Tax Map No.: 3223000
EPA Site ID #: VAD003175072

ENVIRONMENTAL COVENANT

This **ENVIRONMENTAL COVENANT** is made and entered into as of the 28th day of September, 2012, by **BAE SYSTEMS NORFOLK SHIP REPAIR**, whose address is 750 West Berkley Avenue, Norfolk, Virginia 23523 (hereinafter referred to as the "Owner"), to be indexed as Grantor and Grantee. The **UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION III** whose address is 1650 Arch Street, Philadelphia, PA 19103 (hereinafter referred to as the "Agency") will be the approving agency.

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.

1. **Property Affected.** The property affected by this environmental covenant is located at 750 West Berkley Avenue, Norfolk, Virginia 23523 (hereinafter referred to as the "Property") and is further described as:

All that certain lot, piece or parcel of land together with improvements and appurtenances lying thereon located on the eastern side of the Southern Branch of the Elizabeth River and along the western side of Interstate 464 in the City of Norfolk, Virginia being designated as Parcel 1, Parcel 2, Parcel 3 and Parcel 4, as shown on that certain plat entitled "SUBDIVISION OF PROPERTY OF NORFOLK SHIPBUILDING & DRYDOCK CORPORATION, A VIRGINIA CORPORATION, (BERKLEY AND ST. HELENA PLANTS), NORFOLK, VIRGINIA dated October 31, 2003 and recorded in the Clerk's office of the Circuit Court of the City of Norfolk, Virginia in Mapbook 55 at pages 145-149, inclusive.

2. **Description of Contamination and Remedy.**

a. The Administrative Record pertaining to the environmental response project on the Property that is described in this covenant is located at:

U.S. Environmental Protection Agency, Region III
Land and Chemicals Division (3LC20)
1650 Arch Street
Philadelphia, PA 19103

This Instrument was prepared by:
Charles E. Land, Esq.
VSB # 17895
Kaufman & Canoles, P.C.
150 West Main Street, Suite 2100
Norfolk, Virginia 23510

b. The contamination and remedy relating to the Property, including descriptions of the Property before remedy implementation; contaminants of concern; pathways of exposure; limits on exposure; location and extent of contamination; and the remedy/corrective action undertaken is described in the Final Decision In Response To Comments (FDRTC) for BAE Systems Norfolk Ship Repair, Norfolk, Virginia, EPA ID. No. VAD003175072, dated September 19, 2011, attached hereto as **Exhibit A**.

c. A brief overview of the present environmental conditions summarized in the portion of the administrative record entitled Statement of Basis (SB), dated August 2, 2011, is as follows:

(i) RCRA metals, Volatile Organic Compounds (VOCs), and Semi-Volatile Compounds (SVOCs) were non-detect or deemed to be within an acceptable concentration range for drinking water in groundwater samples taken as part of the site investigation, thus no remedy for groundwater is needed;

(ii) RCRA metals and VOCs were not detected at concentrations above applicable screening criteria in any soil samples taken as part of the site investigation;

(iii) Several SVOCs were detected in soil samples from three locations at concentrations exceeding EPA Region III Risk-Based Concentrations (RBC) for industrial soil.

(iv) A focused excavation of one of the locations was performed and the source of the soil contamination was identified and removed; the Virginia Department of Environmental Quality issued a Case Closure letter under its Voluntary Remediation Program for the soil cleanup of this location (Virginia Department of Environmental Quality VRP #PC09-5127);

(v) Further soil investigation at the other two locations (identified as SWMU-105 and RA-114 in the SB) demonstrated that although the SVOCs were at concentrations above the RBCs for industrial soil, the contamination was of very limited horizontal and vertical extent; soil borings conducted within 5 feet of the occurrence did not detect SVOCs above EPA residential RBCs.

(vi) The EPA concludes that the level of soil contamination found during site investigations are suitable for industrial use, provided that remedies detailed in the portion of the administrative record entitled Materials Management Plan, dated September 18, 2012, and elsewhere in this Covenant are implemented.

3. **Activity and Use Limitations**.

a. The Property is subject to the following activity and use limitations set forth in the FDRTC, which shall run with the land and become binding on Owner(s) and any successors, assigns, tenants, agents, employees, and other persons under its (their) control, until such time as this covenant may terminate as provided by law:

(i) The Property must not be used for any purpose other than industrial unless it is demonstrated to the Agency that another use will not pose a threat to human health or the environment and the Agency provides prior written approval for such use.

(ii) All earth moving activities, including drilling and construction activities, must be done in accordance with the Agency-approved Materials Management Plan, as amended from time to time.

b. The coordinates for the Property are as follows:

-76.2856814,36.8272232,0 (Point of Beginning)
-76.2856814,36.8272232,0 ← Point of Beginning
-76.2857645,36.8270321,0
-76.2858504,36.8268351,0
-76.2874169,36.8269647,0
-76.2874429,36.8266683,0
-76.2878615,36.8266921,0
-76.2871367,36.8252589,0
-76.2875119,36.8251271,0
-76.2875568,36.8251214,0
-76.2875751,36.8251587,0
-76.2876543,36.8251323,0
-76.2882819,36.8263728,0
-76.2910993,36.8265344,0
-76.2916586,36.8276394,0
-76.2927533,36.8298019,0
-76.2934385,36.8316520,0
-76.2939658,36.8349484,0
-76.2935208,36.8360273,0
-76.2930557,36.8366510,0
-76.2921796,36.8354491,0
-76.2920889,36.8354778,0
-76.2918631,36.8352569,0
-76.2919006,36.8352451,0
-76.2908902,36.8346213,0
-76.2908871,36.8346229,0
-76.2905365,36.8344291,0
-76.2902777,36.8340732,0
-76.2891758,36.8337603,0
-76.2888359,36.8322322,0
-76.2888899,36.8321631,0
-76.2887520,36.8321829,0
-76.2887219,36.8320477,0
-76.2873584,36.8322405,0

-76.2873083,36.8319251,0
-76.2872702,36.8315676,0
-76.2873179,36.8305900,0

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. Compliance with the institutional controls described in Section 3 of this environmental covenant shall be evaluated by the Owner on an annual basis.

b. In addition, thirty (30) days prior to any of the following events, the then current owner of the Property shall submit to the Agency written documentation describing such event: (i) transfer of the Property; (ii) changes in use of the Property from industrial use; or (iii) filing of applications for building permits for the Property and any proposals for any Property work, if such building or proposed Property work will affect the contamination of the Property.

c. Within seven (7) calendar days upon finding of non-compliance with the activity and use limitations described in Section 3 above, the then current owner shall submit to the Agency written documentation describing such non-compliance.

6. **Access by the Agency**. This environmental covenant grants to the Agency and their contractors, employees, agents, and representatives a right of reasonable access to the Property in connection with implementation, inspection, or enforcement of this environmental covenant.

7. **Subordination**.

Reserved.

8. **Recording and Proof & Notification**.

a. Within 90 days after the date of the Agency's approval of this UECA environmental covenant, the Owner shall record, or cause to be recorded, this environmental covenant with the Clerk of the Circuit Court for each locality wherein the Property is located. The Owner shall likewise record, or cause to be recorded, any amendment, assignment, or termination of this UECA environmental covenant with the applicable Clerk(s) of the Circuit Court 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 Owner shall send a file-stamped copy of this environmental covenant, and of any amendment, assignment, or termination, to the Agency within 60 days of recording. Within that time period, the Owner also shall send a file-stamped 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 Owners, any signatories to this covenant not previously mentioned, and any other parties to whom notice is required pursuant to the Uniform Environmental Covenants Act.

9. **Termination or Amendment**. This environmental covenant shall run with the land and be binding on the owner(s) thereof until such time as it is terminated or amended (including assignment) in accordance with UECA. This environmental covenant shall terminate when the Agency determines in writing that the concentration of SVOCs in the soil, at the locations on the Property described in paragraph 2(b)(v) above, no longer exists at concentrations exceeding RBCs for residential soil.

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

ACKNOWLEDGMENTS:

BAE SYSTEMS NORFOLK SHIP REPAIR, INC.

By (signature): R P Tjepkema

Name (printed): R. P. TJEPKEMA

Title: General Manager

Date: 18 Oct 2011

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF Chesapeake

On this 19 day of October, 2012, before me, the undersigned officer, personally appeared Russel T Jepkema, the General Manager of BAE Systems Norfolk Ship Repair, Inc. who acknowledged himself/herself to be the person whose name is subscribed to this environmental covenant, and acknowledged that s/he freely executed the same for the purposes therein contained.
In witness whereof, I hereunto set my hand and official seal.

My commission expires: 3-31-13
Registration #: 7249384

Notary Public

APPROVED by the U. S. Environmental Protection Agency, Region III

By (signature): _____

Name (printed): Abraham Ferdas

Title: Director, Land and Chemicals Division

Date: _____

SEEN AND RECEIVED by the Virginia Department of Environmental Quality

By (signature): _____

Name (printed): _____

Title: _____

Date: _____

EXHIBIT A

Final Decision and Response to Comments

and

Statement of Basis

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

FINAL DECISION AND RESPONSE TO COMMENTS

BAE Systems Norfolk Ship Repair
Norfolk, Virginia
EPA ID NO. VAD003175072

I. FINAL DECISION - Corrective Action Complete with Controls

The United States Environmental Protection Agency ("EPA") is issuing this Final Decision and Response to Comments ("Final Decision") under the authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act ("RCRA") of 1976, and the Hazardous and Solid Waste Amendments ("HSWA") of 1984, 42 U.S.C. Sections 6901 to 6992k, regarding the BAE Systems Norfolk Ship Repair facility located at 750 West Berkley Avenue, Norfolk, Virginia (the "Facility").

On August 2, 2011, EPA issued a Statement of Basis (SB) which described the information gathered during the environmental investigation at the Facility, and described the Proposed Final Remedy for the Facility. The SB is hereby incorporated into this Final Decision by reference and made apart hereof as Attachment A. In the SB, EPA's proposed remedy for the Facility consists of the following components: restricting the property to industrial use thru compliance with and maintenance of institutional controls; and development and implementation of a Materials Management Plan. EPA's proposed remedy for the Facility groundwater is no further action.

II. PUBLIC COMMENT PERIOD

In the August 2, 2011 SB, EPA proposed a determination of "Corrective Action Complete with Controls." Consistent with the public participation provisions of RCRA, EPA requested comments from the public on the proposed remedy as described in the SB. The commencement of a thirty (30)-day public comment period was announced in Virginia-Pilot on August 2, 2011 and on the EPA Region III website. The public comment period ended on September 1, 2011.

III. RESPONSE TO COMMENTS

EPA received no comments on its proposal. Consequently, EPA's final determination is unchanged from the proposal.

IV. FINAL REMEDY

The Final Remedy, which is explained in detail in the SB, is corrective action complete with controls. EPA's Final Remedy restricts the property to industrial use thru compliance with and maintenance of institutional controls; and development and implementation of a Materials Management Plan. This determination is consistent with EPA's February 2003 *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities* (reference 68 FR 8757).

V. DECLARATION

Based on the Administrative Record compiled for the Corrective Action at the BAE Systems Norfolk Ship Repair facility, EPA has determined that the Final Remedy selected in this Final Decision and Response to Comments is protective of human health and the environment.

Abraham Ferdas, Director
Land & Chemicals Division
U.S EPA Region III

9/19/11
Date

Attachment A – August 2, 2011 Statement of Basis

STATEMENT OF BASIS

BAE SYSTEMS NORFOLK SHIP REPAIR

NORFOLK, VIRGINIA

EPA ID NO. VAD003175072

August 2011

TABLE OF CONTENTS

I. INTRODUCTION 1
II. FACILITY DESCRIPTION AND BACKGROUND 1
III. SUMMARY OF ENVIRONMENTAL HISTORY 2
IV. PROPOSED REMEDY 4
V. EVALUATION OF EPA'S PROPOSED DECISION 6
VI. PUBLIC PARTICIPATION 7

List of Figures:

Figure I - Sample Location Map

I. INTRODUCTION

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy for BAE Systems Norfolk Ship Repair (BAE NSR) located at 750 West Berkley Avenue, Norfolk, Virginia 23523 (hereinafter referred to as the Facility) EPA ID No. VAD003175072. EPA's proposed remedy for the Facility consists of the following components: restricting the property to industrial use thru compliance with and maintenance of institutional controls; and development and implementation of a Materials Management Plan. EPA's proposed remedy for the Facility groundwater is no further action.

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

On September 29, 2000, Virginia received authorization from EPA to enforce the Corrective Action Program under Section 3006 of RCRA. However, EPA retained the lead for this Facility under a work share agreement with the Virginia Department of Environmental Quality (VDEQ). EPA prepared this SB in cooperation with VDEQ.

EPA is providing a 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 (FDRTC) after the public comment period has ended.

Information on the Corrective Action program as well as a fact sheet for the Facility can be found by navigating http://www.epa.gov/reg3wcmd/correctiveaction.htm.

II. FACILITY DESCRIPTION AND BACKGROUND

BAE NSR is located on the eastern side of the Elizabeth River in Norfolk, Virginia. The Facility is approximately 110 acres in size and is bound on the west and southwest by the Elizabeth River and on the north, east, and southeast by parking areas, City-owned scrap yards, and Interstate 264, respectively. Surrounding BAE NSR to the east are commercial and industrial areas.

BAE NSR repairs military and private commercial ships and has been in operation since 1915. The Facility was built on native, dredged, and other fill material. The shipyard accommodates two dry docks and five piers. A variety of activities are present at the shipyard including ship repair, machine shops, offices, a waste water treatment plant, an oil recovery and treatment facility, grit blasting, painting, dry docks, metal works, hazardous material use and storage, scrap metal containers, fire protection services, and other shipyard related services.

III. SUMMARY OF ENVIRONMENTAL HISTORY

BAE NSR accepted EPA's invitation to participate in the RCRA Corrective Action Facility Lead program on September 20, 2005. In December 2005, BAE NSR submitted a RCRA Facility Investigation (RFI) Work Plan (December 2005) to EPA that documented the known current conditions at the Facility and the nine Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). In addition, the RFI Work Plan presented the strategic approach for implementing the RCRA Corrective Action Facility Lead Program. The RFI Work Plan included a Release Assessment (RA) Work Plan; a Community Relations Plan (CRP); Sampling and Analysis Plan (SAP); Quality Assurance Project Plan (QAPP); and Health & Safety Plan (HASP).

Upon EPA's approval of the RA Work Plan, BAE NSR conducted an investigation of nine SWMUs/AOCs to evaluate whether or not a release had occurred as a result of the operation of the units. The Release Assessment investigation consisted of the collection and analysis of soil and groundwater samples from suspected release locations. Twenty-three soil samples were collected and analyzed for total RCRA metals, pH, moisture, Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), and Total Organic Carbon (TOC). The soil sample results were screened against EPA Region III's Risk-Based Concentration (RBC) Table for residential and industrial soil ingestion.

Groundwater samples were collected from 15 monitoring wells (13 new wells and two existing wells) and analyzed for RCRA metals, pH, SVOCs, and VOCs. See Figure I for well locations. Groundwater results were compared to Virginia Groundwater Protection Standards (GWPS) and/or 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 where applicable. If there was neither a GWPS nor an MCL for a constituent, then EPA Region III RBC tap water screening value for hazardous constituents was used for screening. For carcinogens, the EPA Region III RBC screening values are based on a cancer risk of 1×10^{-6}, meaning that an exposed individual would have an estimated upperbound excess probability of developing cancer of one in one million.

Initial Release Assessment findings indicated that VOCs and RCRA metals were not detected above applicable screening criteria in any soil samples. Polynuclear aromatic hydrocarbons (PAHs), which are SVOCs, were detected in the soil at three locations at a depth of 3 to 6 feet at concentrations in excess of EPA Region III RBCs for industrial soil. The three locations consisted of SWMU-105 and two locations, RA-111, and RA-114, identified in the RA Work Plan. The Initial Release Assessment soil findings lead to further investigation and at RA-111 interim corrective action measures were performed.

Groundwater samples taken during the Initial Release Assessment were non-detect for RCRA metals and VOCs. One location, SWMU-102, exhibited several

SVOCs at concentrations slightly above applicable screening criteria for groundwater, leading to further investigation.

Based on the analytical results of the Initial Release Assessment, EPA requested additional investigation. Three locations, SWMW-102, RA-111, and RA-114, were identified as requiring additional groundwater sampling. Three locations, SWMW-105, RA-111, and RA-114, were identified as requiring additional soil sampling to delineate the extent of impact. These additional investigative activities were completed in July 2008 and May-June 2009. In addition, a limited excavation was performed as an Interim Corrective Measure in the area of RA-111 in June 2009. During the June 2009 excavation at RA-111, an oily petroleum substance was uncovered in the subsurface soil. Consequently, a focused excavation was performed as an Interim Corrective Measure. The excavation extended southward and encountered three small-diameter petroleum pipelines surrounded by impacted fill material. The pipelines and soil contamination were removed and VDEQ issued a Case Closure letter under its Voluntary Remediation Program for the area on September 2, 2009.

Further soil investigation at SWMU-105 and RA-114 demonstrated that the initial PAH detections above the EPA Region III RBCs for industrial soil were of localized horizontal and vertical extent. Soil borings conducted within 5 feet of the occurrence did not detect PAHs above EPA residential RBCs. In addition, PAHs were not detected in the groundwater at these locations above MCLs, GWPS or RBCs.

BAE NSR conducted groundwater sampling in July 2008 at SWMW-102, RA-111, and RA-114. The sampling results showed RA-111 was non-detect for PAHs; RA-114 had one PAH detection which was slightly above the EPA Region III RBC tap water value and SWMU-102 had one PAH above the applicable MCL and five PAHs above EPA Region III RBC tap water value.

In May 2009, BAE NSR conducted additional groundwater sampling at SWMW-102 and RA-114. The sampling results showed that RA-111 was non-detect for PAHs and SWMU-102 had three PAHs, benzo[a]anthracene, benzo[b]fluoranthene, and naphthalene, above EPA Region III RBC tap water value.

In 2010, BAE NSR conducted further groundwater sampling at SWMU-102 to confirm the previous groundwater results. Groundwater in well SWMU-102 was sampled for SVOCs on October 8, 2010, December 3, 2010, and January 28, 2011. With the exception of naphthalene, all PAHs were non-detect in the January 28, 2011 sampling event. Naphthalene was detected at 0.58 parts per billion (ppb), which is above the screening value of 0.14 ppb.

EPA's risk reduction goal is to reduce the threat from carcinogenic contaminants such that, for any medium, the excess cumulative risk of cancer to an individual exposed over a lifetime generally falls within a range from one in one-million to one in ten-thousand. EPA utilizes a threshold risk of one in one million for its initial evaluation of site data. While EPA's preference is to select remedies that are at the more protective

end of the risk range, given the diversity of the corrective action universe and the emphasis on consideration of site-specific conditions such as exposure, uncertainty, and technical limitations, EPA expects that other risk reduction goals may be appropriate at many corrective action facilities.

For BAE NSR, the detected concentration of naphthalene at 0.58 ppb represents a less than a one in one hundred thousand cancer risk, and therefore is already within EPA's acceptable cancer risk range for groundwater used as drinking water. Groundwater underlying the Facility currently is not used for potable purposes. The north end of BAE NSR where SWMU-102 is located was filled in with dredge materials. In addition, human exposure to groundwater is restricted by a Norfolk, Virginia ordinance that prohibits the use of groundwater for potable purposes.

EPA concludes that the level of soil contamination found during site investigations are suitable for industrial use, provided that the following proposed remedies are implemented. The naphthalene concentrations found in groundwater are already within an acceptable risk range for drinking water, and no remedy for groundwater is needed.

IV. PROPOSED REMEDY

EPA's proposed remedy for the Facility consists of the following components:

1. Development and Implementation of a Materials Management Plan

EPA's proposed remedy requires the development and implementation of a Materials Management Plan to be approved by EPA before any earth moving activities, including construction and drilling, can be done at the Facility. The Materials Management Plan will detail how all excavated soils will be handled and disposed.

Soil remediation cleanup standards will be determined by EPA using EPA Region III's Risk-Based Concentrations (RBCs) for industrial screening levels. In addition, all soils that are stockpiled will be sampled using the Toxicity Characteristic Leaching Procedure (TCLP) and will be disposed off-site. In addition, the Materials Management Plan will include soil stabilization requirements to minimize contact between storm water runoff and the parcel soils. Soil stabilization measures may include the construction of berms to prevent storm water from flowing onto certain areas as well as the construction of sumps with pumps to remove ponded water from low lying areas.

The Materials Management Plan will include a Health and Safety Plan, Sampling and Analysis Plan and Quality Assurance Project Plan. The Health and Safety Plan will among other things, identify the locations at the Facility where contaminants remain in soils; detail how future on-site workers and contractors will be notified about such locations and about the presence of the contaminated soil.

2. Compliance with and Maintenance of Institutional Controls

Because contamination will remain in the soils at the Facility, EPA's proposed final remedy includes land use restrictions to prevent human exposure to the remaining contaminants. The land use restrictions will be implemented through ICs. ICs are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use and inform subsequent purchasers of the environmental conditions at the Facility and of EPA's final remedy for the Facility.

EPA is proposing the following land use restrictions be implemented through institutional controls at the Facility:

i. a restriction that Facility property not be used for any purpose other than industrial unless it is demonstrated to EPA that another use will not pose a threat to human health or the environment and EPA provides prior written approval for such use;
ii. all earth moving activities, including drilling and construction activities, be done in accordance with the EPA–approved Materials Management Plan.

EPA also proposes to require BAE NSR to provide a coordinate survey as well as a metes and bounds survey, of the Facility boundary. Mapping the extent of the land use restrictions will allow for presentation in a publicly accessible mapping program such as Google Earth or Google Maps. In addition, compliance with the institutional controls shall be evaluated by the Facility on an annual basis. A report documenting the findings of the evaluation shall be provided to EPA and VDEQ.

3. No Further Action for Groundwater

PAH concentrations in Facility groundwater since the Initial Release Assessment in 2007 have generally shown a decreasing trend. As of the January 2011 sampling event, naphthalene was the only contaminant detected in Facility groundwater. The sampling results from the January 2011 sampling event show that the concentrations of naphthalene in Facility groundwater are within an acceptable risk range for drinking water. Therefore, EPA is requiring no further action for Facility groundwater.

4. Implementation

EPA anticipates that the final remedy will be implemented using available legal authorities such as an order, permit and/or an environmental covenant, to be recorded with the Recorder of Deeds Office of the Circuit Court of Norfolk 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 the Facility fails to meet its obligations under the enforceable mechanism proposed, EPA, in its sole

discretion, deems that additional ICs are necessary to protect human health or the environment, EPA has the authority to require such institutional controls.

V. EVALUATION OF EPA'S PROPOSED DECISION

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 remedy threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria to determine which proposed remedy alternative provides the best relative combination of attributes.

A. Threshold Criteria

1. **Protect Human Health and the Environment** - The proposed remedy is protective of human health and the environment. Sampling results show that Facility groundwater is within an acceptable risk range for drinking water. With respect to Facility soils, the primary human health and environmental threats posed by the contaminated soil at the Facility were related to direct contact with those soils. Removal of contaminated soil in the summer of 2009 from area RA-111 resulted in protection of human health and the environment. Soil at two other locations, SWMU-105 and RA-114, are contaminated, however, the contaminated soil is below the surface at a depth ranging from 3 to 6 feet and is localized in horizontal and vertical extent. While SWMU-105 and RA-114 are known areas of contamination, the proposed remedy will restrict the use of the entire Facility property to industrial use. The proposed industrial use restriction for the entire Facility is due to the past industrial use of the property and the dredge fill that makes up a portion of the facility. The urban-industrial nature of the site dates back to 1915, and over time the Facility was built on native, dredged and other fill material of unknown origin.

2. **Achieve Media Cleanup Objectives** - The Facility has achieved the EPA's RBCs for industrial soil with the exception of two locations, SWMU-105 and RA-114. EPA's proposed final remedy requires the implementation and maintenance of institutional controls to ensure that Facility soils are used for industrial purposes. For groundwater, the Facility meets EPA's acceptable cancer risk range for groundwater used as drinking water. Both of these standards meet EPA risk guidelines for human health and the environment at the Facility.

3. **Remediating the Source of Releases** - In all remedy decisions, EPA seeks to eliminate or reduce further releases of hazardous wastes or hazardous constituents that may pose a threat to human health and the environment. The Facility's soil removal from RA-111 eliminated that area as a source of contamination. Contaminated soils at SWMU-105 and RA-114 are localized and not a source of release to groundwater.

B. Balancing/Evaluation Criteria

1. **Long-Term Effectiveness** - The proposed remedy will be protective of human health and the environment over time by controlling exposure to the hazardous constituents remaining in soils and groundwater. EPA's proposed remedy requires the development and implementation of a Materials Management Plan which will provide soil management requirements to prevent exposure to contaminants remaining in the soil. In addition, the proposed remedy requires the compliance with and maintenance of land use restrictions at the Facility in order to prevent human exposure to soil contaminants remaining in place.

2. **Reduction of Toxicity, Mobility, or Volume of the Hazardous Constituents** - The reduction of toxicity, mobility and volume of hazardous constituents at the Facility has already been achieved by the excavation of contaminated soils.

3. **Short-Term Effectiveness** - EPA's proposed final remedy does not involve any additional activities, such as construction or excavation, that would pose short-term risks workers, residents, and the environment.

4. **Implementability** - EPA's proposed remedy is readily implementable. BAE NSR will have to prepare and submit for EPA approval a Materials Management Plan. In addition, EPA proposes to implement the institutional controls through an enforceable mechanism such as an order, permit 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. Therefore, EPA does not anticipate any regulatory constraints in implementing its proposed remedy.

5. **Cost** - The capital costs associated with soil excavation have already been incurred and the remaining costs are minimal.

6. **Community Acceptance** - EPA will evaluate Community acceptance of the proposed remedy during the public comment period and will be described in the Final Decision and Response to Comments.

7. **State/Support Agency Acceptance** - EPA will evaluate State acceptance based on comments received from VDEQ during the public comment period and will describe the State's position in the Final Decision and Response to Comments.

VI. PUBLIC PARTICIPATION

Interested persons are invited to comment on the EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date the notice is published in a local newspaper. Comments may be submitted by mail, fax, e-mail, or phone to Mr. Michael Jacobi at the address listed below.

A public meeting will be held upon request. Requests for a public meeting should be made to Mr. Jacobi at the address listed below. A meeting will not be scheduled unless one is requested.

The Administrative Record contains all the information considered by the EPA for the proposed decision at this Facility. To receive a copy of the Administrative Record, contact Mr. Jacobi at the address below:

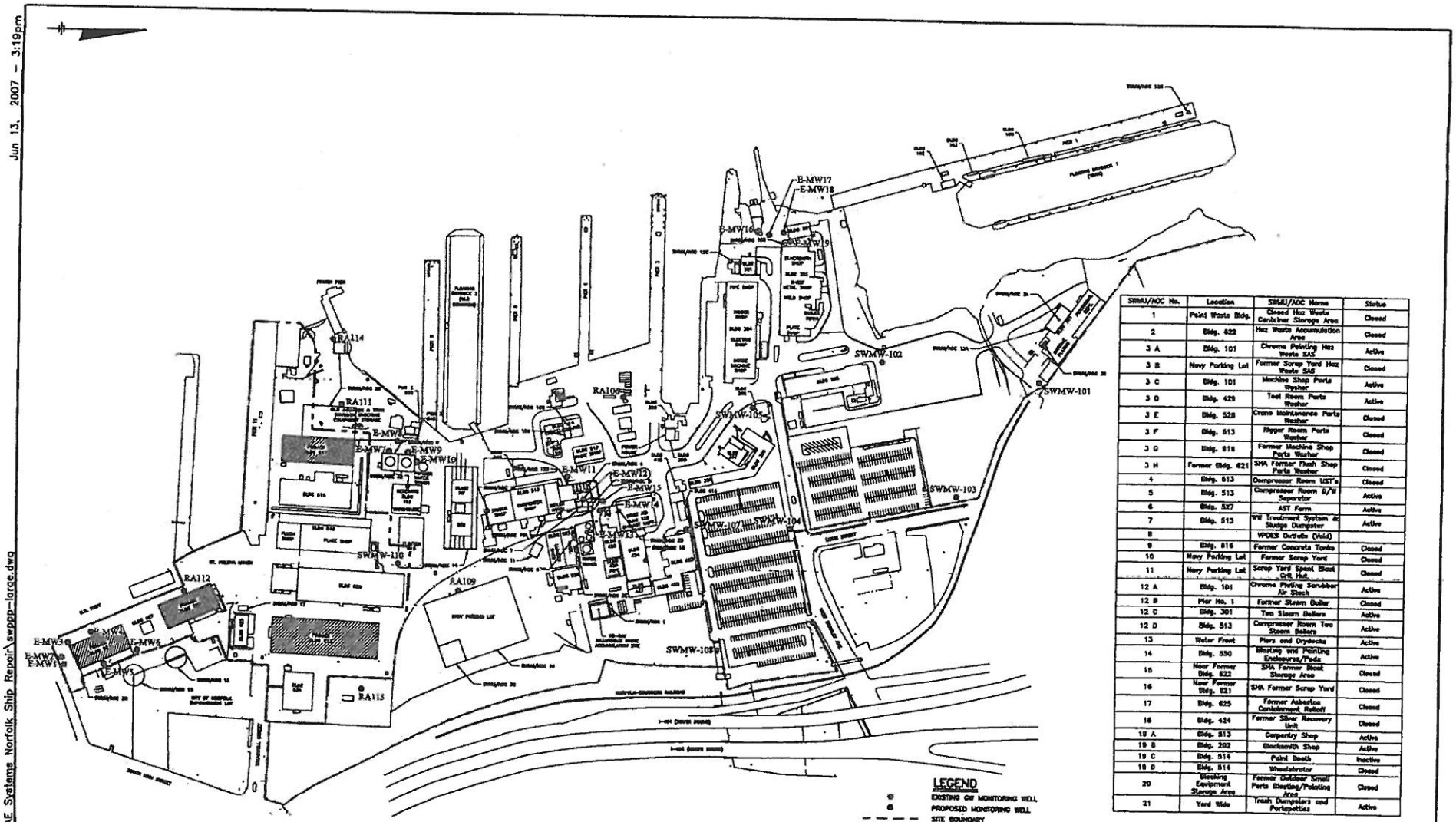
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103
Land and Chemicals Division (3LC20)
Attn: Michael Jacobi

Phone: (215) 814-3435
Fax: (215) 814-3113
Email: jacobi.mike@epa.gov

Following the 30-day public comment period, EPA will evaluate the public's comments and prepare a Final Decision and Response to Comments (FDRTC) that identifies the final selected remedy. The FDRTC will also address all significant written comments and any significant oral comments generated at the public meeting, if held. The FDRTC will be made available to the public. If, on the basis of such comments or other relevant information, significant changes are proposed to the corrective measures identified by EPA in this Statement of Basis, EPA may seek additional public comments.

Date: 8/2/11

Abraham Ferdas, Director
Land and Chemicals Division
US EPA, Region III



SWMU/AOC No.	Location	SWMU/AOC Name	Status
1	Paint Waste Bldg.	Closed Haz Waste Container Storage Area	Closed
2	Bldg. 622	Haz Waste Accumulation Area	Closed
3 A	Bldg. 101	Chrome Painting Haz Waste SAS	Active
3 B	Navy Parking Lot	Former Scrap Yard Haz Waste SAS	Closed
3 C	Bldg. 101	Machine Shop Parts Washer	Active
3 D	Bldg. 429	Tool Room Parts Washer	Active
3 E	Bldg. 528	Crane Maintenance Parts Washer	Closed
3 F	Bldg. 513	Rigger Room Parts Washer	Closed
3 G	Bldg. 818	Former Machine Shop Parts Washer	Closed
3 H	Former Bldg. 821	SHA Former Flash Shop Parts Washer	Closed
4	Bldg. 513	Compressor Room UST's	Closed
5	Bldg. 513	Compressor Room O/W Separator	Active
6	Bldg. 527	AST Farm	Active
7	Bldg. 513	WW Treatment System & Sludge Dumpster	Active
8		VPDES Outfalls (Valid)	
9	Bldg. 816	Former Concrete Tanks	Closed
10	Navy Parking Lot	Former Scrap Yard	Closed
11	Navy Parking Lot	Scrap Yard Spent Blast Grit Hot	Closed
12 A	Bldg. 101	Chrome Plating Scrubber Air Stack	Active
12 B	Pier No. 1	Former Steam Boiler	Closed
12 C	Bldg. 301	Two Steam Boilers	Active
12 D	Bldg. 513	Compressor Room Two Steam Boilers	Active
13	Water Front	Piers and Drydocks	Active
14	Bldg. 550	Blasting and Painting Enclosures/Pads	Active
15	Near Former Bldg. 622	SHA Former Blast Storage Area	Closed
16	Near Former Bldg. 821	SHA Former Scrap Yard	Closed
17	Bldg. 625	Former Asbestos Containment Rolloff	Closed
18	Bldg. 424	Former Silver Recovery Unit	Closed
19 A	Bldg. 513	Carpentry Shop	Active
19 B	Bldg. 202	Blacksmith Shop	Active
19 C	Bldg. 514	Paint Booth	Inactive
19 D	Bldg. 514	Wheelabrator	Closed
20	Blasting Equipment Storage Area	Former Outdoor Small Parts Blasting/Painting Area	Closed
21	Yard Wide	Trash Dumpsters and Porkpotties	Active

LEGEND

- EXISTING GW MONITORING WELL
- PROPOSED MONITORING WELL
- SITE BOUNDARY
- ST. HELENA ANNEX BOUNDARY
- SWMW — SITE WIDE MONITORING WELL
- RA — RELEASE ASSESSMENT MONITORING WELL
- E-MW — EXISTING MONITORING WELL

IF IN A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. DISCREPANCIES IN THE SPECIFIED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IN CHARGE OF _____
DESIGNED BY _____ CHECKED BY _____
DRAWN BY _____

1"=300' 150 0 150 300

NO.	DATE	REVISION	INIT.

CH2M HILL ENGINEERS INC.

BAE SYSTEMS NORFOLK SHIP REPAIR
RCRA FACILITY LEAD PROGRAM
EPA ID NO. VAD003175072
NORFOLK, VIRGINIA 23523

SAMPLE LOCATIONS
RCRA Facility Investigation & Release Assessment

FILE NO. 12674.38119-003
DATE JUNE 2007

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Jun 13, 2007 - 3:19pm