(5) 56.00

VIRGINIA LAND RECORD COVER SHEET
FORM A – COVER SHEET CONTENT

Instrument Date: 5/9/2018
Instrument Type: DRC
Number of Parcels: 1 Number of Pages: 79
[ ] City [X] County
CHESTERFIELD

TAX EXEMPT? VIRGINIA/FEDERAL LAW
[ ] Grantor:
[ ] Grantee:
Consideration: $0.00
Existing Debt: $0.00
Actual Value/Assumed: $0.00
PRIOR INSTRUMENT UNDER § 58.1-803(D):
Original Principal: $0.00
Fair Market Value Increase: $0.00

RECORDED IN
CHESTERFIELD COUNTY, VA
WENDY S. HUGHES
CLERK OF CIRCUIT COURT
FILED May 09, 2018
AT 03:39 pm
BOOK 11975
START PAGE 1024
END PAGE 1103
INSTR # 180016885

LDJ

(Area Above Reserved For Deed Stamp Only)

Original Book Number: Original Page Number: Original Instrument Number:
Prior Recording At: [ ] City [X] County
Percentage In This Jurisdiction: 100%

BUSINESS / NAME
1 [X] Grantor: ADVANSIX RESINS & CHEMICALS LLC
[ ] Grantor:
1 [X] Grantee: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
[ ] Grantee:

GRANTEE ADDRESS
Name: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Address: 1650 ARCH STREET 3LC20
City: PHILADELPHIA State: PA Zip Code: 19103
Book Number: 11404 Page Number: 596 Instrument Number:
Parcel Identification Number (PIN): PARCEL 2 Tax Map Number: 836646258100000
Short Property Description: PARCEL 2

Current Property Address 4151 BERMUDA HUNDRED ROAD
City: CHESTER State: VA Zip Code: 23836
Instrument Prepared By: WOOD EI & S Recording Paid By: ADVANSIX
Recording Returned To: KENNETH W. TOMKO
Address: 4101 BERMUDA HUNDRED ROAD
City: CHESTER State: VA Zip Code: 23836

Document Prepared by and
After Recording Return to:
Amec Foster Wheeler Environment & Infrastructure, Inc.
751 Arbor Way, Hillcrest 1, Suite 180
Blue Bell, PA 19422
GPIN No.: 836646258100000
Remediation Program Site ID#VAD023690183

UECA ENVIRONMENTAL COVENANT

This environmental covenant is made and entered into as of the 9TH day of MAY, 2018, by and between AdvanSix Resins & Chemicals LLC, a Delaware limited liability company whose address is 300 Kimball Drive, Suite 101, Parsippany, NJ 07054 (hereinafter referred to as the "Grantor" or "Owner"), a "Grantor" for indexing purposes, and AdvanSix Inc., a Delaware corporation, whose address also is 300 Kimball Drive, Suite 101, Parsippany, NJ 07054 (hereinafter referred to as "Grantee" or "Holder").

The United States Environmental Protection Agency, Region 3, whose address is Office of Remediation, 3LC20, 1650 Arch Street, Philadelphia, PA 19103-2029 (hereinafter referred to as the "Agency"), a Grantee for indexing purposes, also joins in this environmental covenant.

This environmental covenant is executed pursuant to the Virginia Uniform Environmental Covenants Act, § 10.1-1238 et seq. of the Code of Virginia ("UECA"). This environmental covenant subjects the property identified in Paragraph 1 to the activity and use limitations in this document. The Agency shall be considered as an Additional Grantee for recordation purposes.

1. Property Affected. The real property affected (Property) by this environmental covenant is located at 4151 Bermuda Hundred Road, Chester, Virginia, and is further described as follows:

All that certain lot or parcel of land located in Chesterfield County, Virginia, designated as Parcel 2, on that certain ALTA/ACSM Land Title Survey entitled "PLAT OF TWO PARCELS OWNED BY HONEYWELL INTERNATIONAL INC., 4101 BERMUDA HUNDRED ROAD, KNOWN AS HONEYWELL CHESTERFIELD FACILITY, BERMUDA DISTRICT, CHESTERFIELD, VIRGINIA," and recorded on January 6, 2004, in the Clerk's Office of the Circuit Court Clerk,of Chesterfield County, Virginia, in Plat Book 140, Pages 23-34, and more particularly described as follows:

Commencing at a point located on the eastern right of way line of Route 10 and the southern right of way line of Allied Road, State Route 827, thence along the southern right of way line of Allied Road, State Route 827 easterly direction 1.4± miles to a rod found, thence leaving said right of way line South 45 degrees 28 minutes 48 seconds East a distance of 3861.04 feet to a rod found, thence North 44 degrees 31 minutes 45 second East a distance of 579.84 feet to a rod found online, thence North 44 degrees 31 minutes 45 second East a distance of 17 feet plus or minus to a point, said point lying in the centerline of Shand Creek, thence along the centerline of said creek in a southeastern direction a distance of 1160 feet

plus or minus to a point, said point being the TRUE POINT AND PLACE OF BEGINNING 2, thence North 05 degrees 56 minutes 30 seconds West a distance of 101 feet plus or minus to a rod found on line, thence North 05 degrees 56 minutes 30 seconds West a distance of 1951.91 feet to a rod found, thence North 79 degrees 57 minutes 23 seconds East a distance of 589.02 feet to a mag nail found, thence North 69 degrees 48 minutes 13 seconds East a distance 210.59 feet to a rod found, thence South 69 degrees 19 minutes 06 seconds East a distance 406.18 feet to a rod found, thence North 62 degrees 24 minutes 04 seconds East a distance of 539.03 feet to a rod found online, thence North 62 degrees 24 minutes 04 seconds East a distance of 29.99 feet to a point, thence South 33 degrees 39 minutes 10 seconds East a distance of 710.00 feet to a point, thence South 18 degrees 53 minutes 01 seconds East a distance of 418.20 feet to a point, thence North 71 degrees 09 minutes 11 seconds East a distance of 30.06 feet to a rod found online, thence North 71 degrees 09 minutes 11 seconds East a distance of 221.77 feet to a rod found, thence North 18 degrees 15 minutes 47 seconds West a distance of 366.69 feet to a rod found, thence North 71 degrees 45 seconds 17 minutes East a distance of 472.44 feet to a rod set, thence South 18 degrees 24 minutes 13 seconds East a distance of 466.68 feet to a rod found, thence North 71 degrees 05 minutes 31 seconds East a distance of 322.84 feet to a rod found, thence North 14 degrees 49 minutes 13 seconds West a distance of 594.09 feet to a rod found, thence North 09 degrees 02 minutes 37 seconds East a distance of 657.88 feet to a mag nail set, thence South 82 degrees 49 minutes 37 seconds East a distance of 850.56 feet to a rod found, thence South 19 degrees 25 minutes 22 seconds West a distance of 1332.86 feet to a rod found, thence South 25 degrees 13 minutes 24 seconds East a distance of 127.57 feet to a rod found, thence South 25 degrees 13 minutes 24 seconds East a distance of 110 feet plus or minus to a point, said point lying at the mean low water mark of James River, thence along the mean low water mark of the James River and Appomattox River as they converge in a northeasterly direction for 4006 feet to a point, thence leaving said rivers North 31 degrees 31 minutes 42 seconds West a distance of 959 feet plus or minus to a point, said point being the TRUE POINT AND PLACE OF BEGINNING 2, and containing 172.89± acres of land more or less.

2. Description of Contamination & Remedy.

a. The name and location of the administrative record for the environmental response project reflected in this UECA environmental covenant is at:

USEPA Region III
Office of Remediation 3LC10
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

b.

i. The contamination and final remedy are described in the Final Decision for the Property, attached hereto as Exhibit A.

Based on historical information about the facility operations, the USEPA has identified 11 solid waste management units ("SWMUs") on the Property known as SWMUs 1, 3, 4, 5, 6, 8, 12, 13, 14, 17 and 18 and the Western Cooling Water Ditch ("WCWD"), that received historical releases from the facility

operations. In addition, historical releases have impacted the site-wide groundwater under the Property. The SWMUs, the portions of the WCWD on the Property and the site-wide groundwater are described below and depicted on Exhibit B.

A. SWMU 1

SWMU 1 consists of four spray fields numbered 1 through 4, respectively. Combined, they occupy approximately 40 acres located to the south of the operations area. From 1975 until 2000, these spray fields were part of the facility wastewater application system. Spray Field #1 is located approximately 400 feet west of the WCWD and approximately 80 feet north of the James River. Spray Field #2 is located north of Spray Field # 1 and is situated between two surface water bodies, the WCWD and a swale leading to the ditch. Spray Field #3 is located immediately south of the SWMU 18 Pond 3 and is bordered by the WCWD on the west, the eastern cooling water drainage ditch on the east, and the James River approximately 100 feet to the south. Spray Field #4 is located east-northeast of SWMU 18 Pond 3, approximately 70 feet east of the eastern cooling water drainage ditch, and is bordered by the James River to the south and east.

Soil analytical data from the RCRA Facility Investigation ("RFI") indicated that no volatile organic compounds ("VOCs") or semi-volatile organic compounds ("SVOCs") exceeded their respective Agency regional screening levels ("RSLs") or ecological criteria. Groundwater data indicated that several VOCs and SVOCs were detected exceeding their respective federal maximum contaminant levels ("MCLs") for drinking water promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 C.F.R. Part 141 and/or RSLs upgradient, downgradient and side gradient. The final remedy for SWMU 1 is corrective action complete with controls.

B. SWMU 3

SWMU 3 is a closed, unlined landfill that was operated from 1971 to 1974. It is located southwest of the operations area just off of Barn Road. SWMU 3 occupies an area approximately 3.5 acres in size and is approximately 20 feet deep. Waste deposited in SWMU 3 included nylon, polyester, polyethylene polymers and fiber scrap, depolymerization bottoms from nylon recovery, lab chemicals, dyes, surfactants, cardboard, and paper. SWMU 3 was capped with 6 to 12 inches of clay/bentonite, covered with 18 inches of topsoil, and seeded with grasses. SWMU 3's surface slopes to the east/southeast and is vegetated with grass. There is a 20-foot elevation change from the west side of SWMU 3 to the east side. Storm water ditches associated with a site roadway lead east from SWMU 3 to the WCWD to carry surface water runoff from the area to the James River.

Groundwater impacts by tetrachloroethene and trichloroethene have been identified exceeding MCLs downgradient and side gradient. Trend analysis concluded that a decreasing trend is present in two wells monitoring this SWMU. The final remedy for SWMU 3 is maintenance of the existing cover system under an Agency-approved cap management plan.

C. SWMU 4

SWMU 4 is a former unlined acid pond in which laboratory wastes were reportedly placed. The pond was approximately 102 feet by 52 feet by 6 feet deep. In 1975, the liquid was pumped out of the pond and transported to an off-site disposal facility. It is reported that approximately one foot of sludge remained in the bottom of the pond (5 to 6 feet below ground surface) after pumping, and it was allowed to air dry. The pond was then backfilled with local clean soils and vegetated. The current footprint of SWMU 4 is defined as a rectangle measuring 100 feet by 125 feet for a total of 12,500 square feet.

The RFI identified soil and groundwater impacts by VOCs and SVOCs. The majority of the VOC mass is 1,1,1-trichloroethane, tetrachloroethene, and trichloroethene. The majority of the SVOC mass is biphenyl and caprolactam. These contaminants were identified in groundwater exceeding screening levels. The impacted soil area encompasses an area of approximately 53,000 square feet, the majority of which is situated outside of the SWMU area in the subsurface. At some locations, dense non-aqueous phase liquid is present at residual saturation and has been historically recovered from a well as free product.

The remedy selected for SWMU 4 is a circumferential slurry wall, multi-layer membrane cover system, and groundwater extraction wells in the interior of the containment to maintain inward hydraulic gradients.

D. SWMU 5

SWMU 5, known as the Woods Dump, is reportedly an unlined disposal unit 50 feet by 50 feet by 10 feet deep that accepted approximately 1,000 cubic yards of material. It is located just inside the tree line, approximately 600 feet southwest of SWMU 3. SWMU 5 is situated at an approximate elevation of 40 feet above mean sea level and slopes to the southwest toward an intermittent swale leading to Shand Creek. SWMU 5 was reportedly used for the disposal of open top drums holding general laboratory chemicals between 1972 and 1975. The drums reportedly contained acids as well as benzene, cresols, nitrobenzene, dyes and pigments, lab packs and lab reagents. SWMU 5 was reportedly closed with an unknown amount of fill material and vegetated.

The RFI data indicated that no VOCs or SVOCs were detected in soil or groundwater exceeding RSLs or MCLs. The final remedy for SWMU 5 is corrective action complete with controls.

E. SWMU 6

SWMU 6, the Woods Storage Unit, is located just inside the tree line on the west bank of the WCWD alongside SWMU 1 Spray Field #2. SWMU 6 was utilized for drum placement in the early 1970s. The area measures approximately 20 feet by 175 feet. Historical information indicates that approximately 150 drums were removed from SWMU 6 in April 1985. SWMU 6 is currently vegetated with bushes and trees.

The RFI did not identify soil or groundwater impacts. The final remedy for SWMU 6 is corrective action complete with controls.

F. SWMU 8

SWMU 8, the Formic Acid Pit, is located within SWMU 1 Spray Field #3, approximately 400 feet west from the WCWD and approximately 80 feet north of the James River. The exact location of the pit in the field is not known. Based on historical information, a 10 foot by 3 foot by 9 foot pit was excavated in 1976 for soil characterization for the land application system. The excavation, while open, was utilized one time for the disposal of approximately 175 gallons of formic acid. The pit was then backfilled with soil and the area seeded with grasses. The RFI concluded that disposal activity at SWMU 8 did not cause an environmental impact that could be distinguished from the spray field in which it is located. The final remedy for SWMU 8 is corrective action complete with controls.

G. SWMU 12

SWMU 12, the Process Waste Sludge Pit, is an unlined trapezoid-shaped unit, 140 feet long by 60 feet on the north end and 100 feet on the south end. This pit is located east of SWMU 18 Pond #3. SWMU 12 was used one time, in 1976, for the disposal and drying of sludge from the Process Waste Ponds. Approximately 44,640 cubic feet of sludge were deposited in the SWMU 12 for drying. The sludge was covered with three feet of clean silt material and seeded. Currently, SWMU 12 is vegetated with grass and slopes gently to the east toward the eastern cooling water drainage ditch.

The RFI identified VOC and SVOC impacts in groundwater exceeding RSLs, and identified carbazole and tetrachloroethene impacts in soils exceeding RSLs. The final remedy selected for SWMU 12 is excavation and removal of impacted materials with offsite disposal.

H. SWMU 13

SWMU 13, the Sanitary Stabilization Pond Sludge Pit, consists of an unlined pit 140 feet by 120 feet by 2.5 feet deep located northeast of SWMU5 and south of SWMU 3. SWMU 13 is at an approximate elevation of 45 feet above mean sea level, and is relatively flat. The north side of SWMU 13 slopes gently to the north toward the SWMU 3. SWMU 13 was used one time in 1977 for the disposal and drying of sludge from the SWMU 18 ponds. The area around SWMU 13 is currently covered with grass. The RFI did not identify soil or groundwater impacts. The final remedy for SWMU 13 is corrective action complete with controls.

I. SWMU 14

SWMU 14, the Filter Plant Sludge Drying Basins, consists of three basins located west of SWMU 3. The basins were located in an area 188 feet by 166 feet by 2 feet deep. They were used between 1976 and 1979 to dry sludge from the water treatment plant supplying the facility's water. The basins received approximately 172,500 cubic feet of filter plant sludge, which was formed from the addition of soda ash and alum to the raw water supply. In 1979, the basins were closed and the area of the former drying basins is currently covered by asphalt pavement. The RFI did not identify soil or groundwater impacts. The final remedy for SWMU 14 is corrective action complete with controls.

J. SWMU 17

SWMU 17, the Sanitary Stabilization Pond, was a lined pond that covers 5.2 acres. The Pond is located south of the operations area between the eastern and western cooling water drainage ditch. The pond historically received domestic wastewater from the Facility operations, but ceased to receive wastewater in 1992.

The RFI did not identify soil impacts, but identified several compounds in downgradient monitoring wells. The final remedy for SWMU 17 is corrective action complete with controls.

K. SWMU 18

SWMU 18 consists of three ponds, two of which (Ponds #1 and #2) are on the adjacent property and are addressed by a separate environmental covenant. Pond #3 is on the Property south of the main plaint as shown in Exhibit B. Pond #3 has a surface area of approximately 1.3 acres. Pond #3 has a bentonite bottom, and synthetic liner with erosion control liners along its slopes. No groundwater or soil impacts have been identified at SWMU 18. No further action is required for SWMU 18.

L. WCWD

The WCWD is a channel approximately 3,770 feet long that is situated on the western side of the Facility. At its northern upstream extent, the WCWD primarily conveys surface water runoff from adjacent vegetated areas and a facility service road. On the south side of Barn Road, permitted facility outfalls discharge non-contact cooling water into the WCWD at a rate of approximately 8-10 million gallons per day. Downstream of the outfall, the WCWD continues another roughly 2,000 feet until it discharges into the James River. The portion of the WCWD downstream of the outfall is tidally influenced by the James River.

The RFI identified diphenyl ether, biphenyl and 1,1-dichloroethane as compounds of potential concern in sediment at the WCWD. Ecological risk assessment results show that portions of the WCWD should be remediated. A screening level ecological risk assessment of surface water and sediment in the WCWD was conducted in 2006. This assessment concluded that the contaminants of concern in the WCWD were diphenyl ether, biphenyl and 1,1-dichlorothane.

The surface of the WCWD area is heavily vegetated, but there potentially is a complete exposure pathway for future construction workers and ecological receptors. The final remedy for the WCWD consists of a multi-layer sediment cover with long-term monitoring at discrete sections of the WCWD.

M. Site-Wide Groundwater

In November 2014, site-wide groundwater sampling was conducted for groundwater in the Recent Alluvium unit (shallow aquifer) and the Potomac Aquifer (deep aquifer), including monitoring wells upgradient and down gradient of the SWMUs onsite. Within the shallow aquifer on the Property, the maximum concentrations of compounds exceeding MCLs and/or RSLs included biphenyl at 1,870 µg/l, 1,4-dioxane at 756 µg/l, 2-chlorophenol at 98.7 µg/l, naphthalene at 11.5 µg/l, N-nitrosodiphenylamine at 14.7 µg/l, 1,1,1-trichloroethane at 6,060 µg/l, 1,1-dichloroethane at 3,050 µg/l, 1,1-dichloroethene at 16.8 µg/l, 1,2,4-trichlorobenzene at 3.4 µg/l, 1,4-dichlorobenzene at 2.6 µg/l, benzene at 1,040 µg/l, chloroform at 0.29 µg/l, cis-1,2-dichloroethene at 66,600 µg/l, ethylbenzene at 28.2 µg/l, tetrachloroethene at 576 µg/l, toluene at 1,120 µg/l, trichloroethene at 1,970 µg/l, vinyl chloride at 11,800 µg/l and xylene at 377 µg/l. Within the deep aquifer on the Property, the maximum concentrations of compounds exceeding the MCLs and/or RSLs included biphenyl at 11.5 µg/l, 1,4-dioxane at 1,260 µg/l, 2-chlorophenol at 373 µg/l, 2-methylphenol at 1,040 µg/l, caprolactam at 19,600 µg/l, naphthalene at 3.1 µg/l, 1,1-dichloroethane at 3,590 µg/l, 1,1-dichloroethene at 820 µg/l, benzene at 380 µg/l, chloroform at 63.8 µg/l, 1,2 dichloroethane at 149 µg/l, cis-1,2-dichloroethene at 3,200 µg/l, ethylbenzene at 32.2 µg/l, methylene chloride at 187 µg/l, 1,1,2,2,-

tetrachloroethane at 22.5 µg/l, tetrachloroethene at 18.2 µg/l, 1,1,2-trichloroethane at 47.2 µg/l, trichloroethene at 38.3 µg/l and vinyl chloride at 206 µg/l.

There are no current pathways of exposure to site-wide groundwater. The remedy for site-wide groundwater is compliance with a long-term groundwater monitoring plan to address contamination that is naturally attenuating, and compliance with and maintenance of groundwater and land use restrictions.

3. Activity & Use Limitations.

a. The Property is subject to the following activity and use limitations, the locations of which are specifically set forth in Exhibit B. These activity and use limitations shall run with the land and become binding on Grantor and any successors, assigns, tenants, agents, employees, and other persons under Grantor's control, until such time as this covenant may terminate as provided by law:

i. The Property shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to the Agency that such use will not pose a threat to human health or the environment and the Agency provides prior written approval for such use. "Residential purposes" include, but are not limited to, all purposes that provide for living accommodations (not including temporary overnight accommodations ancillary to the industrial or commercial use of the property) or health or educational services (e.g. dormitories, senior citizen housing, any day care facility whether for infants, children, the infirm, or the elderly, but not including limited health or educational services ancillary to the industrial or commercial use of the property).

ii. Any earth moving activities, including excavation, drilling and construction activities, in the areas at the Property where any contaminants remain in soils above the Agency's screening levels for non-residential use, or in groundwater above the federal maximum contaminant levels ("MCLs") for drinking water promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 C.F.R. Part 141 (or Agency regional screening levels if no MCL has been adopted for a specific constituent), shall be conducted in accordance with the Agency-approved materials management plan.

iii. No new wells shall be installed on the Property unless the Agency gives its prior written approval based on a demonstration that either (A) such wells are necessary to implement the final remedy selected by the Agency, or (B) the use of groundwater from such wells for other purposes will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy.

iv. Groundwater at the Property shall not be used for any purpose other than implementation of the final remedy selected by the Agency unless the Agency gives its prior written approval for such use based on a demonstration that

such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy.

v. A vapor intrusion control system shall be installed in any new structures constructed above a groundwater plume that exceeds the Agency's regional screening levels for vapor intrusion, or within one hundred (100) feet of the perimeter of such a plume, unless it is demonstrated to the Agency that vapor intrusion does not pose unacceptable risk to human health and the Agency provides written approval that no vapor intrusion control system is needed.

b. Geographic coordinate lists.

Geographic coordinate lists defining the boundary of each activity and use restriction depicted as a polygon, as well as a figure showing the polygon that the coordinate lists depict, are provided in Exhibit B.

4. Notice of Limitations in Future Conveyances. Each instrument hereafter conveying any interest in the Property subject to this environmental covenant shall contain a notice of the activity and use limitations set forth in this environmental covenant and shall provide the recorded location of this environmental covenant.

5. Compliance and Use Reporting.

a. By the end of December 2018 and whenever else requested in writing by the Agency, the then current owner of the Property shall submit to the Agency and any Holder listed in the Acknowledgments below written documentation stating whether or not the activity and use limitations in this environmental covenant are being observed. This documentation shall be signed by a qualified and certified professional engineer who has inspected and investigated compliance with this environmental covenant.

b. In addition, within one (1) month after any of the following events, the then current owner of the Property shall submit to the Agency and any Holder listed in the Acknowledgments below written documentation describing the following: noncompliance with the activity and use limitations in this environmental covenant; transfer of the Property; changes in use of the Property; or filing of applications for building permits for the Property and any proposals for any site work, if such building or proposed site work will affect the contamination on the Property subject to this environmental covenant.

6. Access by the Holder and the Agency. In addition to any rights already possessed by the Holder and the Agency, this environmental covenant grants to the Holder and the Agency a right of reasonable access to the Property in connection with implementation, inspection, or enforcement of this environmental covenant.

7. Recording & Proof & Notification.

a. Within 90 days after the date of the Agency's approval of this UECA environmental covenant, the Grantor shall record, or cause to be recorded, this environmental covenant with the Clerk of the Circuit Court of Chesterfield County, Virginia. The Grantor shall likewise record, or cause to be recorded, any amendment, assignment, or termination of this UECA environmental covenant with the Clerk of the

Circuit Court of Chesterfield County within 90 days of their execution. Any UECA environmental covenant, amendment, assignment, or termination recorded outside of these periods shall be invalid and of no force and effect.

b. The Grantor shall send a recorded copy of this environmental covenant, and of any amendment, assignment, or termination, to the Holder and the Agency within 60 days of recording. Within that time period, the Grantor also shall send a recorded copy to the chief administrative officer of each locality in which the Property is located, any persons who are in possession of the Property who are not the Grantors, any signatories to this covenant not previously mentioned, and any other parties to whom notice is required pursuant to the Uniform Environmental Covenants Act.

8. Termination or Amendment. This environmental covenant is perpetual and runs with the land unless terminated or amended (including assignment) in accordance with the UECA.

9. Enforcement of Environmental Covenant. This environmental covenant shall be enforced in accordance with § 10.1-1247 of the Code of Virginia.

ACKNOWLEDGMENTS:

GRANTOR, ADVANSIX RESINS & CHEMICALS LLC, a Delaware limited liability company

Date 2/23/18 By (signature): Michael Preston

Name (printed): Michael Preston

Title: CFO

STATE OF NEW JERSEY
COUNTY OF MORRIS

The foregoing instrument was executed and acknowledged before me, the undersigned notary public, by Michael Preston, as CFO of AdvanSix Resins & Chemicals LLC, a Delaware limited liability company on behalf of the company, this 23 day of Feb, 2018.

My commission expires: August 12, 2020

Notary Public [affix seal] Daniel Jaworski

HOLDER, ADVANSIX INC., a Delaware corporation

Date 2/23/18 By (signature): Michael Preston

Name (printed): Michael Preston

Title: CFO

STATE OF NEW JERSEY
COUNTY OF MORRIS

The foregoing instrument was executed and acknowledged before me, the undersigned notary public, by Michael Preston, as CFO of AdvanSix Inc., a Delaware limited liability company on behalf of the company, this 23 day of Feb., 2018.

My commission expires: Aug. 13, 2020

Notary Public [affix seal] Daniel Josinski

AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPROVED by the United States Environmental Protection Agency as required by § 10.1-1238 et seq. of the Code of Virginia.

Date _____ By (signature): _____

Name (printed): _____

Title: _____

SEEN AND RECEIVED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Date 3/12/2018 By (signature): _____

Name (printed): Brett Fisher

Title: Team Leader, RCRA Corrective Action

AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

APPROVED by the United States Environmental Protection Agency as required by § 10.1-1238 et seq. of the Code of Virginia.

Date 4.6.18 By (signature): _____

Name (printed): John A. Armstead

Title: Director, LCD

STATE OF Pennsylvania)

COUNTY OF Philadelphia)

On this 6 day of April, 2018, before me, the undersigned officer, personally appeared John Armstead, who acknowledged him/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that he freely executed the same for the purposes therein contained as the Director, Land and Chemicals Division – EPA, Region III, for and on behalf of said agency.

In witness whereof, I hereunto set my hand and official seal.

Pamela McCray

Notary Public

My commission expires: December 17, 2021

Commonwealth of Pennsylvania – Notary Seal
Pamela McCray, Notary Public
Philadelphia County
My commission expires December 17, 2021
Commission Number 1280785

Exhibit A

Final Decision

AdvanSix Resins & Chemicals LLC, Chesterfield Facility, 4101 Bermuda Hundred Road, Chester, Virginia, April 2017

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

FINAL DECISION
ADVANSIX RESINS & CHEMICALS LLC
CHESTERFIELD FACILITY
4101 BERMUDA HUNDRED ROAD
CHESTER, VIRGINIA

PURPOSE

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC or Final Decision) selecting the Final Remedy for the AdvanSix Resins & Chemicals LLC Chesterfield Facility, formerly known as the Honeywell Chesterfield Facility (RCRA ID number VAD023690183) (Facility) located in Chester, Virginia. The Final Decision is issued pursuant to 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, et seq.

On March 17, 2017, EPA issued a Statement of Basis (SB) in which it described the information gathered during environmental investigations at the Facility and proposed a Final Remedy. The SB is hereby incorporated into this Final Decision by reference and made a part hereof as Attachment A.

This FDRTC selects the remedy that EPA evaluated under the SB. Consistent with the public participation provisions under RCRA, EPA solicited public comment on its proposed Final Remedy. On March 17, 2017, notice of the SB was published on the EPA website: [https://www.epa.gov/aboutepa/epa_virginia] and in The Petersburg Progress Index. The thirty (30) day comment period ended on April 17, 2017.

EPA did not receive any comments on the SB; thus, the remedy proposed in the SB is the Final Remedy selected by EPA for the Facility.

FINAL DECISION

EPA's Final Remedy for the Facility consists of the following:

- Monitored natural attenuation until drinking water standards are met;
- Operation and maintenance of a slurry wall, cover containment structure and the contingent groundwater extraction system at Solid Waste Management Unit 4, (SWMU-4);
- Excavation and removal of sludge materials at SWMU-12, a former process waste sludge pit;

- Installation and maintenance of a multi-layer sediment cover with long-term monitoring at discrete sections of the Western Cooling Water Ditch (WCWD);
- Installation and maintenance of a vapor control system in the onsite warehouse building or a demonstration approved by EPA that vapor intrusion does not pose unacceptable risk to human health;
- Development and implementation of a Cap Management Plan (CMP) specific to SWMU 3, 4 and the WCWD and a Materials Management Plan (MMP); and,
- Compliance with and maintenance of the CMP, the MMP and other land and groundwater use restrictions.

DECLARATION

Based on the Administrative Record compiled for the corrective action at the Facility, I have determined that the remedy selected in this Final Decision and Response to Comments, which incorporates the March 17, 2017 Statement of Basis, is protective of human health and the environment.

Date: 4-19-17

Catherine A. Libertz

Catherine A. Libertz, Acting Director
Land and Chemicals Division
U.S. Environmental Protection Agency, Region III

Attachment A: Statement of Basis (March 2017)

Attachment A

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

ADVANSIX RESINS & CHEMICALS LLC
CHESTERFIELD FACILITY
4101 BERMUDA HUNDRED ROAD
CHESTER, VIRGINIA

EPA ID NO. VAD023690183

Prepared by
Office of Remediation
Land and Chemicals Division
March 2017

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List of Acronyms

AOC	Areas of Concern
AR	Administrative Record
COCs	Contaminants of Concern
COPC	Compounds of Potential Concern
CMS	Corrective Measures Study
DNAPL	Dense Non-Aqueous Phase Liquids
EPA	Environmental Protection Agency
FDRTC	Final Decision Response to Comments
IM	Interim Measures
MCL	Maximum Contaminant Level
MSL	Mean Sea Level
PAH	Polycyclic Aromatic Hydrocarbon
PRG	Preliminary Remediation Goals
CAO	Corrective Action Objective
RBC	Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RSL	Regional Screening Level
SB	Statement of Basis
SLERA	Screening Level Ecological Risk Assessment
SWMU	Solid Waste Management Unit
SVOC	Semi-Volatile Organic Compound
TOC	Total Organic Carbon
VOC	Volatile Organic Compound
WCWD	Western Cooling Water Ditch

Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the AdvanSix Resins & Chemicals LLC (AdvanSix) Chesterfield Facility located in Chester, Virginia (hereinafter referred to as the Facility or Site). EPA's proposed remedy for the Facility consists of the following components: 1) construction of a slurry wall and multi-layer membrane cover containment structure with monitored natural attenuation of downgradient groundwater impacts at a former unlined acid pond (SWMU 4); 2) excavation and removal of sludge materials at a former process waste sludge pit (SWMU 12); 3) installation of a multi-layer sediment cover with long-term monitoring at discrete sections of the Western Cooling Water Ditch; 4) compliance with a long-term groundwater monitoring plan to address site-wide groundwater contamination that is naturally attenuating; and, 5) compliance with and maintenance of groundwater and land use restrictions to be implemented through institutional controls. This SB highlights key information relied upon by EPA in proposing its remedy for the Facility.

The Facility is subject to EPA's Corrective Action program under the Solid Waste Disposal Act, as amended, commonly referred to as the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq. The Corrective Action program requires that facilities subject to certain provisions of RCRA investigate and address releases of hazardous waste and hazardous constituents, usually in the form of soil or groundwater contamination, that have occurred at or from their property.

EPA is providing a thirty (30) day public comment period on this SB. EPA may modify its proposed remedy based on comments received during this period. EPA will announce its selection of a final remedy for the Facility in a Final Decision and Response to Comments (Final Decision) after the public comment period has ended.

A fact sheet for the Facility can be found by navigating https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-honeywell-chesterfield-formerly-allied-signal-chester-va. The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section 9, Public Participation, below, for information on how you may review the AR.

Section 2: Facility Background

2.1 Introduction

The Facility is an active nylon resins manufacturing plant located at 4101 Bermuda Hundred Road in Chester, Virginia, on the southern shoulder of a large meander of the James River, situated near its confluence with the Appomattox River. The Facility is comprised of approximately 552 acres of land (Figure 1). The operations area of the Facility occupies 93 acres and is depicted in Figure 2. The Facility is currently owned and operated by AdvanSix, which is

a successor to Honeywell Resins & Chemicals LLC (Honeywell). AdvanSix and its corporate predecessors have operated the Facility since 1954.

Based on historical information about Facility operations, EPA identified 11 Solid Waste Management Units (SWMUs), SWMU 1, 3, 4, 5, 6, 8, 12, 13, 14, 17 and 18, respectively, from which releases were possible, and the Western Cooling Water Ditch (WCWD) which received historical releases from plant operations. The 11 SWMUs remaining no longer receive process waste and are inactive. The 11 SWMUs and the WCWD are located away from the operations area of the Facility (Figure 2). The SWMUs and WCWD are described below:

SWMU 1

SWMU 1 consists of four spray fields numbered 1 through 4, respectively. Combined, they occupy approximately 40 acres located to the south of the operations area (Figure 2). From 1975 until 2000, these spray fields were part of the facility wastewater application system.

Spray Field #1 is located approximately 400 feet (ft.) west of the western cooling water drainage ditch and approximately 80 ft. north of the James River.

Spray Field #2 is located north of Spray Field #1 and is situated between two surface water bodies, the western cooling water drainage ditch and a swale leading to the ditch.

Spray Field #3 is located immediately south of the Sanitary Stabilization Pond and the Process Ponds and is bordered by the western cooling water drainage ditch on the west, the eastern cooling water drainage ditch on the east, and the James River approximately 100 ft. to the south.

Spray Field #4 is located east-northeast of the Process Ponds, approximately 70 ft. east of the eastern cooling water drainage ditch, and is bordered by the James River to the south and east.

SWMU 3

SWMU 3 is a closed, unlined landfill unit (Landfill) that was operated from 1971 to 1974. It is located southwest of the operations area just off of Barn Road (Figure 2). SWMU 3 occupies an area approximately 3.5 acres in size and is approximately 20 ft. deep. Waste deposited in the Landfill included nylon, polyester, polyethylene polymers and fiber scrap, depolymerization bottoms from nylon recovery, lab chemicals, dyes, surfactants, cardboard, and paper. The Landfill was capped with 6 to 12 inches of clay/ bentonite, covered with 18 inches of topsoil, and seeded with grasses.

The Landfill surface slopes to the east/southeast and is vegetated with grass. There is a 20-foot elevation change from the west side of the Landfill to the east side. Storm water

ditches associated with a site roadway lead east from the Landfill to the western cooling water drainage ditch to carry surface water runoff from the area to the James River.

SWMU 4

SWMU 4 is a former unlined acid pond (Pond) in which laboratory wastes were reportedly placed. The Pond was approximately 102 ft. by 52 ft. by 6 ft. deep. In 1975, the liquid was pumped out of the Pond and transported to an off-site disposal facility. It is reported that approximately one foot of sludge remained in the bottom of the Pond (5 to 6 feet bgs) after pumping and it was allowed to air dry. The pond was then backfilled with local clean soils and vegetated.

The current footprint of SWMU 4 is defined as a rectangle measuring 100 ft. by 125 ft. or 12,500 square ft. (SF) in area (Figure 2). SWMU 4 is currently a grass-covered field that slopes gently to the east toward the western cooling water ditch.

SWMU 5

SWMU 5, known as the Woods Dump, is reportedly a 50 ft. by 50 ft. by 10 ft. deep unlined disposal unit that accepted approximately 1000 yd^3 of material. It is located just inside the tree line, approximately 600 ft. southwest of the SWMU 3 (Figure 2).

The Woods Dump is situated at an approximate elevation of 40 ft. above mean sea level (MSL) and slopes to the southwest toward an intermittent swale leading to Shand Creek. The Woods Dump was reportedly used for the disposal of open top drums consisting of general laboratory chemicals between 1972 and 1975. The drums contained acids as well as benzene, cresols, nitrobenzene, dyes and pigments, and lab packs and lab reagents. SWMU 5 was reportedly closed with an unknown amount of fill material and vegetated.

SWMU 6

SWMU 6, the Woods Storage Unit, is located just inside the tree line on the west bank of the western cooling water drainage ditch, alongside Spray Field #2 (Figure 2). SWMU 6 was utilized for drum placement in the early 1970s. The area measures approximately 20 ft. by 175 ft. long. Historical information indicates that approximately 150 drums were removed from SWMU 6 in April 1985. SWMU 6 is currently vegetated with bushes and trees.

SWMU 8

SWMU 8, the Formic Acid Pit, is located within SWMU 1 Spray Field #3, approximately 400 ft. west of the western cooling water drainage ditch and approximately 80 ft. north of the James River (Figure 2). The exact location of the pit in the field is not known. Based on historical information, a 10 ft. by 3 ft. by 9 ft. pit was excavated in 1976 for soil characterization for the land application system. The excavation, while open, was utilized one time for the disposal of approximately 175 gallons of formic acid. The pit was then

backfilled with soil and the area seeded with grasses. The RFI concluded that disposal activity at the Formic Acid Pit did not cause an environmental impact that could be distinguished from the spray field in which it is located.

SWMU 12

SWMU 12, the Process Waste Sludge Pit, is an unlined trapezoid shaped unit, 140 ft. long by 60 ft. on the north end and 100 ft. on the south end. This pit is located southeast of the Sanitary Stabilization Pond and east of Process Waste Pond #3 (Figure 2). SWMU12 was used one time, in 1976, for the disposal and drying of sludge from the Process Waste Ponds. Approximately 44,640 cubic feet of sludge were deposited in the SWMU 12 for drying. Once the excess moisture seeped out of the sludge, the sludge was covered with three feet of clean silt material and seeded. Currently, SWMU 12 is vegetated with grass and slopes gently to the east toward the eastern cooling water drainage ditch.

SWMU 13

SWMU 13, the Sanitary Stabilization Pond Sludge Pit consists of an unlined 140 ft. by 120 ft. by 2.5 ft. deep pit located northeast of the Woods Dump and south of the Landfill (Figure 2). SWMU 13 is located at an approximate elevation of 45 ft. MSL and is relatively flat. The north side of SWMU 13 slopes gently to the north toward the Landfill. SWMU 13 was used one time in 1977 for the disposal and drying of sludge from the Sanitary Stabilization Pond. The area around SWMU 13 is currently grassed.

SWMU 14

SWMU 14, the Filter Plant Sludge Drying Basins, consists of three basins located west of the Landfill (Figure 2). The basins were located in an area 188 ft. by 166 ft. by 2 ft. deep. They were used between 1976 and 1979 to dry sludge from the water treatment plant supplying the Facility's water. The basins received approximately 172,500 cubic feet of filter plant sludge, which was formed from the addition of soda ash and alum to the raw water supply. In 1979, the basins were closed and the area of the former drying basins is currently covered by asphalt pavement.

SWMU 17

SWMU 17, the Sanitary Stabilization Pond, was a lined pond that covers 5.2 acres (Figure 2). The Pond is located south of the operations area between the eastern and western cooling water drainage ditch. The Sanitary Stabilization Pond historically received domestic wastewater from the Facility operations. SWMU 17 ceased to receive wastewater in 1992.

SWMU 18

SWMU 18, the Process Waste Ponds, is located around the Sanitary Stabilization Pond (i.e. SWMU 17), south of the operations area (Figure 2). SWMU 18 consists of three ponds. Ponds #1 and #2 each have a surface area of approximately 1 acre. Pond #3 has a surface area of approximately 1.3 acres. Ponds #1 and #2 received process wastewater from manufacturing operations and stored it during winter months (December through March) for land application during the following growing season. All of the ponds were initially constructed with clay bottoms, were cleaned and lined with bentonite in 1976, and re-lined in 1984-1985. Pond #1 and Pond #2 were subsequently re-lined with a full synthetic liner in 1997 and 1998, respectively. Pond # 3 has a bentonite bottom, synthetic liner with erosion control liners along its slopes.

Western Cooling Water Ditch (WCWD)

The WCWD is a channel approximately 3,770 feet long that is situated on the western side of the Facility (Figure 2). At its northern upstream extent, the WCWD is primarily conveying surface water runoff from adjacent vegetated areas and a Facility service road. On the south side of Barn Road, permitted Facility outfalls discharge non-contact cooling water into the WCWD at a rate of approximately 8 million gallons per day (mgd) to 10 mgd. Downstream of the outfall, the WCWD continues another roughly 2,000 feet until it discharges into the James River. The portion of the WCWD downstream of the outfall is tidally influenced by the James River.

Section 3: Summary of Environmental Investigations

In December 1999, EPA Region 3 offered Honeywell the opportunity to proceed with RCRA Corrective Action under the Facility Lead Program. Honeywell submitted a Letter of Commitment in January 20, 2000, acknowledging and accepting the goals and expectations described in the December 1999 Facility Lead Agreement. Accordingly, the RCRA Facility Investigation (RFI) and Corrective Measures Study (CMS) for the 11 SWMUs identified in Section 2 and the WCWD were conducted under the EPA Region 3 Facility Lead Program.

3.1 Environmental Investigations

Multiple phases of environmental investigations have been completed at the Facility for the 11 SWMUs. For all environmental investigations conducted at the Facility, groundwater concentrations were screened against federal Maximum Contaminant Levels (MCLs) promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141, or if there was no MCL, EPA Region III Regional Screening Levels (RSL) for tap water for chemicals. Soil concentrations were screened against EPA Region III Screening Levels (RSLs) for residential soil and industrial soil as well as RSLs for the protection of groundwater.

In 2001, Honeywell completed a Phase I RFI which evaluated each of the SWMUs. The Phase I

RFI characterization effort included two investigations approaches: SWMU specific investigations and a site-wide groundwater assessment. The SWMU specific investigations were focused on the soil/waste material and groundwater quality within each SWMU while the site-wide groundwater assessment addressed overall Site groundwater quality.

The Phase II RFI characterization effort was performed in October 2003 to address the remaining issues from the Phase I RFI and included a background soil quality assessment, SWMU specific investigations for SWMU 3 and SWMU 4 and additional site-wide groundwater assessment activities. Contaminants of Concern (COCs) in subsurface soils and groundwater were identified at and in the vicinity of SWMUs 3, 4, 12 and the WCWD. The COCs consist of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). The VOCs with the highest concentrations are 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethene (PCE), and trichloroethene (TCE). The SVOCs with the highest concentrations include 1,1-biphenyl, caprolactam, carbazole and 1,4-Dioxane.

The findings of the Phase I and II RFIs are summarized below:

SWMU 1 - Soil analytical data from the Phase II RFI indicated that no VOCs or SVOCs exceeded their respective RSLs or ecological criteria within the spray fields. Groundwater data from the Phase II RFI indicated that several VOCs and SVOCs were detected above respective RSLs or MCLs upgradient and side gradient.

SWMU 3 – The results from the Phase I and II RFIs were inconclusive with respect to delineating the complete extent of contamination, therefore, further investigation was required.

SWMU 4 - The results from the Phase I and II RFIs were inconclusive with respect to delineating the complete extent of contamination, therefore, further investigation was required.

SWMU 5 - The Phase II soil analytical data indicate that no VOCs or SVOCs were detected above residential RBCs or ecological criteria in the soil samples collected from this SWMU. Hydropunch samples of groundwater collected during the Phase II RFI from this SWMU did not detect any VOCs or SVOCs exceeding respective RBCs or MCLs.

SWMU 6 – Phase I and Phase II RFIs did not identify soil or groundwater impacts.

SWMU 8 - The Phase I and Phase II RFIs concluded that disposal activity could not yield an environmental impact that would be distinguishable from the SWMU 1 Spray Field #3, in which it is located. With respect to Spray Field #3, the Phase I and Phase II RFIs did not identify soil impacts. Groundwater results downgradient of the spray field indicate n-Nitrosodiphenylamine, 1, 4-Dioxane, arsenic and manganese exceeding respective RBCs or MCLs.

SWMU 12 - The results from the Phase I and II RFIs were inconclusive with respect to delineating the complete extent of contamination, therefore, further investigation was required.

SWMU 13 - The Phase I and Phase II RFIs did not identify soil or groundwater impacts.

SWMU 14 - The Phase I and Phase II RFIs did not identify soil or groundwater impacts.

SWMU 17 - The Phase I and Phase II RFIs did not identify soil impacts, but did identify the following compounds in downgradient monitoring wells at concentrations exceeding their respective MCLs or RBCs: carbazole, nitrosodiphenylamine, arsenic, manganese, chloroethane and 1, 4-dioxane.

SWMU 18 - The Phase I and Phase II RFIs did not identify any soils impacts or groundwater VOC impacts.

WCWD - RFI activities identified diphenyl ether, biphenyl and 1,1-dichloroethane as Compounds of Potential Concern (COPCs) in sediment at the WCWD. Ecological risk assessment results show that portions of the WCWD should be remediated.

As a result of the Phase II RFI investigation EPA is proposing no further action for the following SWMUs:

SWMU 1 (Sprayfields) – (Soil Only)
SWMU 5 (Woods Dump) (Soil and Groundwater)
SWMU 6 (Woods Storage Unit) (Soil Only)
SWMU 8 (Formic Acid Pit) (Soil and Groundwater)
SWMU 13 (Sanitary Stabilization Pond Sludge Pit) (Soil and Groundwater)
SWMU 14 (Filter Plant Sludge Drying Basins) (Soil and Groundwater)
SWMU 17 (Sanitary Stabilization Pond) (Soil Only)
SWMU 18 (Process Waste Ponds) (Soil Only)

The Phase III RFI Data Summary Report dated January 23, 2004 (RFI Report) provides additional information necessary to understand the horizontal and vertical extent of Site-related constituents of concern in soils and groundwater and the probable sources of those constituents. The RFI Report is focused on the field activities in SWMU 3, SWMU 4, SWMU 12 and the WCWD in addition to Site-wide groundwater monitoring and recommended the following tasks:

- Delineation of impacted soils and Dense Non-aqueous Phase Liquid assessment at SWMU 4;
- Determination of the landfill cover thickness and limited soil investigation at SWMU 3;
- Delineation of impacted soil at SWMU 12;
- Sitewide groundwater monitoring; and,
- Surface water and sediment sample collection at the WCWD.

An addendum to the Phase III Data Summary Report, completed in May 2005, and two subsequent focused RFI investigations completed in January 2007 and November 2007, along with letter reports dated January 6, February 28 and July 2, 2014 were required to finalize the soil and groundwater characterization at SWMUs 3 and 4. The findings of the remaining phases of the RFI, focusing on SWMUs 3, 4 and 12 are summarized below:

SWMU 3 - Groundwater impacts by VOCs, specifically Tetrachlorethene (PCE) and Trichlorethene (TCE), have been identified exceeding MCLs in downgradient monitoring wells MW-100S, MW-101S and side-gradient monitoring well MW-102S. Of these locations MW-102S had the most elevated concentrations (PCE was detected at 134 ug/l and TCE was detected at 250 ug/l compared to MCLs of 5 ug/l and 5 ug/l respectively). Trend analysis was conducted for MW-100S, MW-101S and MW-102S using data collected over time. The trend analysis concluded that a decreasing trend for the chlorinated organic compounds has occurred at MW-100S and MW-101S and no trend was determined at MW-102S.

SWMU 4 - Historical investigations of SWMU 4 have identified an area of subsurface soil impacts by VOCs and SVOCs. This impacted soil area extends to approximately 180 feet north from the northern corner of the current SWMU footprint and encompasses an area of approximately 53,000 SF. The majority of this area is situated outside of the current SWMU 4 footprint and is impacted only below the water table, which occurs at approximately 12 ft. to 14 ft. below ground surface (bgs). At some locations within the impacted soil area, individual contaminant concentrations indicate the possible presence of dense non-aqueous phase liquids (DNAPL) as residual saturation. DNAPL presence in the subsurface as residual saturation is indicated by multiple lines of evidence including visual observations of staining in boring logs, groundwater concentrations approaching 1% of compound solubility limits, membrane interface probe (MIP) instrument responses, and other quantitative data. DNAPL as free product has been historically observed to accumulate in one monitoring well within the SWMU boundaries, MW-104S.

While a variety of VOC and SVOC compounds account for the soil and groundwater impacts within and associated with SWMU 4, the majority of the estimated in-place soil VOC mass is comprised of 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethene (PCE), and trichloroethene (TCE). The majority of the in-place soil SVOC mass is comprised of 1,1-biphenyl and caprolactam.

SWMU 12 - The Phase I and Phase II RFIs identified VOC and SVOC impacts in groundwater exceeding screening levels, and identified carbazole and tetrachloroethene impacts in soils exceeding screening levels.

Western Cooling Water Ditch

A Screening Level Ecological Risk Assessment (SLERA) of surface water and sediment in the WCWD was conducted in 2006. The SLERA concluded that the contaminants of concern in the WCWD were diphenyl ether, biphenyl and 1,1-dichlorothane. In 2016, Honeywell proposed location-specific preliminary remediation goals (PRGs) to EPA for these contaminants in the WCWD sediments. The location specific variable controlling these PRGs was the total organic carbon (TOC) content of the matrix. Sediment screening benchmarks available from standard reference documents were adjusted for TOC and chronic exposure scenarios to derive the PRGs.

3.2 Site-Wide Groundwater Investigation

As a result of the SWMU 4 interim measure implementation, (see Section 4), site-wide groundwater sampling was conducted in November 2014. The groundwater results from the November 2014 Whole Site Groundwater Sampling Event included collection of groundwater samples from within the Recent Alluvium unit (shallow aquifer) and the Potomac Aquifer (deep aquifer) at monitoring wells upgradient and down gradient of the SWMUs onsite.

Within the shallow aquifer, (with the exception of SWMU 4 and SWMU 12), groundwater down gradient of the SWMUs was generally either non-detect for VOCs and SVOCs, or were detected at low concentrations exceeding RSLs or MCLs. Detected VOCs included chlorinated solvents PCE (21 ug/l downgradient of SWMU-13) and TCE (10.6 ug/l downgradient of SWMU 1) and their break-down products. Detected SVOCs included 1,4-dioxane, (53.9 ug/l downgradient of SWMU 17), and N-nitrosodiphenylamine (60.9 ug/l downgradient of SWMU 1) Results from groundwater sampling downgradient of SWMUs 4 and 12 exceed RSLs or MCLs at levels indicating that remediation is warranted.

Within the deep aquifer, (with the exception of SWMU 1 – Spray Field #1), groundwater impacts were either non-detect or limited to one or two compounds and at low concentrations. Detected VOCs typically were limited to TCE (2.6 ug/l downgradient of SWMU 1) and/or a single daughter product. Detected SVOCs were limited to biphenyl or, more typically, 1,4-dioxane (ranging from 33.9 ug/l downgradient of SWMU 17 to 167 ug/l downgradient of SWMU 1 Spray Field #2. At SWMU 1 – Spray Field #1, several PAHs were detected at low concentrations (Benzo(a)anthracene 0.96 ug/l, Benzo(a)pyrene 0.82 ug/l, Benzo(a)fluoranthene 0.945 ug/l), in addition to biphenyl (3.2 ug/l) and 1,4 dioxane (44.4 ug/l).

Section 4: Summary of Remedial Activities Completed

SWMU-3

In 1974, the SWMU-3 Landfill was capped with 6 to 12 inches of clay/bentonite, covered with 18 inches of topsoil, and seeded with grasses.

Interim Measure for SWMU-4

In response to EPA's request, Honeywell submitted an Interim Measure (IM) Work Plan for SWMU 4 in January 2015. The work plan was submitted to EPA to address the VOC, SVOC and DNAPL contamination within the SWMU 4 footprint, to mitigate the further release of this source material to groundwater and to ensure that potential receptors within SWMU 4, including Site workers, construction workers, trespassers, and wildlife receptors, would not be exposed to the impacted soil and groundwater. The SWMU 4 IM Work Plan was approved by EPA on February 6, 2015.

The specific objectives of the IM for SWMU 4 are:

- Reduce exposure risk of human and environmental receptors to contaminants within SWMU 4.

- To the extent practicable, stabilize or reduce contaminant loading that resulted in the current three-dimensional extent and magnitude of groundwater impacts associated with SWMU 4.

The IM implemented pursuant to the approved Work Plan consists of:

- Construction and maintenance of a circumferential slurry wall aligned outside of the extent of soil impacts and extending from the surface downward, keyed into the Potomac Confining Unit. The slurry wall will minimize lateral movement of dissolved VOCs and SVOCs in groundwater to areas outside the proposed containment system.

- Construction and maintenance of a multi-layer membrane cover system extending over the entire area enclosed within the slurry wall containment. The cover system will be constructed to minimize precipitation infiltration and assist in reducing groundwater levels within the SWMU 4 containment system.

- Construction and maintenance of a contingent groundwater extraction system consisting of extraction wells within the interior of the containment, piping, vaults and a frac tank discharge point to provide a means of controlling groundwater levels and ensuring a long-term inward hydraulic gradient can be maintained.

- Placement and maintenance of performance monitoring piezometers inside and outside of the containment; and,

- Relocation of a Facility service road and overhead power lines to facilitate the implementation of the IM.

EPA approved the 100% Basis of Design Report in March of 2016. Construction of the interim measure commenced in early September 2016 with completion in December 2016.

Section 5: Corrective Action Objectives

EPA's Corrective Action Objectives (CAOs) for the specific environmental media at the Facility are the following:

1. Soils

EPA's CAO for soil is to prevent human exposure to contaminants concentrations above the EPA allowable risk range of 1x10-4 to 1x10-6 for an industrial exposure scenario and minimize cross-media transfer of Facility contaminants of concern (COCs) from soil to groundwater and surface water to minimize the impact to ecological receptors.

2. Groundwater

EPA expects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA will use drinking water standards, known as MCLs, or RSLs for tap water if a MCL for a specific constituent does not exist.

EPA has determined that maximum beneficial use of the Facility groundwater is for potable purposes. Therefore, under EPA's proposed remedy, EPA CAO for Facility-wide groundwater is to achieve MCLs.

3. Sediment

EPA's CAO for the sediment is to prevent all uncontrolled human and ecological exposure to contaminated sediments that exceed the site-specific ecological (PRGs) and to prevent mobilization, re-distribution of contaminated and cross-media transfer of COCs from sediment to groundwater and surface water. The Site specific PRGs are 5.6 mg/kg for diphenyl ether, 1.2 mg/kg for 1,1-biphenyl and 3.1 mg/kg for 1,1-dichloroethane.

4. Vapor Intrusion

The CAO for potential vapor intrusion for occupied buildings is to control human exposure and attain EPA's acceptable cancer risk range of 10^{-4} to 10^{-6} and the non-cancer risk (hazard quotient) of 1 or less.

Section 6: Proposed Remedy

1. Introduction

EPA's proposed remedy for the Facility is a combination of Engineering and Institutional Controls. Engineering controls are proposed for SWMU 3, SWMU 4, SWMU 12 and the WCWD. Under this proposed remedy, some contaminants remain in the soil and groundwater at the Facility above levels appropriate for residential uses. Because some contaminants will remain in the soil and groundwater at the Facility at levels which exceed residential use, EPA's proposed remedy requires the compliance with and maintenance of soil and groundwater use restrictions. EPA proposes to implement the land and groundwater restrictions necessary to prevent human exposure to contaminants at the Facility through an enforceable institutional control(s), such as a permit, order, and/or environmental covenant.

2. Engineering Controls

a. Groundwater

Site-Wide Groundwater - Monitoring and site characterization has identified SWMUs 4 and 12 as sources of groundwater contamination at the Facility which are continuing to degrade groundwater. EPA anticipates that, once these sources are controlled by containment of SWMU 4 and removal for SWMU 12, the remaining contamination in groundwater will naturally attenuate, and will ultimately achieve EPA's groundwater cleanup levels (drinking water standards) without further treatment. Therefore, the proposed remedy for Facility groundwater consists of monitored natural attenuation pursuant to an EPA approved Long-Term Groundwater Monitoring plan until drinking water standards are met, and compliance with and maintenance of groundwater use restrictions, to be implemented though institutional controls, to prevent exposure to contaminants while levels remain above drinking water standards. The point of compliance shall be throughout the plume or the downgradient unit boundary for the areas where waste is left in place.

With regard to SWMU 3 and as documented in Section 3.1 "Environmental Investigations," PCE and TCE exceed their applicable MCL in downgradient monitoring wells MW-100S and MW-101S, and the side-gradient monitoring well MW-102S. As a result of the trends evaluated over time at down gradient monitoring wells, EPA has determined that natural attenuation is occurring with the groundwater plume around SWMU 3. While the groundwater monitoring results at the downgradient wells demonstrated that concentrations of PCE and TCE are decreasing overtime, there was not a similar trend at MW-102S. Therefore, EPA proposes that sampling be conducted more frequently at this location to confirm that MNA will be a sufficient remedy (i.e. groundwater concentrations are decreasing over time and cleanup standards can be achieved). If the results of such sampling show that groundwater is not being effectively addressed through MNA, EPA may require Honeywell to evaluate other corrective measures. If EPA believes that any such additional corrective measures are necessary to protect human health and/or the environment, EPA will solicit public comments on any such additional corrective measures prior to including them in the final remedy for the Facility.

b. Soils

SWMUs 1, 5, 6, 8, 13, 14, 17, & 18 are complete with controls and require no further corrective action with respect to soils.

The proposed remedy for SWMU 3 is maintenance of the existing cover system pursuant to an EPA approved Cap Management Plan.

The proposed remedy for SWMU 4 requires the operation and maintenance of a slurry wall, cover containment structure and the contingent groundwater extraction system. (Ref. Section 4 "Interim Measure").

The proposed remedy for SWMU 12 requires the excavation and removal of sludge materials at a former process waste sludge pit, pursuant to EPA-approved workplan and an EPA-approved

Materials Management Plan.

EPA is also proposing to require the following plans as part of the final remedy:

> A Cap Management Plan (CMP) specific to SWMU 3, 4 and the WCWD shall be submitted for EPA and the Virginia Department of Environmental Quality (VDEQ) review and approval. The CMP shall provide the framework including required maintenance activities and inspections to ensure the installed caps are providing the necessary source control to achieve the CAOs. The CMP, at a minimum, must include the following: the procedures to maintain the cap over the contaminated soil; a schedule for inspections to be performed as part of cap maintenance, no less frequent than once a year; physical maintenance requirements of the capped areas to prevent degradation of the cap and unacceptable exposure to the underlying soil.
>
> A Materials Management Plan (MMP) for all earth moving activities, including excavation, drilling and construction activities in the Facility where any contaminants remain in soils above EPA Region III's Screening Levels for Industrial Soils or in groundwater above their MCLs or EPA Region III's Tap Water Risk Screening Levels shall be submitted for EPA and VDEQ review and approval. At a minimum the MMP must specify the following: the protocols for soil and groundwater handling and management and the appropriate Personal Protective Equipment requirements sufficient to meet VDEQ acceptable risk and complies with all applicable OSHA requirements in a manner such that the activity will not pose an unacceptable threat to human health and the environment or adversely affect or interfere with the integrity of the final remedy.

c. Sediment

The proposed remedy for the Western Cooling Water Ditch requires the installation of a multi-layer sediment cover with long-term monitoring at discrete sections of the Western Cooling Water Ditch.

d. Vapor Intrusion

EPA's proposed remedy for vapor intrusion is the installation and maintenance of a vapor control system in the onsite warehouse building which is currently the only building overlying a contaminated groundwater at the Facility. The design of the vapor control system shall be submitted to EPA for review and approval, unless it is demonstrated to EPA that vapor intrusion does not pose unacceptable risk to human health and EPA provides written approval that no vapor control system is needed.

In addition, a vapor intrusion control system shall be installed in any new structures constructed above a contaminated groundwater plume or within 100 feet of the perimeter of a contaminated groundwater plume, unless is demonstrated to EPA that vapor intrusion does not pose unacceptable risk to human health and EPA provides written approval that no vapor control system is needed.

3. Institutional Controls

Because contaminants remain in the soil and groundwater at the Facility (or at specific SWMUs with respect to soils) above levels appropriate for residential use, EPA's proposed remedy requires land and groundwater use restrictions to restrict activities that may result in exposure to those contaminants. EPA proposes that the restrictions be implemented and maintained 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 and/or protect the integrity of the remedy by limiting land or resource use.

EPA is proposing the following land and groundwater use restrictions be implemented at the Facility:

1. The Facility property shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment and EPA provides prior written approval for such use. "Residential purposes" includes, but is not limited to, all purposes that provide for living accommodations or services (e.g. dormitories, senior citizen housing, any day care facility whether for infants, children, the infirm, or the elderly).

2. Any earth moving activities, including excavation, drilling and construction activities, in the areas at the Facility where any contaminants remain in soils above EPA's Screening levels for non-residential use or groundwater above CAOs, shall be conducted in accordance with the EPA-approved Materials Management Plan (MMP).

3. Groundwater at the Facility shall not be used for any purpose other than the operation, maintenance, and monitoring activities currently being conducted by the Facility and required by EPA, unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy and the Facility obtains prior written approval from EPA for such use.

4. No new wells shall be installed on Facility property unless it is demonstrated to EPA that such wells are necessary to implement the Final Remedy selected by EPA and the Facility obtains prior written approval from EPA to install such wells;

5. On a periodic basis and whenever requested by EPA, the then current owner shall submit to EPA and VDEQ a written certification stating whether or not the groundwater and land use restrictions are in place and being complied with.

6. A vapor intrusion control system shall be installed in any new structures constructed above a contaminated groundwater plume or within 100 feet of the perimeter of a contaminated groundwater plume, unless is demonstrated to EPA that vapor intrusion does not pose unacceptable risk to human health and EPA provides written approval that no vapor control system is needed.

Implementation

The proposed components of the Final Remedy for the Facility shall be implemented through an enforceable mechanism such as an order and/or an environmental covenant pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, Sections 10.1-1238-10.1-1250 of the Code of Virginia (Environmental Covenant). If an Environmental Covenant is to be the institutional control mechanism, it will be recorded in the chain of title for the Facility property and will be recorded with the Clerk's Office of the Circuit Court of Chesterfield County and/or the city of Chesterfield. A clerk-stamped copy of the Environmental Covenant will be sent to EPA and VDEQ within sixty (60) calendar days of recordation.

Under the proposed remedy, AdvanSix will be required to provide a coordinate survey, as well as a metes and bounds survey of the Engineering and Institutional controls, and Facility boundaries as follows:

1. The boundary of each engineering control, land and groundwater use restriction shall be defined as a polygon; and

2. The longitude and latitude of each polygon vertex shall be established as follows:

    a. Decimal degrees format;
    b. At least seven decimal places;
    c. Negative sign for west longitude; and
    d. World Geodetic System (WGS) 1984 datum.

Mapping the extent of the engineering controls land and groundwater use restrictions will allow for presentation in a publically accessible mapping program such as Google Earth or Google Maps.

If AdvanSix or any subsequent owner fails to meet its obligations under the enforceable mechanism selected or if EPA, in its sole discretion deems that additional corrective measures and/or land use restrictions are necessary to protect human health or the environment, EPA has the authority after public comment, to require and enforce such additional corrective measures and use restrictions, provided any necessary public participation requirements are met.

Section 7: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	EPA's proposed remedy for the Facility protects human health and the environment by eliminating, reducing, or controlling potential unacceptable risk through the implementation and maintenance of engineering controls and facility-wide use restrictions. EPA is proposing to restrict land use to commercial or industrial purposes at the Facility. With respect to groundwater, while low levels of contaminants remain in the groundwater beneath the Facility, the contaminants contained in the aquifer are decreasing through natural attenuation as shown by groundwater monitoring data. In addition, groundwater monitoring will continue until MCLs, the drinking water clean-up standards, are met. With respect to future uses, the proposed remedy requires groundwater use restrictions to minimize the potential for human exposure to contamination and protect the integrity of the remedy. With respect to the contaminated soils and sediments, all exposure pathways have been eliminated by the design and construction of the cap at SWMU 4 and will be eliminated by the cap at the WCWD and the source removal at SWMU 12. The engineering controls in place at SWMUs 4, have reduced infiltration such that it will minimize cross-media migration (i.e. soil to groundwater) and erosion of the contaminated soils. With respect to future uses, the proposed remedy requires land and groundwater use restrictions, described in Section 6.3, above, to minimize the potential for human exposure to contamination and protect the integrity of the remedy. With respect to human health associated with indoor air exposures in the existing warehouse building the proposed remedy calls for a vapor control system or a demonstration that existing conditions do not pose unacceptable risk. In the event that future building construction is contemplated, the Facility shall include a vapor control system or a demonstration that existing conditions do not pose unacceptable risk.
2) Achieve media cleanup objectives	EPA's proposed remedy meets the media cleanup objectives based on assumptions regarding current and reasonably anticipated land and water resource use(s). The remedy proposed in this SB is based

	on the current and future anticipated land use at the Facility as commercial or industrial. Although the identified contaminated soils/sediments will remain in place, the engineering controls effectively results in a barrier to eliminate direct contact from human and ecological receptors, or removes the source material. The SWMU 4 cap has been designed and constructed to control storm runoff and prevent infiltration, eliminating the potential for cross-media migration of contaminants. The institutional controls will ensure long-term effectiveness of the remedy through enforceable monitoring and maintenance requirements. The groundwater plume appears to be stable (not migrating); although contaminants are above MCLs, they are declining over time. In addition, groundwater monitoring will continue until MCLs, the drinking water clean-up standards, are met. The Facility meets EPA risk guidelines for human health and the environment. EPA's proposed remedy requires the implementation and maintenance of use restrictions to ensure that groundwater beneath Facility property is not used for any purpose except to conduct the operation, maintenance, and monitoring activities required by EPA.
3) Remediating the Source of Releases	With all proposed remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment. Controlling the sources of contamination relates to the ability of the proposed remedy to eliminate or reduce, to the maximum extent practicable, further releases. With the implementation of the engineering controls proposed for SWMUs 4, 12 and the WCWD, the source of contaminants has been contained or removed from the soil at the Facility, thereby, eliminating, to the extent practicable, further releases of hazardous constituents from on-site soils as well. Contaminants in groundwater are declining through attenuation. There are no remaining large, discrete sources of waste from which constituents would be released to the environment. Groundwater is not used for potable purposes at the Facility. In addition, groundwater monitoring will continue until MCLs, the drinking water clean-up standards, are met through attenuation.

Balancing Criteria	Evaluation
4) Long-term effectiveness	The long-term effectiveness criterion considers the amount of risk that would remain after the remedy has been implemented. It also considers whether the remedy is adequate and reliable. The caps and/or removal of contaminated soils/sediments at the Facility will provide long-term effectiveness by eliminating all direct exposure pathways to soils/sediments from human and ecological receptors and preventing cross media (soil to groundwater/surface water) migration. Institutional controls will formally prohibit uncontrolled use of groundwater thereby eliminating future direct exposure potential to groundwater at the Facility. The combination engineering controls buttressed by institutional controls will be highly effective over the long term.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The reduction of toxicity, mobility and volume of hazardous constituents will continue by attenuation at the Facility. Reduction has already been achieved, as demonstrated by the data from the groundwater monitoring. The proposed controls for containment and removal will be designed to eliminate or substantially reduce the mobility of the constituents in the unit, thereby reducing the volume and mass of contaminants at exposure points.
6) Short-term effectiveness	Remedies at SWMUs 3 and 4 have been implemented and are effective source control measures. EPA anticipates that the proposed removal at SWMU-12 and the sediment capping at the WCWD, in addition to land and groundwater use restrictions will be fully implemented shortly after the issuance of the Final Decision and Response to Comments which will increase the effectiveness of the remedies at this Facility.
7) Implementability	EPA's proposed remedy is readily implementable. The groundwater monitoring is already in place and operational. EPA proposes to implement the use restrictions through an enforceable mechanism such as an Environmental Covenant, permit or order.
8) Cost	EPA's proposed remedy is cost effective. The construction costs associated with the proposed remedy for SWMU 4 has already been incurred. The remaining costs for the remedial components at SWMU 12, the WCWD and implementation of environmental covenants are estimated to be $495,000. Annual O&M costs including the long-term groundwater monitoring for the entire site are estimated to be $94,800 per year.

	This criterion considers the total capital cost, annual operation and maintenance costs, and the present worth of the remedy. The cost of maintaining the engineered caps (SWMUs 3, and 4) are reasonable given that it will eliminate all exposure pathways over the Facility and reduce infiltration thereby minimizing cross-media migration (i.e. soil to groundwater). In addition, EPA will evaluate the need for assurances of financial responsibility for completing the final remedy consistent with Section 3004(u) of RCRA, 42 U.S.C. § 6924(u).
9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and it will be described in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	VDEQ has reviewed and concurred with the proposed remedy for the Facility.

Section 8: Financial Assurance

EPA will evaluate the need for Financial Assurance during the negotiation of the Remedy Implementation mechanism. If EPA determines that Financial Assurance is required, AdvanSix will be required to demonstrate and maintain the appropriate financial assurance for completion of the remedy pursuant to the standards contained in Federal regulations at 40 C.F.R. § 264.145 and 40 CFR § 264.143.

Section 9: Public Participation

Interested persons are invited to comment on EPA's proposed remedy. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. Comments may be submitted by mail, fax, or electronic mail to Mr. Russell Fish at the contact information listed below.

A public meeting will be held upon request. Requests for a public meeting should be submitted to Mr. Russell Fish in writing at the contact information listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by EPA for the proposed remedy at this Facility. The Administrative Record is available at the following location:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Mr. Russell Fish (3LC10)
Phone: (215) 814-3226
Fax: (215) 814 - 3113
Email: fish.russell@epa.gov

Attachments:
Figure 1: Site Location Map
Figure 2: Map of Facility

Date: 3-16-17

Catherine A. Libertz

Catherine A. Libertz, Acting Director
Land and Chemicals Division
US EPA, Region III

Section 10: Index to Administrative Record

Honeywell Chesterfield Facility RFI Report dated January 2004

Honeywell Chesterfield Facility Phase II RFI Report dated February 2006

Honeywell Chesterfield Facility Phase III RFI Data Summary Report dated March 2005

Honeywell Chesterfield Facility Phase III RFI Addendum Report dated October 2005

Screening Level Risk Assessment for the Western and Eastern Cooling Water Ditches, Chesterfield Facility, Chesterfield, Virginia dated December 15, 2006

Final Phase IV RCRA Facility Investigation Report, Honeywell Chesterfield Facility dated January 2007, Revised October 2007

Phase V RCRA Facility Investigation Report, Honeywell Chesterfield Facility dated, April 2008

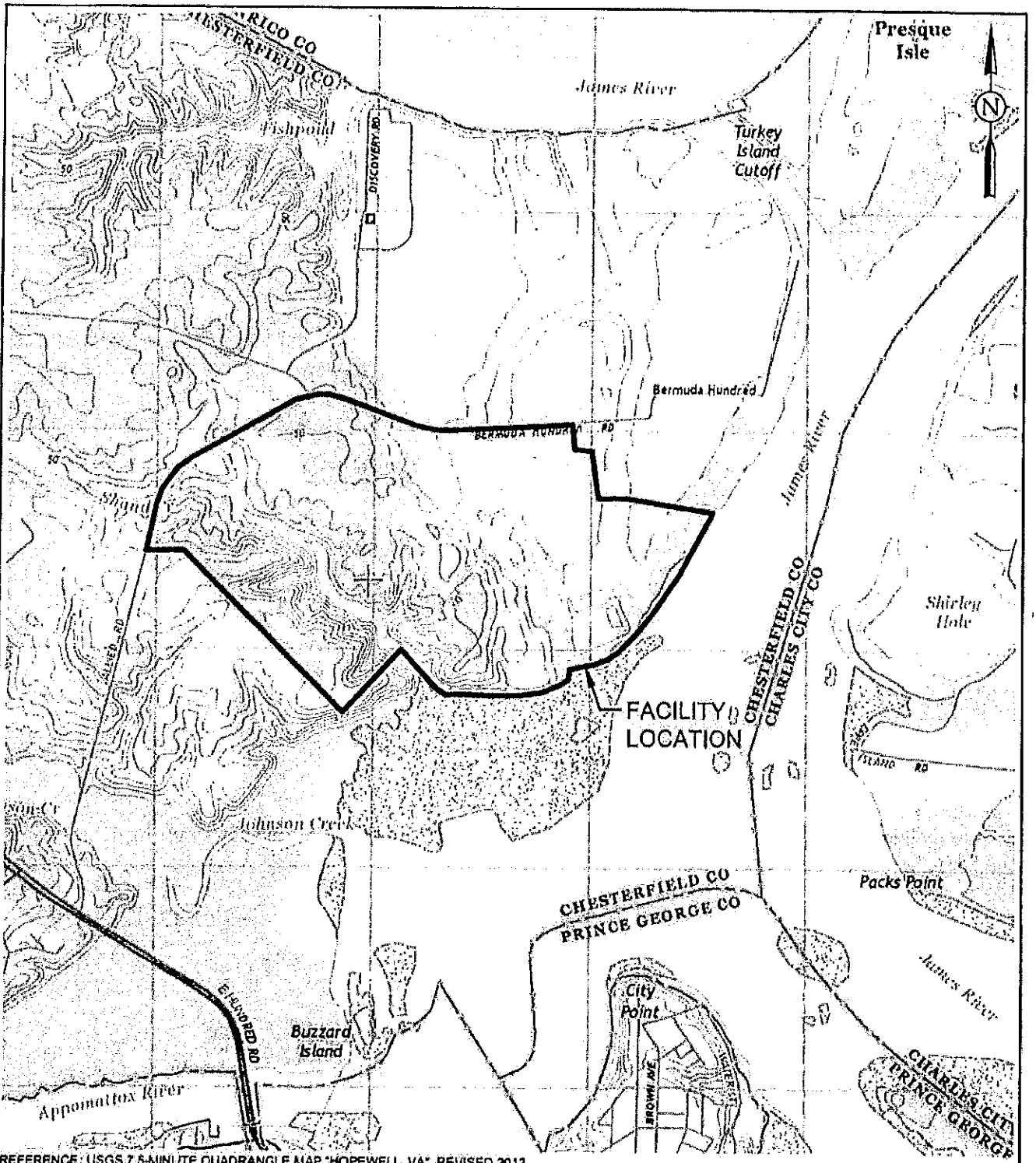
Conceptual Site Model for Dense Non-Aqueous Phase Liquid and Marl, Honeywell Chesterfield Facility, Chester, Virginia dated September 2009

Honeywell Chesterfield Facility, SWMU 4 Groundwater Investigation Report dated June 28, 2013

Chesterfield RCRA Groundwater Study, Vertical and Horizontal Plume Delineation; dated July 2, 2014

Corrective Measure Study, Honeywell, Chesterfield Facility, Chester, Virginia dated April 29, 2016, Revised March 2017

Sediment Preliminary Remediation Goals, Rev 3, Western Cooling Water Ditch, Honeywell Chesterfield Facility; dated May 18, 2016



REFERENCE: USGS 7.5-MINUTE QUADRANGLE MAP "HOPEWELL, VA", REVISED 2013.

Amec Foster Wheeler
Environment & Infrastructure, Inc.
751 Arbor Way, Suite 180
Blue Bell, PA 19422
Tel. 610-828-8100
www.amecfw.com

CLIENT: Honeywell

PROJECT: CORRECTIVE MEASURES STUDY
HONEYWELL PM&T CHESTERFIELD FACILITY
CHESTER, VIRGINIA

PROJECT NO.: 7772160005
REVISION NO.: 0
DATE: APRIL 2016

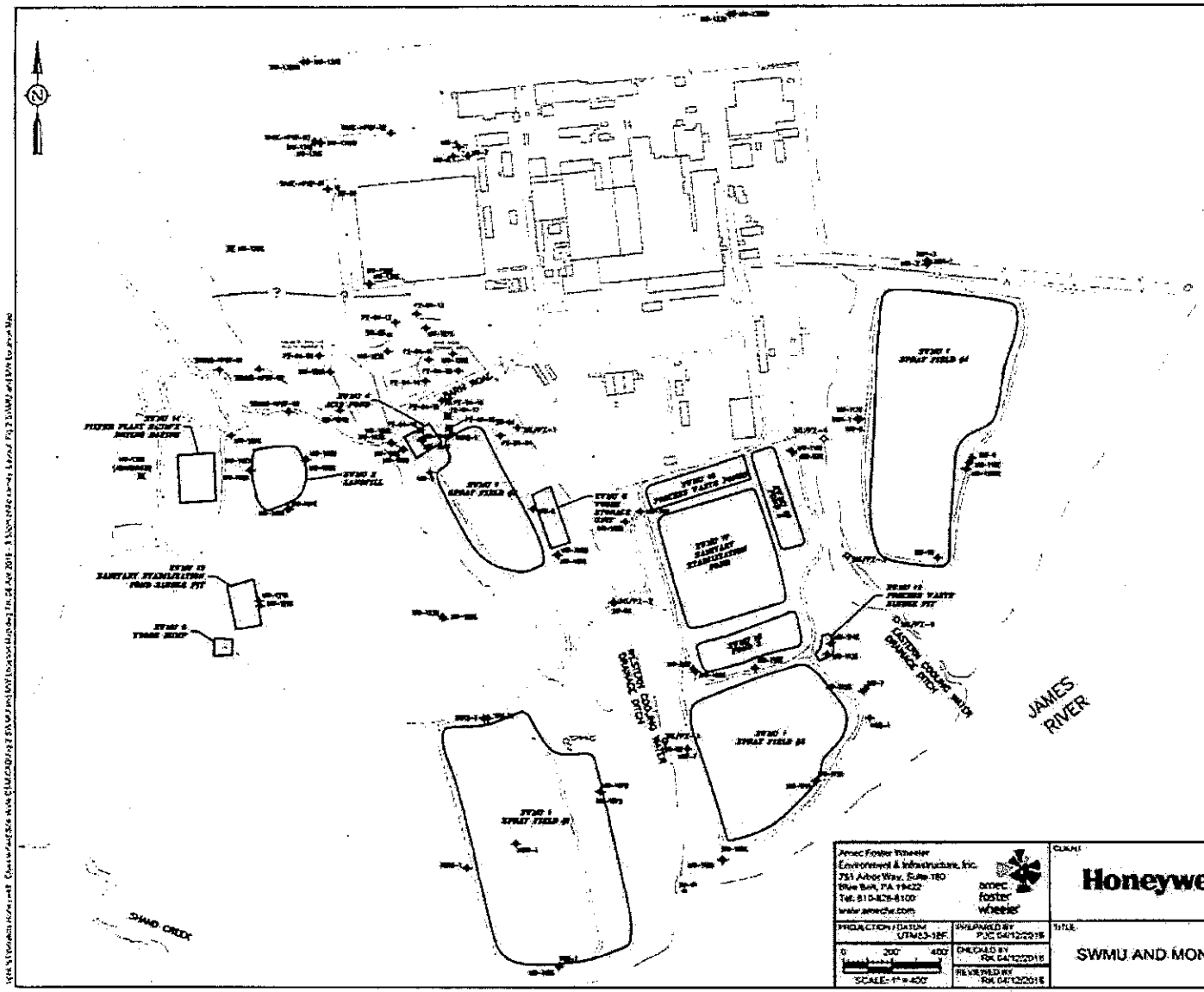
PROJECTION / DATUM: UTM83-18F
0 1000' 2000'
SCALE: 1" = 2,000'

PREPARED BY: PJC 04/12/2016
CHECKED BY: RK 04/12/2016
REVIEWED BY: RK 04/12/2016

TITLE: SITE LOCATION MAP

FIGURE NO.: 1

\\phl-fs1\projects\Honeywell - Chesterfield\Site-Wide CSM\CAD\Fig 1 Site Location Map.dwg Fri, 08 Apr 2016 - 3:09pm philip.carney Layout: Fig 1 Site Location Map



REFERENCES

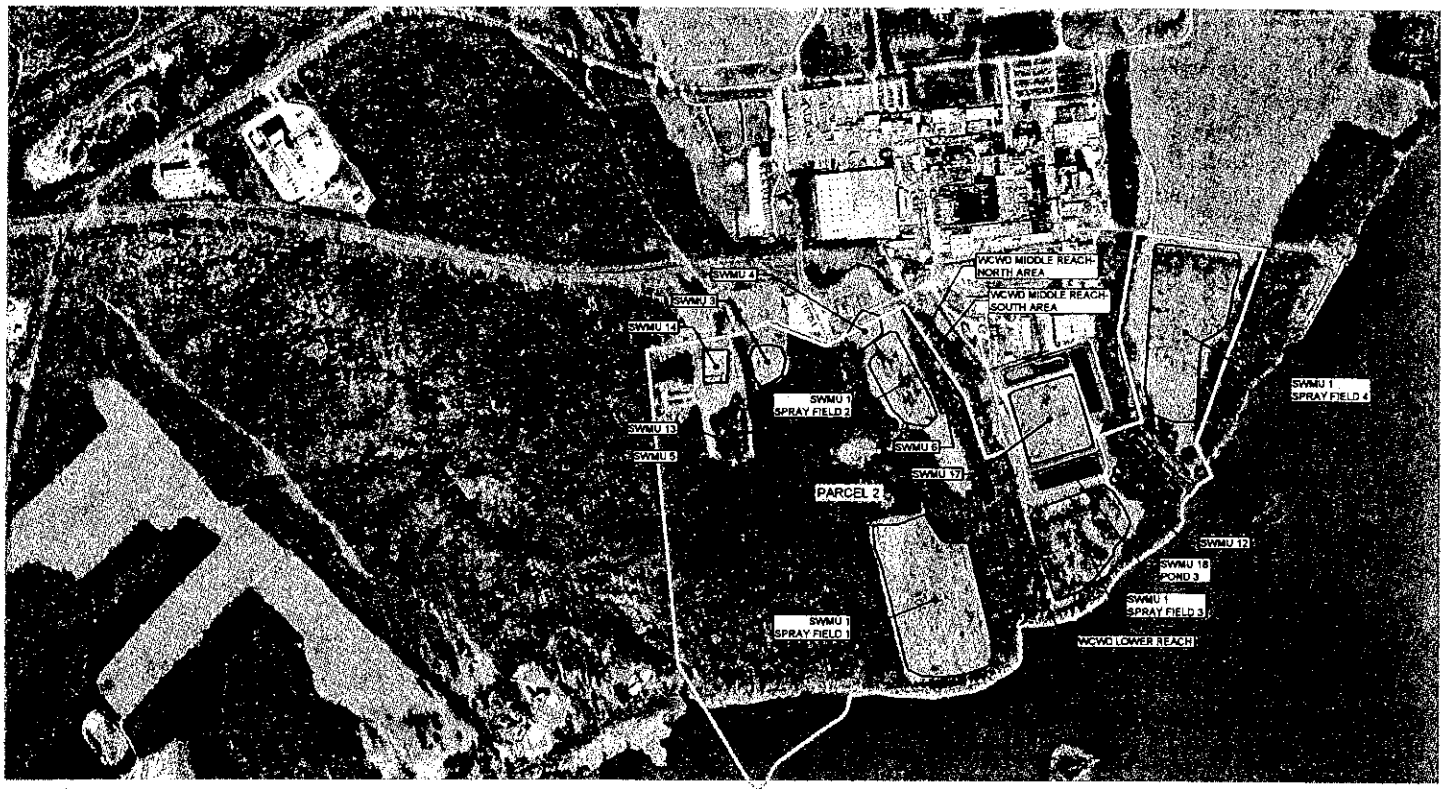
1. MAP ENTITLED "CHESTERFIELD PLANT BOUNDARY PLOT", CAD DWG 001A1095, BY AUSTIN BROCKENBROUGH AND ASSOCIATES, CHESTER, VA., UPDATED 2/16/94.
2. TOPO.DWG AND STREAM DWG FILES EXTRACTED FROM CHESTERFIELD COUNTY, VA. GIS SYSTEM DATED 5/22/00

LEGEND

- BUILDING
- ROAD
- STREAM OR DITCH
- FENCE
- SWMU 5 — SOLID WASTE MANAGEMENT UNIT AND ID
- APPROXIMATE LIMIT OF MARL (EXACT LOCATION UNKNOWN)
- MW-13100 — EXISTING MONITORING WELL
- MW-4 — AST LEAK DETECTION MONITORING WELL
- MW-1305 — IF MARKED WITH "X", SAMPLING LOCATION IS ABANDONED
- MW-1225 — SAMPLING LOCATIONS IN THIS COLOR DRAW FROM RECENT ALLUVIUM
- MW-1220 — SAMPLING LOCATIONS IN THIS COLOR DRAW FROM THE POTOMAC AQUIFER

Amec Foster Wheeler Environment & Infrastructure, Inc. 751 Arbor Way, Suite 180 Blue Bell, PA 19422 Tel: 610-828-8100 www.amecfw.com	CLIENT: Honeywell	PROJECT: CORRECTIVE MEASURES STUDY HONEYWELL PLANT CHESTERFIELD FACILITY CHESTER, VIRGINIA	PROJECT NO: 7772180025 REVISION NO: 0 DATE: APRIL 2018
PROJECTION / DATUM: UTM83-18F	PREPARED BY: PJC 04/12/2018 CHECKED BY: RK 04/12/2018 REVIEWED BY: RK 04/12/2018	TITLE: SWMU AND MONITORING WELL LOCATION MAP	FIGURE NO: 2
0 200' 400' SCALE: 1" = 400'			

Exhibit B
Activity and Use Limitation Areas



REFERENCES

- AERIAL FROM ESRI WORLD IMAGERY SERVICE.
- PARCEL BOUNDARIES FROM DRAWING ENTITLED "ALTA/NSPS LAND TITLE SURVEY", PREPARED BY TIMMONS GROUP, PRINCE GEORGE, VA, DATED 04-28-2016, LAST REVISED 06-13-2016.

Amec Foster Wheeler
Environment & Infrastructure, Inc.
751 Arbor Way, Suite 150
Blue Bell, PA 19422
Tel: 610-828-8100
www.amecfw.com

CLIENT: AdvanSix

PROJECT: UNIFORM ENVIRONMENTAL COVENANT AGREEMENT
AdvanSix - CHESTERFIELD FACILITY
CHESTER, VIRGINIA

PROJECT NO.: 7772173040
REVISION NO.: 0
DATE: NOVEMBER 2017

PROJECTION / DATUM: VA83-SF

0 300 600
SCALE: 1" = 600'

PREPARED BY: PJC 11/01/2017
CHECKED BY: JW 11/01/2017
REVIEWED BY: RK 11/01/2017

TITLE: PARCEL 2
AND LOCATIONS OF SWMUs AND WCWDs

FIGURE NO.:

P:\Waterpath\...\Chesterfield\Corrective Measures Implementation\UECA\Graphics\mxd\CAD Files\Cad UECA.dwg, Thu, 02 Nov 2017 - 12:01pm, pjcclancy, Layout: 02 Parcel 2 SWMUs-WCWDs

Site-Wide Activity and Use Restrictions

Activity and Use Restriction 1. The Property shall be restricted to commercial and/or industrial purposes and shall not be used for residential purposes unless it is demonstrated to the Agency that such use will not pose a threat to human health or the environment and the Agency provides prior written approval for such use. "Residential purposes" include, but are not limited to, all purposes that provide for living accommodations (not including temporary overnight accommodations ancillary to the industrial or commercial use of the property) or health or educational services (e.g. dormitories, senior citizen housing, any day care facility whether for infants, children, the infirm, or the elderly, but not including limited health or educational services ancillary to the industrial or commercial use of the property).

Activity and Use Restriction 3. No new wells shall be installed on the Property unless the Agency gives its prior written approval based on a demonstration that either (A) such wells are necessary to implement the final remedy selected by the Agency, or (B) the use of groundwater from such wells for other purposes will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy.

Activity and Use Restriction 4. Groundwater at the Property shall not be used for any purpose other than implementation of the final remedy selected by the Agency unless the Agency gives its prior written approval for such use based on a demonstration that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy.

Activity and Use Restriction 5. A vapor intrusion control system shall be installed in any new structures constructed above a groundwater plume that exceeds the Agency's regional screening levels for vapor intrusion, or within one hundred (100) feet of the perimeter of such a plume, unless it is demonstrated to the Agency that vapor intrusion does not pose unacceptable risk to human health and the Agency provides written approval that no vapor intrusion control system is needed.

Areas Restricted:

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Specific Areas of Use Restriction

Area and Use Restriction 2: Any earth moving activities, including excavation, drilling and construction activities, in the areas at the Property where any contaminants remain in soils above the Agency's screening levels for non-residential use, or in groundwater above the Agency's maximum contaminant levels for drinking water (or Agency regional screening levels if no maximum contaminant levels have been adopted), shall be conducted in accordance with the Agency-approved materials management plan.

Areas Restricted:

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-77.2844072,37.3314554,0
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-77.2844276,37.3315045,0 (Point of Beginning)

Solid Waste Management Unit 1- Sprayfield 2

-77.2841593,37.3352083,0 (Point of Beginning)
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-77.2838829,37.3352414,0
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-77.2838191,37.3351759,0
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-77.2842385,37.335174,0
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-77.2841852,37.3351974,0
-77.2841593,37.3352083,0 (Point of Beginning)

Solid Waste Management Unit 1-Sprayfield 3

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-77.28043,37.330492,0
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-77.2804383,37.3305137,0
-77.280444,37.3305311,0
-77.2804513,37.3305541,0
-77.2804607,37.3305833,0
-77.2804725,37.3306194,0
-77.2804866,37.3306617,0
-77.2805026,37.3307092,0
-77.2805202,37.3307607,0
-77.2805392,37.3308155,0
-77.2805592,37.3308723,0
-77.2805799,37.3309303,0
-77.280601,37.3309884,0 (Point of Beginning)

Solid Waste Management Unit 1- Sprayfield 4

-77.2781521,37.3364262,0 (Point of Beginning)
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-77.2781374,37.3365403,0
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-77.2780909,37.3367036,0
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-77.2780710,37.3367224,0
-77.2780592,37.3367297,0
-77.2780459,37.3367358,0
-77.2780311,37.3367410,0
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-77.2778578,37.3336244,0
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-77.2782212,37.3337727,0
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-77.2782378,37.3338080,0
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-77.2782204,37.3356679,0
-77.2782171,37.3357160,0
-77.2782143,37.3357597,0

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-77.2782104,37.3358330,0
-77.2782092,37.3358633,0
-77.2782082,37.3358912,0
-77.2782071,37.3359180,0
-77.2782059,37.3359451,0
-77.2782042,37.3359738,0
-77.2782018,37.3360054,0
-77.2781986,37.3360414,0
-77.2781943,37.3360827,0
-77.2781892,37.3361285,0
-77.2781834,37.3361774,0
-77.2781772,37.3362283,0
-77.2781707,37.3362799,0
-77.2781642,37.3363309,0
-77.2781580,37.3363801,0
-77.2781521,37.3364262,0 (Point of Beginning)

Solid Waste Management Unit 3

-77.2871351,37.3348984,0 (Point of Beginning)
-77.287133,37.3349114,0
-77.2871303,37.334925,0
-77.2871271,37.3349387,0
-77.2871235,37.3349523,0
-77.2871199,37.3349653,0
-77.2871163,37.3349774,0
-77.287113,37.3349881,0
-77.2871101,37.3349972,0
-77.2871077,37.3350044,0
-77.2871053,37.3350099,0
-77.287102,37.335014,0
-77.2870972,37.3350171,0
-77.2870902,37.3350194,0
-77.2870802,37.3350214,0
-77.2870665,37.3350234,0
-77.2870484,37.3350256,0
-77.2870254,37.3350284,0
-77.2869981,37.3350316,0
-77.2869675,37.3350352,0
-77.2869343,37.3350389,0
-77.2868994,37.3350427,0
-77.2868637,37.3350464,0
-77.2868282,37.3350498,0
-77.2867935,37.3350528,0
-77.2867606,37.3350552,0
-77.2867295,37.3350571,0

-77.2867002,37.3350585,0
-77.2866727,37.3350593,0
-77.2866471,37.3350595,0
-77.2866234,37.3350593,0
-77.2866015,37.3350584,0
-77.2865816,37.3350571,0
-77.2865634,37.3350552,0
-77.286547,37.3350526,0
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-77.2865185,37.3350447,0
-77.286506,37.335039,0
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-77.2863666,37.3347703,0
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-77.2871358,37.3348433,0
-77.2871364,37.3348534,0
-77.2871367,37.3348639,0
-77.2871368,37.3348747,0
-77.2871363,37.3348862,0
-77.2871351,37.3348984,0(Point of Beginning)

Solid Waste Management Unit 4

-77.2841952,37.3351931,0 (Point of Beginning)
-77.2842118,37.335186,0
-77.2842385,37.335174,0
-77.2842647,37.3351617,0
-77.2842895,37.3351492,0
-77.2843123,37.3351367,0
-77.2843325,37.3351244,0
-77.2843493,37.3351124,0
-77.2843623,37.3351009,0
-77.2843716,37.3350899,0
-77.2843777,37.3350792,0
-77.2843803,37.3350715,0
-77.2845248,37.3349913,0
-77.2847867,37.3348873,0
-77.2850363,37.3351681,0
-77.2850194,37.3352557,0
-77.2848593,37.3354169,0
-77.2846801,37.3356546,0
-77.2845983,37.3356679,0
-77.2843534,37.3356193,0
-77.2842693,37.3355836,0
-77.2842355,37.33551,0
-77.2841801,37.3352641,0
-77.2841952,37.3351931,0 (Point of Beginning)

Solid Waste Management Unit 5

-77.2874432,37.3328458,0 (Point of Beginning)
-77.2874556,37.3326606,0
-77.2877104,37.3326513,0
-77.2877033,37.3328545,0
-77.2874432,37.3328458,0 (Point of Beginning)

Solid Waste Management Unit 6
-77.2828872,37.3345572,0 (Point of Beginning)
-77.2826223,37.3339069,0
-77.282891,37.3338398,0
-77.2831516,37.3344575,0
-77.2828872,37.3345572,0 (Point of Beginning)

Solid Waste Management Unit 12
-77.2788547,37.3327342,0 (Point of Beginning)
-77.2788747,37.3325858,0
-77.2790733,37.3325275,0
-77.2791258,37.332593,0
-77.2790616,37.3326582,0
-77.2790337,37.3327185,0
-77.2790259,37.3328119,0
-77.2789269,37.3328318,0
-77.2788547,37.3327342,0 (Point of Beginning)

Solid Waste Management Unit 13
-77.2871286,37.3335293,0 (Point of Beginning)
-77.2870242,37.3330027,0
-77.2873896,37.3329539,0
-77.2875145,37.3334489,0
-77.2871286,37.3335293,0(Point of Beginning)

Solid Waste Management Unit 14
-77.2876821,37.33499,0 (Point of Beginning)
-77.2876613,37.334439,0
-77.2881722,37.3344206,0
-77.2881989,37.3349655,0
-77.2876821,37.33499,0 (Point of Beginning)

Solid Waste Management Unit 17
-77.2799363,37.3344106,0 (Point of Beginning)
-77.2796704,37.3337393,0
-77.2796372,37.3336184,0
-77.2795607,37.3333626,0
-77.2795482,37.3332748,0
-77.2795458,37.3332686,0
-77.2795559,37.3332187,0

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-77.280903,37.3329201,0
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-77.28133,37.3341782,0
-77.2812782,37.3342084,0
-77.2812782,37.3342084,0
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-77.2800434,37.3344951,0
-77.2799762,37.3344917,0
-77.2799363,37.3344106,0(Point of Beginning)

Solid Waste Management Unit 18-Pond 3

-77.2799178,37.3329581,0 (Point of Beginning)
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-77.2798317,37.3329849,0
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-77.2802546,37.3328563,0
-77.2802411,37.3328605,0
-77.2802248,37.3328657,0
-77.2799178,37.3329581,0 (Point of Beginning)

Western Cooling Water Ditch – Middle Reach, South Area

-77.28312558720,37.33499339130,0 (Point of Beginning)
-77.28307983330,37.33501243130,0
-77.28305453350,37.33497366900,0
-77.28303852140,37.33495199360,0
-77.28303680290,37.33494966800,0

-77.28300714000,37.33490951450,0
-77.28299157520,37.33489131490,0
-77.28303418140,37.33486808110,0
-77.28305071110,37.33488740800,0
-77.28309966070,37.33495367010,0
-77.28312558720,37.33499339130,0 (Point of Beginning)

Western Cooling Water Ditch – Middle Reach, North Area
-77.28331071570,37.33527175130,0 (Point of Beginning)
-77.28328754430,37.33528080650,0
-77.28326437400,37.33528986160,0
-77.28322677150,37.33522851420,0
-77.28324994290,37.33521945900,0
-77.28327311320,37.33521040390,0
-77.28331071570,37.33527175130,0 (Point of Beginning)

Western Cooling Water Ditch – Lower Reach
-77.28150327060,37.33223230640,0 (Point of Beginning)
-77.28145372630,37.33224392970,0
-77.28145360060,37.33224367880,0
-77.28143498630,37.33219308350,0
-77.28142050260,37.33214848380,0
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-77.28139588740,37.33206204710,0
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-77.28144635480,37.33205348910,0
-77.28146065670,37.33210549530,0
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-77.28150327060,37.33223230640,0 (Point of Beginning)