UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

Costco Parcel
Sperry Marine Facility
Charlottesville, VA

EPA ID: VAD 003 123 833

April 2014

I. Introduction

The United States Environmental Protection Agency (EPA) prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for the proposed Costco Wholesale Corporation Parcel (Costco Parcel or Parcel) which is located on the Sperry Marine Facility (Facility) in Charlottesville, Virginia. The Parcel is located at 3171 District Avenue/Seminole Trail (Route 29) in Charlottesville. It is currently owned by Albemarle Place EAAP LLC (Albemarle). EPA's proposed remedy for the Parcel addresses contaminated soil, soil vapor and groundwater and is described in Section VI, Proposed Remedy, below.

This SB summarizes key information that EPA relied on in making this proposed remedy selection. The Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. §§ 6901 *et seq*. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their properties. The Commonwealth of Virginia (VA) was authorized to implement the Corrective Action Program under Section 3006 of RCRA on September 29, 2000. EPA retained the lead for this Facility under a work share agreement with the VA Department of Environmental Quality (VADEQ).

The Administrative Record (AR) for the Site contains all documents, including data and quality assurance information on which EPA's proposed remedy is based. The Index to the AR for the Facility, including the Parcel is listed in Attachment 1. See Section VIII, Public Participation, for information on how you may review the AR.

II. Background

The Facility is located at 1070 Seminole Trail (Route 29) in Charlottesville, Virginia. It has been used to manufacture navigational instruments and systems since 1956. The manufacturing activities have included machining, degreasing, soldering and painting. Hazardous and non-hazardous chemicals and petroleum products have been and are currently used in the manufacturing process.

In 1999, the Facility subdivided its 82-acre property into three lots: Lots 1, 2 and 3. Lot 3 is currently owned by Northrup Grumman Systems Corporation and contains a manufacturing building, paved parking lots and concrete surfaces surrounding the building. Approximately 19 acres of Lot 3 is used for manufacturing purposes (Manufacturing Parcel).

The Costco Parcel is approximately 14.7 acres and is located on portions of Lots 2 and 3. The boundaries of the Parcel are shown in Exhibit 1. The Parcel was not used for manufacturing purposes. The Parcel is located along the north-northeastern border of the Manufacturing Parcel.

Trees and vegetation have been removed from the Costco Parcel; graded soil, two

large soil stock piles and part of a large earthen storm water management basin remain. As part of recent development activities, an unnamed tributary that flowed along the Parcel's southern boundary was diverted into an underground pipe. The tributary historically flowed off-site under Route 29 into Meadow Creek, to the southeast. The former tributary channel was filled in and the diverted water still discharges to Meadow Creek.

In Facility environmental investigations, which began in 1987, soil and groundwater (GW) samples collected from the Parcel indicated that soil and GW were impacted by Facility-related contaminants. GW samples from four Parcel monitoring wells contained chlorinated volatile organic compounds (cVOCs), also known as chlorinated solvents. Three cVOCs exceeded Federal maximum contaminant levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1, for drinking water. The cVOCs were tetrachloroethylene (PCE), trichloroethylene (TCE), and 1,2-dichlorethylene (DCE). PCE and TCE are considered carcinogenic and are also associated with other health effects, while DCE is not considered carcinogenic, but has also been found to cause adverse health effects. Information provided by employees who worked at the Facility in the 1970s suggests that spent solvents were used for weed control on the Parcel and on a portion of an adjoining parcel located downgradient from the Parcel. Later investigations also identified cVOCs in sediment and water collected from the tributary located on the Parcel (prior to diversion into an underground pipe). The solvent types, volumes and dates of application on the Parcel are unknown, but the practice has been reported to have ended in the 1970s.

III. Summary of Environmental Investigations

A. VA Voluntary Remediation Activities

From 1987 to the present, environmental investigations and remedial actions have been conducted at the Facility, including the Parcel. Starting in 1987, the Facility conducted due diligence environmental assessments in connection with potential property transactions. The Facility discovered cVOCs in GW and reported it to VA's Waste Management Program. In 1996, the Facility enrolled in VA's Voluntary Remediation Program (VRP) to complete environmental investigations and cleanup activities. During Site characterization activities, constituents of potential concern (COPCs) identified for soil were PCE, TCE and chromium, and for GW were PCE, TCE, chromium, and cis-1,2 DCE (cDCE). The risk assessments, approved by VADEQ, concluded that COPCs found in Facility soils did not pose unacceptable risk to human health and the environment, provided that parcel use is restricted to industrial use (i.e., no residential). The Facility has relied on public water for decades, and groundwater beneath the Facility is not used.

In 2000, VADEQ issued VRP Completion Certificates and Restrictive Covenants were notarized and recorded for Lots 2 and 3. The Covenants prohibit GW use (except for further environmental monitoring and testing), and prohibit residential uses for both Lots. A condition for Lot 3 (which includes the Parcel), required biennial GW monitoring. GW samples were collected from seven wells in 2000, 2002 and 2004. The 2005 VADEQ- approved GW Report concluded that GW contamination was decreasing, and no further monitoring was required on Lot 3 even though some COPCs exceeded MCLs. VADEQ issued a Completion Certificate for Lot 3 in February 2000.

B. EPA RCRA Corrective Actions Completed Under the Facility Lead Program

In January 2008, Unisys Corporation (a previous Facility owner) entered into the EPA Corrective Action Facility Lead Program to address any remaining contamination at the Facility. It began addressing data gaps in previous investigations and exploring further cleanup options through a Facility Lead Agreement (FLA). In June 2008, EPA approved a *RCRA Facility Investigation (RFI) Workplan* (RFI WP) which identified three of the previously identified 13 solid waste management units (SWMUs) and one of the two previously identified Areas of Concern (AOCs), AOC-2, for further investigation (see Exhibits 1 and 2).

CVOCs found in AOC-2 were likely sprayed along a dirt road that ran between two test towers, one of which, Test Tower 1, was located on the Parcel. For AOC-2, the RFI WP recommended: (1) delineating the vertical and horizontal extent of VOCs in soil; (2) collecting paired sediment/surface water samples from the unnamed tributary which ran along AOC-2's border with the Facility, and; (3) determining if COPCs in GW were moving off-site downgradient from the Parcel.

In September 2010, Unisys sent its investigation results to EPA in the *RFI Report, Sperry Marine, Charlottesville, VA* (Sperry Marine RFI). The Sperry Marine RFI reported that PCE soil source area(s) remained on AOC-2. The Sperry Marine RFI recommendations for AOC-2 were: (1) complete an Interim Measure (IM) i.e., remove contaminated soil that exceeded health-based levels for cVOCs; and (2) following contaminated soil removal, monitor soil and soil vapor to determine the need for further IMs; and (3) evaluate the collected data to determine if additional engineering and/or land use restrictions would be required in order to protect and prepare the Parcel for potential future use. EPA approved the Sperry Marine RFI in March 2013.

Based on the EPA-approved Sperry Marine RFI, GW flow beneath the Parcel is primarily to the south, across the Parcel, to the former unnamed tributary. Two off-Parcel sources of cVOCs in GW were also identified. One source is from the Facility, and the other is from the up-gradient Comdial Corporation facility (Comdial), located on the Parcel's north-northeastern boundary. The cVOCs from Comdial indicate a different cVOC pattern than Facility-related cVOCs. GW from the Facility flows towards the former unnamed tributary and onto the Parcel.

In November 1989, prior to diverting the unnamed tributary on the Parcel into a buried pipe, surface and sediment samples from the tributary contained elevated levels of COPCs, with a maximum PCE level of 2.4 parts per million (ppm) in sediment and a water maximum TCE level of 0.077 ppm. These maximum sediment and water concentrations were above EPA Region III's biological screening benchmarks (BTAGs). In July, 2011 tributary sediment and water were sampled again, as close to the 1989 locations as possible. PCE in sediment was 31 ppm (maximum), and in water, 0.029 ppm (maximum), with only the sediment sample exceeding the applicable BTAG. Other cVOCs previously detected in sediment and water were not detected. The tributary is now enclosed in a buried pipe that discharges off-site to Meadows Creek, southeast of the Parcel.

In December 6, 2011, EPA approved the *AOC-2 Soil IM Workplan* (Soil IM WP). The Soil IM WP objectives were to delineate and remove soil contaminated with COPCs from AOC-2. COPCs included the following cVOCs: PCE, TCE, cDCE and vinyl chloride. The *Interim*

Measures Report AOC-2 (November 2012) was approved by EPA in January 3013 and depicts the three areas that were excavated and is shown on Exhibit 1. The PCE soil cleanup level used was 0.39 ppm. This level was based on leachability of PCE from soil to GW using soil samples from AOC-2. Soil was excavated to depths ranging from 6 to 18 feet to meet the cleanup level. Bedrock and groundwater were encountered in small areas within two of the three excavations. The 2,581 tons of contaminated soil were disposed of off-site.

C. Investigations Conducted by Costco and EDENS

In 2013, Costco and EDENS, an affiliate of Albemarle, conducted two separate environmental investigations of the Parcel. Costco submitted a *Limited Site Investigation* (May 31, 2013) and EDENS submitted a *Soil and Soil Gas Confirmation Sampling* (July 16, 2013). As part of the Costco Investigation, 28 soil borings and six hand-augered borings were installed. Forty-five soil samples were collected from 2 to 21 feet below ground surface (bgs), and were analyzed for VOCs and chromium. GW was not encountered in the borings. Soil vapor screening points were installed at 14 locations, 12 within the proposed building footprint. Ambient air samples were also collected to identify background levels. After soil and soil vapor samples were collected, GW was sampled by advancing nine temporary wells from depths of 23 to 60 feet bgs. GW was encountered in the wells from 15.6 to 38 feet bgs and GW samples were analyzed for VOCs and chromium. Four wells were within the building footprint. Exhibit 2 shows all sampling locations and analytical results. Exhibit 1 shows GW results in more detail.

Investigation results show that for soil, COPCs did not exceed VADEQ Tier III or EPA Regional Screening Levels (RSLs) for non-residential land use. VADEQ Tier III are equivalent to EPA's RSLs for non-residential land use. Chromium was found in all soil samples and was determined to be a naturally occurring element in the soil. Concentrations of PCE, TCE, 1,1-dichloroethane (DCA) and vinyl chloride (VC) exceeded VADEQ's Tier III Commercial Subslab Soil Gas Screening Levels. PCE was the predominate COPC, ranging from 1.4 to 25,000,000 micrograms per cubic meter (ug/ m^3). VADEQ's Tier III screening level for PCE is 584 ug/m^3. VADEQ sub-slab screening was used because EPA RSLs apply to indoor vapor only. Groundwater samples from seven of the nine wells exceeded MCLs for five cVOCs. Exhibits 1 and 2 show sample locations and sampling results. EPA concluded that the Parcel has been sufficiently characterized.

EDENS's *Soil and Soil Gas Confirmation Sampling* (July 16, 2013) was conducted to determine whether there are temporal variations in soil and soil gas levels from those reported in the *Limited Site Investigation* (May 31, 2013). GW samples were not collected. EDENS's consultants installed six soil vapor probes at locations previously sampled by Costco, plus one in a new location, using Costco's methodology and sampling depths. Soil samples were collected from five of the seven soil vapor locations.

Two rounds of soil vapor samples were collected on July 1, 2013. Table 1 shows the results of the three soil vapor sampling events from April 18, 2013 and July 1, 2013. The vapor results confirmed that PCE, TCE, DCA and VC concentrations exceeded VDEQ's Tier III screening levels. VDEQ has published soil vapor screening levels for construction workers in trenches. These screening levels are used to protect workers from dermal and inhalation risks from cVOCs. Only PCE levels from the initial round of soil vapor sampling exceeded the

construction worker levels at two sampling locations. PCE levels varied from the initial April 2013 sampling with some locations exhibiting lower and others higher levels in the July 2013 samples. Soil sample results show that no cVOCs exceeded EPA or VDEQ screening levels for non-residential uses.

A human health risk assessment was not conducted for the Parcel. An ecological risk assessment was not conducted because the Parcel, once wooded, is now not suitable for sustaining a viable foraging and breeding wildlife community.

D. Costco Corrective Measures Study

On January 30, 2014, EPA approved a *Corrective Measures Study, Proposed Costco Site* (December 6, 2013) (CMS). The CMS is based on previous investigations conducted at the Facility, including the Parcel. The CMS used EPA screening criteria to consider remedy alternatives. The CMS includes a Soil Management Plan (SMP) for identifying and separating contaminated soil from re-usable soil during Parcel development.

IV. Corrective Action Objectives

EPA has identified the following Corrective Action Objectives (CAOs) for soil, soil vapor and groundwater at the Parcel:

A. Soil

The soil CAO is to attain EPA's RSLs for non-residential exposure and construction/utility worker exposure scenario and to control exposure to remaining contaminated soils.

B. Soil Vapor

The CAO for potential vapor intrusion for occupied buildings is to control human exposure and attain EPA's acceptable cancer risk range of 10^{-5} to 10^{-6}.

C. Groundwater

The GW CAO is to restore the groundwater to drinking water standards and until such time as drinking water standards are restored, to control exposure to the hazardous constituents remaining in the GW by requiring the implementation of a GW monitoring program. The GW monitoring program at the Parcel will be part of the Site-wide monitoring program which will address Site-wide groundwater contamination associated with the Facility. This program will be implemented by Unysis under EPA and/or VADEQ oversight. EPA's proposed remedy also includes compliance with and maintenance of groundwater use restrictions at the Parcel to prevent migration of contaminants while levels remain above MCLs. If an MCL is not established for a cVOC, EPA's RSLs will be used as the CAO for that constituent.

V. Proposed Remedy

A. Soil

EPA's proposed soil remedy consists of (1) the implementation of and compliance with the EPA-approved Soil Management Plan; (2) compliance with and maintenance of land use restrictions; and (3) notification to current and future construction/utility workers of risks to guide the development of appropriate health and safety measures during construction and excavation activities.

B. Soil Vapor

EPA's proposed remedy for any building that is to be occupied on this Parcel is the installation of a Vapor Mitigation System (VMS) as part of building construction and the operation and maintenance (O&M) of such VMS in accordance with an EPA-approved O&M Plan, thereafter.

C. Groundwater

The soil excavation conducted as Interim Measures at the Facility in 2012 removed the source of PCE contamination to the groundwater. EPA anticipates that as a result of the removal of this source, the remaining contamination in groundwater will naturally attenuate, and will ultimately achieve our groundwater cleanup levels (drinking water standards) without further treatment. Therefore, the proposed remedy for groundwater consists of monitored natural attenuation until drinking water standards are met, and compliance with and maintenance of groundwater use restrictions at the Facility to prevent exposure to contaminants while contaminant levels remain above drinking water standards.

D. Land and Groundwater Use Restrictions

Under EPA's proposed remedy, some contaminants remain in GW and soil at the Parcel above levels appropriate for residential uses. Therefore, EPA's proposed remedy for the Parcel requires compliance with and maintenance of the following land and groundwater use restrictions and access and reporting requirements:

1. GW at the Parcel shall not be used for any purpose other than the operation, maintenance, and monitoring activities required by VADEQ and/or EPA, unless it is demonstrated to EPA, in consultation with VADEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the final remedy and EPA, in consultation with VADEQ, provides prior written approval for such use;

2. The Parcel shall not be used for residential purposes unless it is demonstrated to EPA, in consultation with VADEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy, and EPA, in consultation with VADEQ, provides prior written approval for such use;

3. The Parcel shall not be used in a way that will adversely affect or interfere with the

integrity and protectiveness of the final remedy;

4. No new wells shall be installed on the Parcel unless it is demonstrated to EPA, in consultation with VADEQ, that such wells are necessary to implement the final remedy and EPA provides prior written approval to install such wells;

5. A vapor intrusion control system, the design of which shall be approved in advance by EPA, shall be installed in each new structure constructed above the contaminated groundwater plume or within 100- feet around the perimeter of the contaminated groundwater plume, unless it is demonstrated to EPA that vapor intrusion does not pose a threat to human health and EPA provides prior written approval that no vapor intrusion control system is needed;

6. Compliance with the EPA-approved GW monitoring program;

7. Compliance with the EPA-approved Soil Management Plan;

8. Compliance with the EPA-approved VMS Operating and Maintenance Plan; and

9. Submittal of annual documentation that contains: (a) an evaluation of the effectiveness of the remedy in reducing contaminant concentrations and in restoring groundwater to MCLs or RSLs, if applicable, (b) an evaluation of whether indoor air in every building that is to be occupied on this Parcel meets EPA's risk range, and; (c) a statement whether land use restrictions are in place and effective.

E. Implementation

EPA proposes to implement the final remedy at the Parcel through an enforceable mechanism which shall consist of an Order and/or an Environmental Covenant executed pursuant to the Virginia Uniform Environmental Covenants Act, Title 10.1, Chapter 12.2, §§10.1-1238 - 10.1-1250 of the Code of Virginia (UECA) and UECA's implementing regulations, 9 VAC 15-90-10 through 60. If an Environmental Covenant is implemented as part of the final remedy, it will be recorded in the chain of title for the Parcel property and, once recorded, will be enforceable against future land owners. In addition, for purposes of implementing the groundwater use restrictions, EPA acknowledges that the Virginia Department of Health (VDH) has the authority to issue drinking water permits for wells, and VA regulations authorize the VDH to prohibit the use of contaminated GW as a drinking water source. See 12 VACS-630-10 through 480. If EPA determines that additional land or groundwater use restrictions or other corrective actions are necessary to protect human health or the environment, EPA has the authority to require and enforce such additional corrective actions through an enforceable mechanism which may include an Order and/or an Environmental Covenant. Additional enforceable land and groundwater use restrictions or other corrective actions may also be implemented through state laws or regulations (such as the aforementioned VDH groundwater permitting and enforcement authority) and/or local laws, regulations, ordinances or zoning restrictions.

VI. Evaluation of EPA's Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy, according to EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates remedy alternatives using three decision threshold criteria as general goals. In the second phase, EPA evaluates the remaining alternatives using seven balancing criteria.

A. Threshold Criteria

1. Protect Human Health and the Environment: The primary risks posed to human health and the environment at the Facility are related to direct contact with contaminated soil, soil vapor and/or GW by ingestion, inhalation of dust and vapor, and skin or contact with eyes. As part of Parcel development, soil will be excavated and sampled to determine whether it will be removed and disposed off-site or reused on-site. Once developed, the Parcel will consist of parking lots and buildings, thereby eliminating contact with soil and soil dust inhalation. GW will not be used for potable uses, and installation and maintenance of a VMS in the Costco building will prevent vapor intrusion. In addition, land and groundwater use restrictions will be implemented to minimize the potential for human exposure to contamination and protect the integrity of the remedy.

2. Achieve Media Cleanup Objectives: The proposed remedy will meet cleanup objectives appropriate for the expected commercial (non-residential) use of the Parcel.

3. Remediating the Source of Releases: In proposed remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may harm human health and the environment. The last known contaminant releases on the Parcel occurred sometime in the 1970s and resulted in soil and GW contamination. Over the last three decades (approximate), records show that Facility-related GW contaminant levels have generally diminished. In mid-2012, the Facility removed 2,581 tons of soil contaminated with cVOCs from the Parcel, thereby removing a significant source of contaminants to the GW. After construction, the Parcel will be covered with a parking lot and buildings. The impervious surfaces will prevent contact with any residual contaminated soil, dust and vapor and create a barrier to infiltration of precipitation into soil, thereby further reducing any residual soil contaminants from leaching into GW. The proposed remedy will protect human health and the environment from the impacts of previous releases by removing contaminated soil encountered during construction and restricting land use to non-residential purposes and prohibiting GW use until contaminants are below RSLs or MCLs.

B. Balancing/Evaluation Criteria

1. Long-Term Effectiveness: EPA's proposed remedy will maintain protection of human health and the environment by excavation and off-site disposal of contaminated soil encountered during development and by controlling exposure to any hazardous contaminants that may remain in the groundwater until contaminants are below RSLs or MCLs. The Parcel parking lots and buildings will minimize further migration of contaminants from soil into GW and prevent contact with residual contamination in the soil. GW use restrictions will be implemented through an enforceable mechanism, such as an environmental covenant. GW will be monitored until clean up goals are attained. In addition, the VMS will effectively remove cVOC vapors

before entry into any buildings where people might be exposed.

2. Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents: The reduction of toxicity, mobility and volume of hazardous constituents at Parcel will be achieved by the excavation and off-site disposal of contaminated soil. CVOC levels in GW have generally diminished over time and will be monitored to document the reduction in cVOCs until cleanup goals are attained. Any residual contaminated soil will be covered by a parking lot and building, and will reduce leaching of residuals into GW.

3. Short-Term Effectiveness: EPA's proposed remedy includes excavation and off-site disposal of contaminated soil. Construction workers will be informed of potential exposure to residual contamination and be required to take appropriate protective measures to protect themselves from short-term risks. Also, the construction zone will be monitored for any releases of contamination as part of the EPA-approved SMP. Monitoring and dust control measures will be used to protect construction workers from dust and contact with contaminated soil. The public will not be exposed to contamination during excavation and construction activities because construction practices including silt fencing and air monitoring will be used.

4. Implementability: EPA's proposed remedy is readily implementable. Any soil exceeding EPA RSLs discovered during excavation will be removed prior to the Costco development and will be disposed off-site in accordance with applicable RCRA requirements. In addition, EPA does not anticipate any regulatory constraints in implementing GW and land use restrictions and the EPA-approved SMP for the Parcel.

5. Cost: EPA's proposed remedy is cost effective. Soil removal, paving and VMS installation are integrated and implemented as part of the redevelopment of the Parcel. The environmental covenant has a nominal cost associated to its development and implementation. Similarly, long term groundwater monitoring has a nominal cost associated with its implementation.

6. Community Acceptance: EPA will evaluate community acceptance of the proposed remedy during the public comment period, which will be described in the FDRTC.

7. State/Support Agency Acceptance: VADEQ is reviewing EPA's proposed remedy for the Parcel and will comment or concur during the public comment period.

VII. Financial Assurance

EPA has evaluated whether financial assurance for corrective action is necessary to implement EPA's proposed remedy at the Facility. The installation of the VMS is part of the building construction that is anticipated, and budgeted, to be completed within a year. Therefore, no financial assurance is required for the VMS. It is projected that other elements of the proposed remedy, the IC's, and the implementation of the GW monitoring, and the projected maintenance and any sampling costs as part of the VMS and SMP, have only minimal long term costs associated with their implementation (approximately $20,000 annually). Therefore, EPA proposes that no Financial Assurance is required.

VIII. Public Participation

Before EPA makes a final decision on its proposed remedy, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Parcel. The AR contains all information EPA used in considering the proposed remedy. The AR is available for public review during normal business hours at:

U.S. EPA Region III
1650 Arch Street (3LC20)
Philadelphia, PA 19103
Contact: Barbara Smith
Phone: (215) 814-5786
Fax: (215) 814-3114
Email: smith.barbara@epa.gov

Interested parties are encouraged to review the AR and comment on EPA's proposed remedy. The public comment period will last thirty (30) calendar days from the date that the notice is published in a local newspaper. Interested parties may submit comments by mail, fax, or e-mail to Barbara Smith. EPA will hold a public meeting to discuss this proposed remedy upon request. Requests for a public meeting should be made to Barbara Smith.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the proposed remedy, EPA will modify the proposed remedy or select other alternatives based on such new information and/or public comments. EPA will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All who comment on this proposed remedy will receive a copy of the FDRTC. Others may obtain a copy by contacting Barbara Smith at the address listed above.

Signature: Date:

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John A. Armstead, Director
Land and Chemicals Division
US EPA, Region III

Attachment 1: Administrative Record Index

Exhibit 1: Parcel boundaries, AOC-2 and GW cVOCs data

Exhibit 2: Parcel Map showing PCE/TCE levels in GW and Soil Vapor, and PCE levels in Soil

Table 1: VOCs in Soil Gas

Attachment 1

Index to the Administrative Record
For the Statement of Basis for the
Costco Parcel, Charlottesville, VA

2006, June 30 – *EPA Region III Final RCRA Site Visit Report* (June 30, 2006) by ICOR, Ltd.

2008, January 2 – Unisys Letter to EPA wherein Unisys agrees to conduct RCRA Corrective Actions through a Facility Lead Agreement with EPA, Region III.

2008, April -- *RCRA Facility Investigation Workplan, Sperry Marine, Charlottesville, VA*, April 2008 by Geosyntec Consultants, Inc. Includes the *Description of Current Conditions* and summary of previous investigation data, interim measures and VRP environmental covenants conducted at the Facility prior to EPA Facility Lead Corrective Action activities.

2008, June 27 -- EPA letter to Unisys approving the RFI Workplan.

2009, March 11 – *Addendum to RCRA Facility Investigation Work Plan*, March 11, 2009, by Geosyntec Consultants, Inc. WP proposes additional data collection and analysis for AOC-2.

2009, June 18 – EPA letter to Unisys "Final Comments on RFI WP Addendum."

2009, December 7 – *Preliminary Interim Measure Workplan, Area of Concern 2 (Former Weed Control Area), Sperry Marine Facility, Charlottesville, VA*, by Geosyntec Consultants, Inc.

2010, September – *RCRA Facility Investigation Report, Sperry Marine, Charlottesville, VA*, by Geosyntec Consultants, Inc.

2011, May – *AOC-2 Soil Interim Measures Work Plan, Sperry Marine, Charlottesville, VA*, by Geosyntec Consultants, Inc.

2011, November 1 – Unisys letter to EPA, 'Response to [EPA] Comments – AOC-2 Soil Interim Measures Workplan.' Letter contains EPA's comments and Unisys' responses.

2011, December 2 – Unisys letter to EPA, 'Response to [EPA] Comments – AOC-2 Interim Measures Workplan.' Letter contains further EPA comments and Unisys' responses.

2011, December 6 – EPA letter to Unisys, 'EPA Approval of AOC-2 Soil Interim Measures Workplan.'

2012, May 9 – EPA e-mail to Unisys approving Unisys' proposed modifications to AOC-2 WP outlined in the same e-mail.

2012, November – *Interim Measures Report for AOC-2, Sperry Marine, Charlottesville, VA* by Geosyntec Consultants, Inc.

2013, January 7 – EPA letter to Unisys, 'EPA Approval of Interim Measures Report for AOC-2.'

2013, March 18 – Unisys letter to EPA, 'Response to USEPA Comments on the RFI Report.' Letter consists of EPA's comments and Unisys' responses.

2013, March 21 – EPA letter to Unisys, 'EPA Acceptance of RFI Report.'

2013, April 9 – *Workplan Outline for Phase II ESA, Proposed Costco Wholesale Warehouse*, by Terracon Consultants, Inc.

2013, May 31 – *Limited Site Investigation, Proposed Costco Wholesale Warehouse*, by Terracon Consultants, Inc.

2013, July 16 -- *Environmental Services, Soil and Gas Confirmation Sampling, Proposed Costco – Charlottesville, VA* by ECS Min-Atlantic, LLC.

2013, December 5 – EPA letter to Costco, 'Status of Corrective Action.'

2013, December 6 – *Corrective Measures Study, Proposed Costco Site*, by Terracon Consultants, Inc.

2014, January 17 – EPA letter to Costco, 'EPA comments on the Corrective Measures Study (CMS).'

2014, January 20 – *Revised CMS* by Terracon Consultants.

2014, January 30 – EPA letter to Costco approving the revised CMS.

Table 1: TO-15 Volatile Organic Compounds (VOCs) in Soil Gas
Proposed Costco - Charlottesville, VA
ECS and Terracon Data Combined
ECS Project 28:1578-A

Sample Location/Date	Depth (ft)	Parameter											
		1,1 Dichloroethane	1,1 Dichloroethene	1,2 Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	Tetrachloroethylene	1,1,1 Trichloroethane	1,1,2- Trichloroethane	1,1,2,2-Tetrachloroethane	Trichloroethene	Vinyl chloride
SG 1 (4-18-13)	15.8	<0.82	1.6	0.82	5.3	<0.80	3.2	120000	35	<0.83	<1.0	6.1	<0.39
SG 1 (7-1-13)	15.8	<0.82	1.2	<0.82	1.8	1.7	<0.53	1400	39	<0.83	<1.0	1.6	<0.39
SG 1 (7-1-13) Terracon	15.8	<0.82	1.5	<0.82	23	5.1	<0.53	15000	37	<0.83	<1.0	1.6	<0.39
SG-2 (4-18-13)	18.2	<0.82	360	<0.82	5.5	<0.80	<0.52	2.50E+07	1,000	<0.83	<1.0	120	<0.39
SG-2 (7-1-13)	18.2	<0.82	1.0	<0.82	*	<0.80	0.48	210000	440	<0.83	<1.0	400	<0.39
AB-2 (7-1-13) Terracon	18.2	<0.82	70	<0.82	1.8	<0.80	0.8	160000	840	<0.83	<1.0	410	<0.39
SG 2 (4-18-13)	23.8	<0.82	0.89	<0.82	5.2	<0.80	0.58	600	54	<0.83	<1.0	0.93	<0.39
SG 2 (7-1-13)	23.8	<0.82	<0.50	<0.82	<0.80	<0.80	0.95	630	34	<0.83	<1.0	<0.82	<0.39
SG-2 (7-1-13) Terracon	23.8	<0.82	<0.50	<0.52	<0.80	<0.80	0.46	46000	4.8	<0.83	<1.0	1.4	<0.39
SG-4 (4-18-13)	5.0	700	530	<0.82	Col	*	<0.53	130	6600	<0.83	<1.0	3700	<0.39
SG 5 (4-18-13)	9.9	<0.82	1.7	1.6	7200	<0.80	0.7	580	<0.83	<0.83	<1.0	210	340
SG 5 (7-1-13)	9.9	<0.82	16	<0.82	880	160	2.4	2000	0.51	<0.83	<1.0	190	280
SG 5 (7-1-13) Terracon	9.9	<0.82	19	<0.82	1500	160	2.0	3600	1.2	<0.83	<1.0	350	300
SG-6 (4-18-13)	8.4	<0.82	<0.50	<0.52	5	<0.80	<0.53	8100	52	<0.83	<1.0	77	0.49
SG-6 (7-1-13)	8.4	<0.82	<0.50	<0.52	<0.80	<0.80	0.42	8800	48	<0.83	<1.0	1.9	<0.39
SG-6 (7-1-13) Terracon	8.4	<0.82	<0.50	<0.52	<0.80	<0.80	0.47	44000	71	<0.83	<1.0	2.5	<0.39
SG 7 (4-18-13)	5.0	<0.82	<0.50	0.41 J	0.77	<0.80	0.35 J	80	5.3	<0.83	<1.0	0.71 J	<0.39
SG 8 (4-18-13)	5.0	210	540	9.8	170	3.6	<0.53	550	9900	<0.83	<1.0	1900	<0.39
SG-9 (4-18-13)	7.9	<0.82	<0.50	0.52	1.9	<0.80	*	6	0.6	<0.83	<1.0	5.6	<0.39
SG-10 (4-18-13)	6.4	<0.82	<0.50	<0.52	<0.80	<0.80	0.74	7.4	3.5	<0.83	<1.0	0.55 J	<0.39
SG-11 (4-18-13)	5.0	<0.82	<0.50	0.52	0.4 J	<0.80	0.87	7.4	4.5	<0.83	<1.0	1.3	<0.39
SG 12 (4-18-13)	5.0	<0.82	<0.50	0.7	0.44 J	<0.80	<0.53	220	93	<0.83	<1.0	0.82	<0.39
SG-15 (4-18-13)	5.0	<0.82	<0.50	<0.52	0.97	<0.80	<0.53	290000	5.9	<0.83	<1.0	8	<0.39
SG-16 (7-1-13)	5.0	<0.82	<0.50	<0.52	<0.80	<0.80	0.39	38000	5.8	<0.83	<1.0	18	<0.39
SG-16 (7-1-13) Terracon	5.0	<0.82	<0.50	<0.52	<0.80	<0.80	2.5	95000	8	<0.83	<1.0	12	<0.39
SG-20 (7-1-13)	5.0	<0.82	4.4	0.41 J	17	<0.80	3.4	9000	7	<0.83	<1.0	33	<0.39
SG-20 (7-1-13) Terracon	5.0	<0.82	0.71	0.50 J	36	<0.80	0.5 J	6400	7.2	<0.83	<1.0	90	0.5 J
SG 8 (4-18-13)	NA	<0.82	<0.50	<0.52	<0.80	<0.80	1.1	7.5	1.3	<0.83	<1.0	1.5	<0.39
SG 8 (7-1-13)	NA	<0.82	<0.50	<0.52	0.6	<0.80	0.4 J	3.0	<0.83	<0.83	<1.0	1.8	<0.39
AB-1 (7-1-13)	NA	<0.82	<0.50	<0.52	<0.80	<0.80	0.6	14	<0.83	<0.83	<1.0	<0.82	<0.39
AB-1 (7-1-13) Terracon	NA	<0.82	<0.50	<0.52	<0.80	<0.80	<0.53	2.1	<0.83	<0.83	<1.0	<0.82	<0.39
Max. Detected Conc. (ug/L)		700	880	9.8	7200	160	8.5	2.5E+07	9900	<0.83	<1.0	3700	340
VHP Tier III Screening Level (ug/M3) Table 2.14 - Construction Worker		1.7E-03	8.13E-03	8.39E-04	NE	1.86E+05	8.0 E+03	8.11E+05	3.50E+07	7.89E-03	Not Found	7.77E+03	2.44 +03
VHP Tier III Screening Level (ug/M3) Table 2.12 - Commercial		253	2920	15.7	NE	676	8760	584	70000	5	7.06	292	324

Notes:
Analyses via EPA Method TO-15
VOC reported in ug/M3
NE - No Established or No Proxy Value
NP - No Proxy Value
NA - Not Applicable
J - Estimated Concentration < MDL
Shaded Values Exceed Tier III Construction Worker Table 2.14
Bold Face values exceed Tier III Commercial, Table 2.12
Samples SG and AB are Background Ambient Air