of the Facility shall comply with, and ensure that its contractors comply with, the Materials Management Plan prepared by Haley & Aldrich, Inc. dated September 2018, as the same may be amended by VDEQ.
- Groundwater beneath the Facility shall not be used for potable purposes unless and until it is demonstrated to VDEQ that its use will not pose a threat to human health or the environment and VDEQ provides prior written approval of such use.
- The Facility property shall not be used for residential purposes unless it is demonstrated to VDEQ that residential use will not pose a threat to human health or the environment and VDEQ provides prior written approval for such use.

Compliance with the ICs shall be reported and maintained in accordance with the forthcoming environmental covenant.

5.2 Implementation

VDEQ is proposing that the Facility pursue an environmental covenant pursuant to the Virginia Uniform Environmental Covenants Act (UECA), Title 10.1, Chapter 12.2, Sections 10.1-1238 through 10.1-1250 of the Code of Virginia.

VI. EVALUATION OF VDEQ'S PROPOSED DECISION

6.1 Threshold Criteria

This section provides a description of the criteria VDEQ used to evaluate the proposed remedy consistent with U.S. EPA guidance. VDEQ evaluated three remedy threshold criteria as general goals.

6.1.1 Protect Human Health and the Environment

The proposed remedy will prohibit use of the entire Facility property for residential purposes. The proposed residential use restriction for the entire Facility is due to the past industrial use of the property. ICs will be imposed to prevent or minimize exposure to residual contamination.

6.1.2 Achieve Media Cleanup Objectives

The proposed remedy will achieve the media cleanup objectives. Land use restrictions, as required by the proposed remedy, will control exposure to any hazardous constituents remaining in surface soils and groundwater.

6.1.3 Remediating the Source of Releases

There are no known, unaddressed releases. Previous releases were identified and addressed under VDEQ oversight.

6.2 Balancing/Evaluation Criteria

6.2.1 Long-Term Effectiveness

The proposed remedy will provide long-term protection of human health and the environment. In addition, land and groundwater use restrictions prohibiting residential land use and potable use of groundwater beneath the Facility will be maintained until potential risks are demonstrated to be otherwise.

6.2.2 Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents

The areas at the Facility that present risk are limited in areal extent and are in or near the floodplain, meaning they are unlikely to be developed. The quantitative risk assessment demonstrates that these areas are best managed through the use of ICs. Accordingly, the proposed remedy does not include treatment to reduce the toxicity, mobility or volume of hazardous constituents.

6.2.3 Short-Term Effectiveness

The Facility is vacant and there is no current or ongoing risk. Therefore, the short-term effectiveness is high.

6.2.4 Implementability

VDEQ's proposed remedy is readily implementable. With respect to the implementation of the ICs and as part of the proposed remedy, the Facility will pursue an environmental covenant under the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, Sections 10.1-1238-10.1-1250 of the Code of Virginia. Therefore, VDEQ does not anticipate any regulatory constraints in implementing its proposed remedy.

6.2.5 Cost

VDEQ's proposed remedy is cost effective since the only remaining corrective action (CA) activities include the recordation of the UECA covenant and ongoing inspection and maintenance of the institutional controls.

6.2.6 Community Acceptance

VDEQ will evaluate community acceptance of the proposed remedy during the public comment period, which will last thirty (30) days. VDEQ's final decision and comments accepted during the public comment period will be addressed in the Final Decision and Response to Comments (FDRTC).

6.2.7 Federal Agency Acceptance

VDEQ and U.S. EPA coordinated on the proposed remedy. If U.S. EPA provides comments during the public comment period, VDEQ will address them in the FDRTC.

VII. ENVIRONMENTAL INDICATORS

Under the Government Performance and Results Act (GPRA), U.S. EPA has set national goals to address RCRA corrective action facilities. Under GPRA, U.S. EPA evaluates two key environmental clean-up indicators for each facility: (1) Current Human Exposures Under Control and (2) Migration of Contaminated Groundwater Under Control. The Facility met both the Human Health and Groundwater indicators on September 30, 2004.

VIII. FINANCIAL ASSURANCE

Since the final remedy for the Facility is limited to institutional controls, financial assurance for corrective action is not warranted or required for the Facility.

IX. PUBLIC PARTICIPATION

Before VDEQ makes a final decision of its proposal for the Facility, the public may participate in the remedy selection process by reviewing this SB and documents contained in the AR for the Facility. The AR contains all information considered by VDEQ in reaching this proposed decision. The Administrative Record, including the SB, is available for review during normal business hours at:

Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23219
Contact: Ryan Kelly
Phone 804-698-4045
Fax 804-698-4234
Email ryan.kelly@deq.virginia.gov

Interested parties are encouraged to review the AR and comment on VDEQ's proposed remedy. The public comment period will last thirty (30) calendar days from the date that the notice is published in a local newspaper. You may submit comments by mail, fax, or email to Ryan Kelly, VDEQ Corrective Action Project Manager. VDEQ will hold a public meeting to discuss the proposed remedy upon request which should also be made to Ryan Kelly whose contact information is listed above.

VDEQ will respond to all relevant comments received during the comment period. If VDEQ determines that new information warrants a modification to the proposed remedy, VDEQ will modify the proposed remedy or select other alternatives based on such new information in the FDRTC. All persons who comment on this SB will receive notice of the FDRTC.

Date: _____

6/10/19

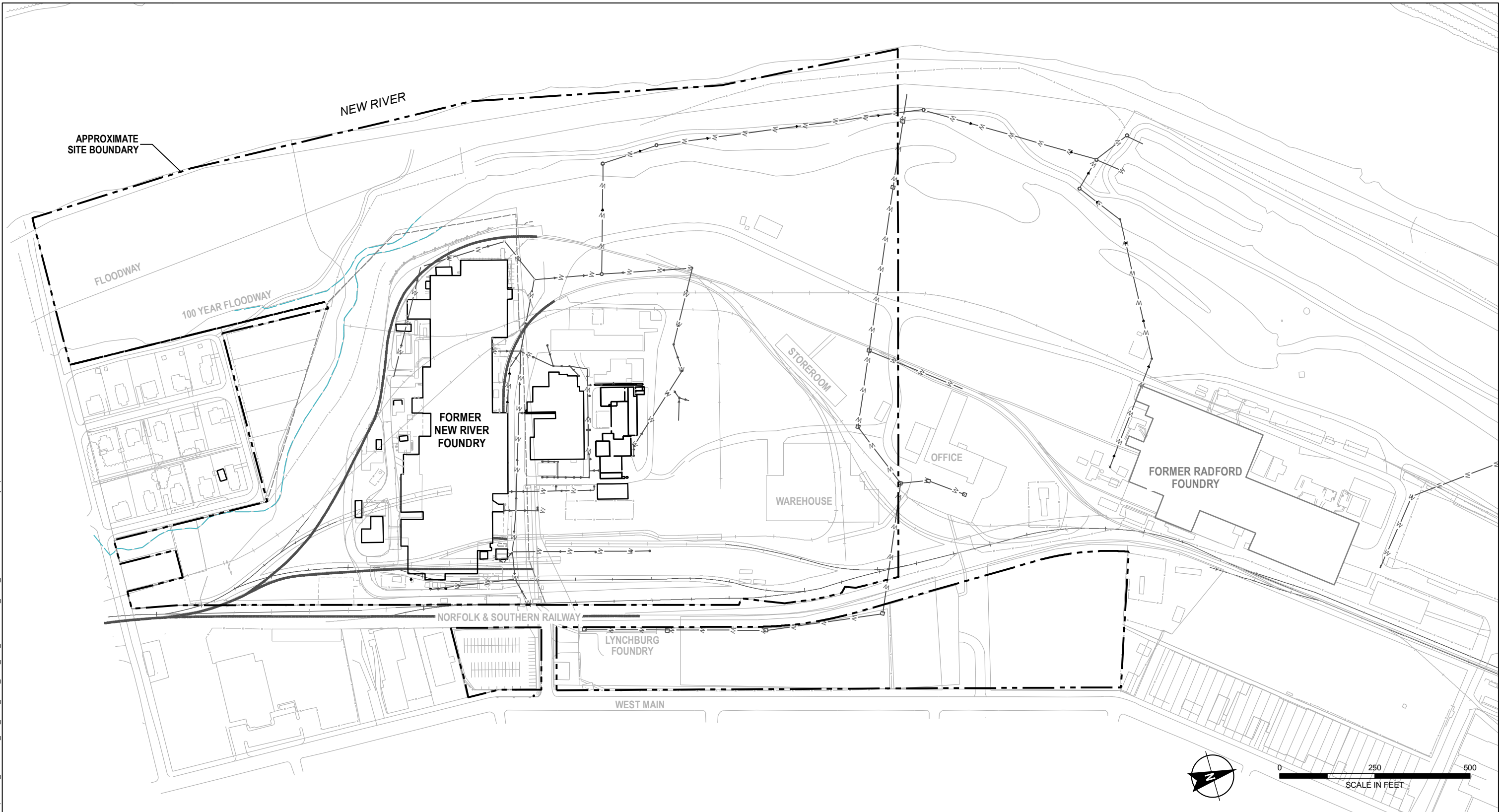


Chris Evans, Director
Office of Remediation Programs

Attachments

Figure 1 – Facility Layout Map

GIS FILE PATH: C:\ajospel\Projects\128697\Maps\2019_05\128697_005_0001_SOIL_AND_GW_EXPOSURE_RISK_AREAS2.mxd — USER: ajospel — LAST SAVED: 5/3/2019 2:12:31 PM



NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. BASE MAP SOURCE: CAD DRAWING PREPARED BY GROUNDWATER & ENVIRONMENTAL SERVICES DATED FEBRUARY 2002.

**HALEY
ALDRICH**

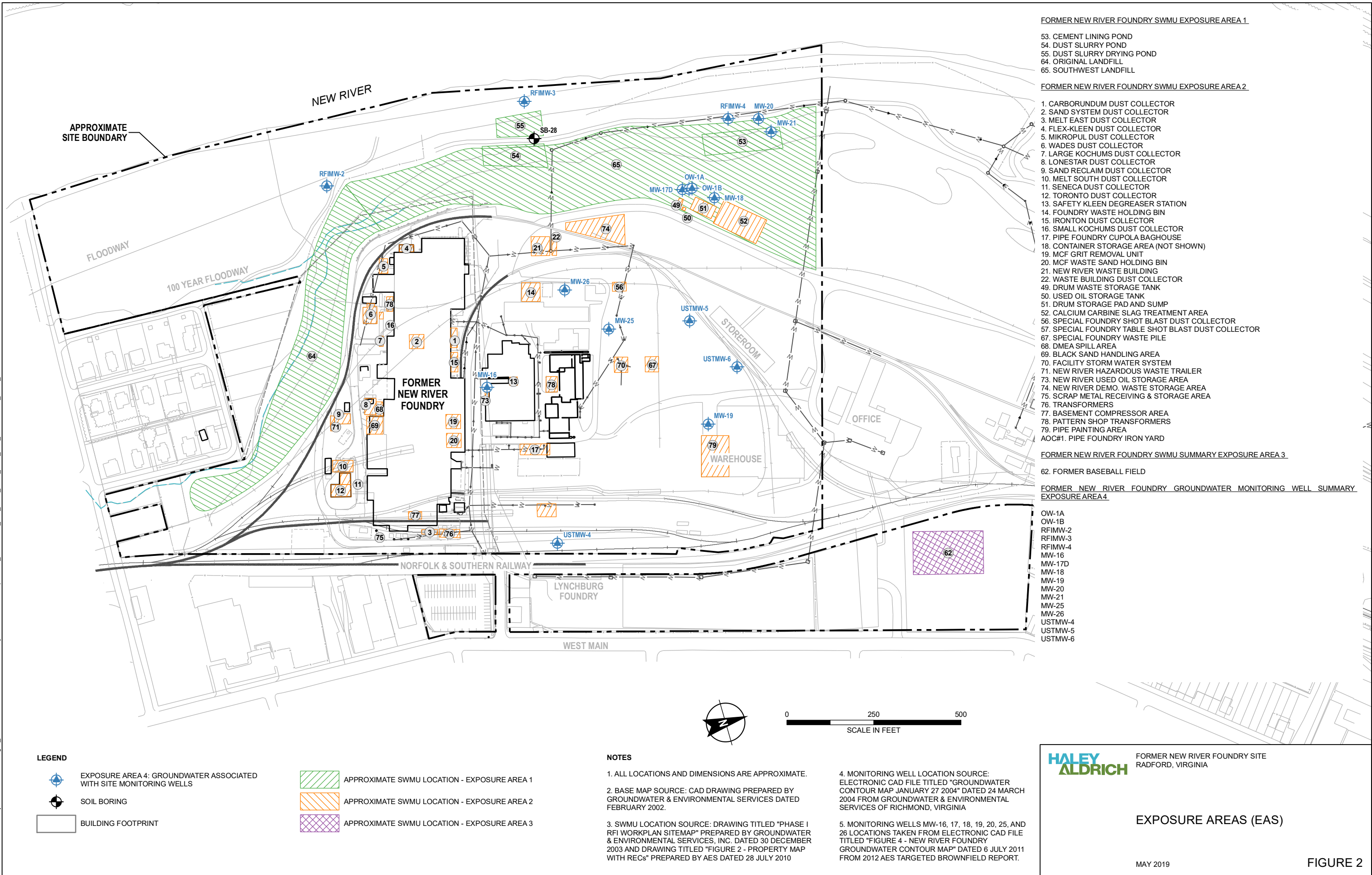
FORMER NEW RIVER FOUNDRY SITE
RADFORD, VIRGINIA

FACILITY LAYOUT MAP

MAY 2019

FIGURE 1

Figure 2 – Exposure Areas (EAs)



Administrative Record – Index of Documents for Statement of Basis

Former New River Foundry
EPA ID No. VAD981730930
Radford, Virginia

Administrative Record
Index of Documents for Statement of Basis – June 10, 2019

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 New River Foundry facility and are listed chronologically by document date.

1. “Description of Current Conditions, RCRA Corrective Action program”, prepared by GES, April 2003.
2. Documentation of Environmental Indicator Determination – Current Human Exposures Under Control, USEPA, dated September 30, 2004.
3. Documentation of Environmental Indicator Determination – Migration of Contaminated Groundwater Under Control, USEPA, dated September 30, 2004.
4. “Phase I Investigation Summary Report, RCRA Corrective Action Program,” prepared by GES for Internet Corporation, dated February 2005.
5. “Phase II RFI Workplan, Internet Corporation, Radford, Virginia,” prepared by GES, dated March 1, 2007.
6. “Targeted Brownfield Assessment Report” and “ASTM Phase II Environmental Site Assessment,” prepared by Advanced Environmental Solutions, Inc., dated July 2012.
7. “Report on Former New River Foundry” and risk assessment prepared by Haley & Aldrich, Inc., dated February 2017.
8. Letter from Ryan Kelly at VDEQ to Monty Bennett at Haley & Aldrich, Inc. dated January 22, 2018 providing comments on the “Report on Former New River Foundry” and risk assessment.
9. Letter from Monty Bennett at Haley & Aldrich, Inc. to Ryan Kelly at VDEQ dated September 19, 2018 responding to VDEQ’s January 22, 2018 comments and transmitting Materials Management Plan.
10. Materials Management Plan prepared by Haley and Aldrich, Inc. dated September 2018.
11. Letter from Monty Bennett at Haley & Aldrich, Inc. to Ryan Kelly at VDEQ dated January 9, 2019 providing an addendum to Haley & Aldrich’s September 19, 2018 response to VDEQ’s January 22, 2018 comments.

12. Letter from Monty Bennett at Haley & Aldrich, Inc. to Ryan Kelly at VDEQ dated February 1, 2019 providing an addendum-revision #1 to Haley & Aldrich's September 19, 2018 response to VDEQ's January 22, 2018 comments.
13. Letter from to Ryan Kelly at VDEQ to Tom Bishop at Radford Trading dated February 26, 2019 determining that the RCRA facility investigation is complete and approving the "Report on Former New River Foundry" and risk assessment prepared by Haley & Aldrich, Inc., dated February 2017 as well as subsequent submittals.