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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

IN THE MATTER OF:

SPARROWS POINT FACILITY,
BALTIMORE, MARYLAND

Docket Number:

CERC/RCRA-03-2014-0279PP

SETTLEMENT AGREEMENT AND COVENANT NOT TO SUE SPARROWS POINT TERMINAL, LLC

UNDER THE AUTHORITY OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980, 42 U.S.C. §§ 9601 ET SEQ., AS AMENDED,

AND

THE SOLID WASTE DISPOSAL ACT, 42 U.S.C. §§6901, ET SEQ., AS AMENDED

I hereby certify that the within is a true and correct copy of the original Settlement Agreement filed in this matter.

Attorney for
U.S. EPA Region III

I. INTRODUCTION

1. This Settlement Agreement and Covenant Not to Sue (Settlement Agreement) is made and entered into by and between the United States on behalf of the Environmental Protection Agency (EPA); and Sparrows Point Terminal, LLC (SPT) (collectively, the Parties).

2. This Settlement Agreement concerns the "Sparrows Point Facility," with an address of 1430 Sparrows Point Boulevard and 5111 North Point Boulevard, Sparrows Point, Baltimore County, Maryland and consisting of a 3,100-acre peninsula generally bounded by the Back River, Bear Creek, and the Northwest Branch of the Patapsco River, hereinafter the "Property," described more fully in the legal description attached as Exhibit 1.

3. Sparrows Point LLC (SPLLC) currently owns and operates the Property.

4. SPT is a limited liability company with its principal place of business located at 5 Revere Drive, Suite 320, Northbrook, Illinois.

5. SPT has represented that it has entered into a Purchase and Sale Agreement dated December 14, 2013 to purchase the Property from SPLLC (PSA), and to redevelop the Property into a transportation, manufacturing, and logistics industrial campus. The PSA was subsequently amended on January 17, 2014, April 2, 2014, June 9, 2014, August 16, 2014, and Sept. 2, 2014. The transaction contemplated in the PSA is currently scheduled to close in September 2014.

6. In 1997 EPA, the Maryland Department of the Environment (MDE), and then Property owner Bethlehem Steel Corporation (BSC), entered into a Consent Decree in the U.S. District Court for the District of Maryland (District Court), Civil Action Nos. JFM-97-558 and JFM-97-559, under among other federal authorities Section 3008(h) of the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6928(h), and various provisions of the Environmental Article of the Annotated Code of Maryland (BSC Consent Decree). Pursuant to the BSC Consent Decree,

BSC was required to, among other things, perform Interim Measures (IMs), a Site Wide Investigation (SWI), and a Corrective Measures Study (CMS). BSC and subsequent owners of the Property have completed much of the SWI for the onshore portions of the Property, and implemented certain EPA-required IMs, including groundwater extraction at the former Rod and Wire Mill and installation and operation of groundwater extraction treatment Cells 1 - 6 in the Coke Oven Area as shown in Exhibit 2.

7. EPA and MDE have been overseeing investigations and interim remedial measures to address contamination at the Site since at least 1987 and have received numerous reports regarding the scope of Waste Material at the Site, including but not limited to:

- Description of Current Conditions (Rust 1998)
- Site-Wide Investigation Work Plan – Groundwater Study (CH2M Hill 2000)
- Site-Wide Investigation Groundwater Study Report, July 2001 (CH2M Hill 2001)
- Site-Wide Investigation Release Site Characterization Study, June 2002 (CH2M Hill 2002)
- Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater From the Special Study Areas (URS 2005), revised 2007
- CA725 Facility Investigation and Human Health Risk Evaluation (HHRE) Findings, ISG Sparrows Point, June 2005 (URS 2005)
- Ecological Risk Assessment Strategy Document; ISG Sparrows Point Facility (URS 2006)
- Final Ecological Risk Assessment Work Plan for On-Site Areas (URS 2007)
- Screening Level Ecological Risk Assessment For On-Site Areas Final (April 2009, URS)
- Final Baseline Ecological Risk Assessment for On-Site Areas (BERA) Report (URS 2011).

8. On May 20, 2014, SPT submitted a Phase I Assessment of the Site to MDE and EPA.

9. On May 22, 2014, SPT submitted a draft Site Conceptual Cleanup Plan (SCCP), copy

attached as Exhibit 3, regarding the Property to the MDE and the EPA for review. EPA and MDE reviewed the SCCP and in comments dated June 26, 2014, copy attached as Exhibit 4, agreed in concept with certain aspects of the SCCP, including but not limited to: a) the post-closure care obligations for the landfills; b) the general schedule presented in the SCCP; c) the materials proposed for disposal within the Greys Landfill; and d) LNAPL recovery goals. EPA's agreement in concept to these aspects of the SCCP is not binding approval of the SCCP or any portion thereof, and the Parties recognize that corrective measures will be selected by EPA in one or more Final Decision and Response to Comments (FDRTC), and implemented by SPT, in accordance with the terms of this Settlement Agreement.

10. On July 28, 2014, the federal District Court for Maryland entered an amendment to the BSC Consent Decree which added SPLLC as a Respondent, acknowledged that certain work required under the BSC Consent Decree had been completed, and clarified certain other provisions. As a result, SPLLC is currently responsible for carrying out the terms of the Consent Decree related to the Site.

11. On September 12, 2014, SPT and MDE entered into an Administrative Consent Order pursuant to authority vested in the Secretary of MDE under applicable provisions of Sections 1-301, 7-201 through 7-268 and 9-301 et seq. of the Environment Article of the Annotated Code of Maryland, and the Code of Maryland Regulations, 26.14.01 and .02 (ACO), copy attached as Exhibit 5. The ACO requires SPT to develop and implement remedial measures to address, treat, control, prevent or mitigate the presence and/or releases of contaminants of concern at the Property, pursuant to MDE-approved work plans. The ACO requires SPT to establish and maintain financial assurance for completion of the work in accordance with Section XIII Financial Assurance of the ACO.

12. It is the intent of the Parties that SPT's work under the ACO, in conjunction with the

work SPLLC undertakes to fulfill its obligations under the BSC Consent Decree, and the Work and other requirements set forth in this Settlement Agreement, will address certain Corrective Action requirements at the Site under the Solid Waste Disposal Act, commonly referred to as the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984 (RCRA), 42 U.S.C. §§ 6901-6992k.

13. SPT asserts that it is a bona fide prospective purchaser (BFPP) as defined by Section 101(40) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9601(40), that it intends to maintain the status of a BFPP during its ownership of the Property, and thus that it qualifies for the protection from liability under CERCLA set forth in Section 107(r)(1) of CERCLA, 42 U.S.C. § 9607(r)(1), with respect to the Property. In view, however, of the complex nature and significant extent of the Work to be performed in connection with Response Actions at the Property, and the risk of claims under CERCLA being asserted against SPT notwithstanding Section 107(r)(1) as a consequence of SPT's activities at the Property pursuant to this Settlement Agreement, one of the purposes of this Settlement Agreement is to resolve, subject to the reservations and limitations contained in Section XIII (Reservations of Rights), any potential liability of SPT under CERCLA, and RCRA for the Existing Contamination as defined by Paragraph 20.i below.

II. AUTHORITY AND GENERAL PROVISIONS

14. This Settlement Agreement is issued pursuant to the authority vested in the President of the United States by CERCLA, 42 U.S.C. §§ 9601 - 9675, and RCRA, 42 U.S.C. §§ 6901-6992k, and the authority of the Attorney General of the United States to compromise and settle claims of the United States.

15. The Parties agree to undertake all actions required of each of them by the terms and

conditions of this Settlement Agreement. The purpose of this Settlement Agreement is to settle and resolve, subject only to reservations and limitations contained in Sections XI (Certifications), XII (Covenant Not to Sue), XIII (Reservation of Rights), and XIV (SPT's Covenant Not to Sue), the potential liability of SPT under CERCLA and RCRA for Existing Contamination at the Site which would otherwise result from SPT becoming the owner and/or operator of the Property.

16. The Parties agree that SPT's entry into this Settlement Agreement, and the actions undertaken by SPT in accordance with the Settlement Agreement, do not constitute an admission of any liability by SPT.

17. The resolution of this potential liability, in exchange for SPT's performance of the Work and payments to the United States, is in the public interest.

18. SPT and EPA recognize that this Settlement Agreement has been negotiated in good faith. SPT agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the jurisdictional or factual basis or validity of this Settlement Agreement or its terms.

III. PARTIES BOUND

19. This Settlement Agreement applies to and is binding upon the United States and shall apply to and be binding upon SPT and upon SPT's authorized officers, managers and employees. Any change in ownership or corporate status of SPT shall not alter its independent responsibilities under this Settlement Agreement. Each signatory of a Party to this Settlement Agreement represents that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to legally bind such Party.

IV. DEFINITIONS

20. Unless otherwise expressly provided herein, terms used in this Settlement

Agreement which are defined in CERCLA and RCRA or in regulations promulgated under CERCLA and RCRA shall have the meaning assigned to them in CERCLA and RCRA or in such regulations, including any amendments thereto. Whenever terms listed below are used in this Settlement Agreement, the following definitions shall apply:

a. The "Administrative Consent Order" or ACO shall mean the agreement dated September 12, 2014 entered into by MDE and SPT pursuant to authority vested in the Secretary of MDE under applicable provisions of Sections 1-301, 7-201 through 7-268 and 9-301 et seq. of the Environment Article of the Annotated Code of Maryland, and the Code of Maryland Regulations, 26.14.01 and .02 attached as Exhibit 5.

b. "BSC Consent Decree" shall mean the Consent Decree entered by the United States District Court for the District of Maryland on October 8, 1997, Civil Action Nos. 97-CV-558-JFM and 97-CV-559-JFM, as it has been or may be amended from time to time.

c. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9601-9675.

d. "Corrective Measures" shall mean the remedial components of the final remedy to be selected by EPA for the Site in a Final Decision and Response to Comments.

e. "Day" shall mean a calendar day unless expressly stated to be a working day. Any provision of this Settlement Agreement that requires a response or other action that falls on a weekend or holiday day shall be extended to the next working day.

f. "Duly Authorized Representative" shall mean a person set forth or designated in accordance with the procedures set forth in 40 C.F.R. § 270.11(b).

g. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

h. "Effective Date" shall mean the effective date of this Settlement Agreement as provided by Section XXVIII.

i. "Existing Contamination" shall mean:

i. any Waste Material present or existing at, on or under the Property as of the Effective Date;

ii. any Waste Material that migrated from the Property prior to the Effective Date; and

iii. any Waste Material presently at the Site that migrates onto or under or from the Property after the Effective Date.

j. "Institutional Controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by restricting land and/or resource use. Examples of institutional controls include, but are not limited to, easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

k. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the

interest accrues. The rate of interest is subject to change on October 1 of each year.

l. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

m. "MDE" means the Maryland Department of the Environment, its successors, employees, assigns and agents.

n. "Off Shore Study" shall mean the study that a trustee is conducting pursuant to the RG Steel/SPLLC Sale Order, in accordance with the Trust Agreement which became effective on January 24, 2014.

o. "Oversight Costs" shall mean all direct and indirect costs incurred by EPA or the United States after the Effective Date in monitoring and supervising SPT's performance of the Work as it impacts EPA's CERCLA response actions in the offshore area, to determine whether such performance is consistent with the requirements of this Settlement Agreement, including costs incurred in reviewing plans, reports and other documents submitted pursuant to this Settlement Agreement, as well as costs incurred in overseeing implementation of the Work.

p. "Parties" shall mean the United States and Sparrows Point Terminal, LLC, also known as SPT.

q. "Property" shall mean the "Sparrows Point Facility" with an address of 1430 Sparrows Point Boulevard and 5111 North Point Boulevard, Sparrows Point, Baltimore County, Maryland and consisting of a 3,100-acre peninsula generally bounded by the Back River, Bear Creek, and the Northwest Branch of the Patapsco

River, described more fully in the legal description attached as Exhibit 1.

r. "RCRA" shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).

s. "Response Action" shall mean all actions taken by the United States pursuant to RCRA and/or CERCLA in response to the release or threatened release of Waste Material at or in connection with the Site.

t. "RG Steel/SPLLC Sale Order" shall mean the order issued by the bankruptcy court on August 15, 2012 approving the sale of the Property to Environmental Liability Transfer, Commercial Development Company, and Sparrows Point LLC.

u. "Settlement Agreement" or "Agreement" shall mean this Settlement Agreement and Covenant Not to Sue and all exhibits attached to this Agreement (listed in Section XXVI). In the event of conflict between this Agreement and any Exhibit, this Settlement Agreement shall control.

v. "Site" shall mean the Property and all areas to which Waste Materials from the Property have been deposited; stored; disposed of; placed; or otherwise come to be located

w. "Sparrows Point Special Account" shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

x. "State" shall mean the State of Maryland, including all of its departments, agencies and instrumentalities.

y. "Submission" shall mean any plan, proposal, work plan, report or other document, or portion thereof, required to be submitted by SPT pursuant to this

Settlement Agreement.

z. "VCP" shall mean Maryland's Voluntary Cleanup Program set forth in Title 7, subtitle 5 of the Environment Article of the Maryland Code.

aa. "Waste Material(s)" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or Md. Environment Code Ann. § 7-201; (2) any "pollutant" or "contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33), or Md. Environment Code Ann. § 9-101; and/or (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27), or Md. Environment Code Ann. § 7-201.

bb. "Work" shall mean all activities SPT is required to perform under this Settlement Agreement.

V. STATEMENT OF FACTS

21. Maryland Steel built the first furnace on the Property in 1887 and the first iron was cast in 1889. The Bethlehem Steel Corporation (BSC) purchased the Property in 1916 and enlarged it by building mills to produce hot rolled sheet, cold rolled sheet, galvanized sheet tin mill products, and steel plate. During peak production in 1959, BSC operated 12 coke-oven batteries, 10 blast furnaces, and four open-hearth furnaces at the Property.

22. Coke production facilities were first built on the Property in about 1903, expanded through the 1930s and 1950s, and operated until 1991. Coke production facilities at the Property included coke ovens and related facilities, a benzene/litol process area, a coal tar storage area, the Coke Point Landfill which received slag and other wastes from steelmaking operations, and other coking and steelmaking-related operations.

23. In 2001 BSC filed for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy

Code in the Bankruptcy Court for the Southern District of New York.

24. In 2003 the Property was sold to International Steel Group pursuant to a Sale Order (the 2003 BSC/ISG Sale Order) and an asset purchase agreement. After consummation of the asset purchase agreement, the Property was owned by ISG Sparrows Point, LLC (ISG). Under the 2003 BSC/ISG Sale Order, ISG expressly assumed certain of BSC's liabilities under environmental laws.

25. In 2008, after subsequent transactions, ISG was merged into a subsidiary of OAO Severstal known as Severstal Sparrows Holding LLC and was renamed Severstal Sparrows Point, LLC. In 2011, Severstal Sparrows Point, LLC changed its name to RG Steel Sparrows Point, LLC. Throughout that period, steel manufacturing operations continued on the Property.

26. In 2012 RG Steel Sparrows Point, LLC filed a voluntary petition for protection under Chapter 11 of the U.S. Bankruptcy Code in the Bankruptcy Court of Delaware.

27. On August 7, 2012 RG Steel conducted an auction of the Property, as defined and approved by the Bankruptcy Court for the District of Delaware in WP Steel Ventures et al., Case No. 12-1661. Sparrows Point LLC (SPLLC), a Missouri limited liability company, participated in the bid process, and assumed ownership of the Sparrows Point Facility on September 14, 2012. The sale of the Property was governed by an August 7, 2012 asset purchase agreement (the RG Steel/SPLLC APA) and was approved by the bankruptcy court on August 15, 2012 pursuant to a sale order (the RG Steel/SPLLC Sale Order).

28. On September 12, 2012, HRE Sparrows Point, LLC (HRE) purchased the above-grade assets and certain other improvements on the Property.

29. Iron and steelmaking operations on the Property were shut down in May 2012, prior to RG Steel's bankruptcy and have not resumed since that time.

30. On or about February 25, 1997, the United States of America filed a complaint

against BSC regarding the Property under, among other authorities, Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). Around the same time, the State filed a complaint against BSC regarding the Property under the Environment Article of the Annotated Code of Maryland and under RCRA.

31. On October 8, 1997, BSC entered into the BSC Consent Decree with the United States of America and the State pursuant to RCRA, among other federal authorities, and the Environment Article of the Annotated Code of Maryland. The BSC Consent Decree sets forth a summary of conditions at the Property, and requires, *inter alia*, characterization of the impact of releases at and from the Property, in a SWI; completion of a CMS; and (if required by EPA and/or MDE) implementation of IMs to address contamination. EPA and MDE continue to oversee the requirements of the BSC Consent Decree.

32. Based upon a 1994 RCRA Facility Assessment and a 1998 Description of Current Conditions Report, EPA and MDE determined that further investigation and/or action was needed at 81 solid waste management units (SWMUs) and 28 areas of concern at the Property. The BSC Consent Decree organized these SWMUs and Areas of Concern into five (5) designated "Special Study Areas" to be focused upon during RCRA Corrective Action activities: the Tin Mill Canal/Finishing Mills, Greys Landfill, Humphreys Impoundment, Coke Point Landfill, and the Coke Oven Areas. The Coke Point Landfill and the Coke Oven Areas are located on the Coke Point peninsula on the Property.

33. RG Steel Sparrows Point, LLC and several prior owners of the Property have completed much of the SWI for the onshore portions of the Property.

34. Historic SWI studies have found elevated levels of a broad range of contaminants at the Site including: antimony, arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel, tin, zinc, ammonia, benzene, cyanide, ethyl benzene, ethylene glycol, hydrogen cyanide, hydrogen

sulfide, naphthalene, polycyclic aromatic hydrocarbons (PAHs), PCBs, pentachlorophenol, phenols, pyrene, sodium phenolate, styrene, sulfuric acid, toluene, trichloroethylene, xylene, coal tar, other volatile organic carbons (VOCs), oils, lime sludge, waste alkaline rinses, and mill scale. SPT does not admit herein that these contaminants are related to historic steel operations at the Property.

35. SWI studies indicate that the most contaminated portions of the Site are located at the Coke Point peninsula. Organic compounds, in particular benzene and naphthalene, have been identified in SWI studies as the primary constituents of concern in groundwater on the Property. Currently, the offshore area adjacent to Coke Point is known to be contaminated with PAHs.

36. EPA and MDE retain oversight responsibility for the Off-Shore Study, which investigates potential offshore impacts of releases from the Property.

37. On May 19, 2014, pursuant to Section XXXIII of the BSC Consent Decree, SPLLC requested that approximately 2400 acres of the Property not included in the five Special Study Areas (West Carve Out Areas) be removed from the jurisdiction of the BSC Consent Decree and placed into the Maryland VCP.

38. The ACO provides that SPT may, through contract, lease, agreement of sale, or other instrument, assign the performance of some or all of the ACO obligations to a third party, including SPLLC, provided SPT remains liable for the ACO obligations in the event that the third party does not fully comply with the terms of the ACO.

39. SPT asserts that nothing in the ACO impacts SPLLC's CERCLA or RCRA liability or any other liability under environmental law or the BSC Consent Decree that SPLLC might have at the Site or relating to the Site.

40. SPT has represented that it is a newly formed corporate entity created for the purpose of purchasing the Property and facilitating its redevelopment and that it shares no common

ownership with SPLLC or any affiliate of SPLLC.

41. SPT has represented that it does not own any part of HRE and that HRE does not own any part of SPT.

42. SPT represents, and for the purposes of this Settlement Agreement EPA relies on such representation, that it currently has no ownership interest in the Property and that it has not caused or contributed to the Existing Contamination, is not affiliated with any entity that is liable or potentially liable for the Existing Contamination, and that its involvement with the Site has been limited to conducting due diligence.

43. EPA expects to investigate, and as necessary remediate, areas offshore of the Property within the Site using funds paid by SPT to EPA under the terms of Paragraph 44 of this Settlement Agreement, using CERCLA authorities. EPA shall provide SPT with an opportunity to comment on the scope of investigation, selection of work, and implementation of such offshore work in accordance with the NCP.

VI. PAYMENTS

44. In consideration of and in exchange for the United States' Covenant Not to Sue in Section XII herein, in addition to the Work required under Section VII of this Settlement Agreement, within thirty (30) days of the Effective Date, SPT will contribute $3,000,000.00 (the "Offshore Contribution") for the specific and dedicated purpose of investigating and, to the extent necessary, remediating Existing Contamination which is located offshore of the Property ("Offshore Work").

a. SPT will direct the payment(s) of the Offshore Contribution to EPA to be held by EPA and expended from EPA's Sparrows Point Special Account.

b. The Offshore Work shall be implemented by EPA, working closely, consulting and cooperating with MDE.

c. Offshore Contribution funds will be used to fund the costs associated with investigating and, to the extent necessary, remediating Existing Contamination located offshore of the Property.

d. To the extent that the Offshore Work does not fully exhaust the Offshore Contribution, EPA and MDE shall coordinate to determine the most appropriate use of the funds subject to applicable State and federal law for Site remediation efforts.

45. In further consideration of and in exchange for the United States' Covenant Not to Sue in Section XII herein, within thirty (30) days of the Effective Date, SPT shall pay to EPA $100,000 for Oversight Costs not inconsistent with the NCP.

46. In further consideration of and in exchange for the United States' Covenant Not to Sue in Section XII herein, SPT further agrees to reimburse EPA all Oversight Costs not inconsistent with the NCP (in addition to the $100,000), in an amount not to exceed $50,000 per year following the Effective Date. On a periodic basis, EPA will send SPT a bill requiring payment.

47. SPT shall make all payments required by this Section by Fedwire Electronic Funds (EFT) Transfer to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045

Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency" and shall reference Site/Spill ID Number 03VC and EPA Docket No. CERC/RCRA 2014-03-2014-0279PP.

48. In the event that any payment required under this Settlement Agreement is not paid by the date it is due, SPT shall pay Interest on the unpaid balance. Interest shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment.

49. All payments by SPT to EPA pursuant to this Section shall be deposited by EPA in the Sparrows Point Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, subject to applicable State and federal law.

50. At the time of each payment, SPT shall send notice that such payment has been made to Andrew Fan, at the address set forth in Paragraph 109 below, and to the EPA Cincinnati Finance Office by email at acctsreceivable.cinwd@epa.gov, or by mail to

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID Number 03VC, EPA docket number – CERC/RCRA 2014-03-2014-0279PP, and DOJ Docket No. 90-7-1-830/1.

51. Pursuant to Section XXII (Dispute Resolution), SPT may dispute all or part of a bill for Oversight Costs if SPT determines that EPA has made a mathematical error or included a cost item that is outside the definition of Oversight Costs, or if SPT believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. If any dispute over costs is resolved before payment is due, the amount due will be adjusted as necessary. If the dispute is not resolved before payment is due, SPT shall pay the full amount of the uncontested costs to EPA as specified in Paragraph 47 on or before the due date. Within the same time period, SPT shall pay the full amount of the contested costs into

an interest-bearing escrow account in a duly chartered bank or trust company that is insured by the Federal Deposit Insurance Corporation ("FDIC"). SPT shall simultaneously transmit a copy of both checks to the persons listed in Paragraph 50. SPT shall ensure that the prevailing party in the dispute receives the amount upon which it prevailed from the escrow funds plus any interest accrued within 20 calendar days after the dispute is resolved.

52. Amounts due and owing pursuant to the terms of this Settlement Agreement but not paid in accordance with the terms of this Settlement Agreement shall accrue Interest at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), compounded on an annual basis.

VII. WORK TO BE PERFORMED

53. EPA acknowledges that the work SPT performs under the ACO and this Settlement Agreement may be used to meet the requirements of the BSC Consent Decree upon submission to, and formal approval by, EPA. Specifically, SPT's submission of the Phase II Investigation Plans and Phase II Reports required under Section VII.B herein may be used to meet the requirements in Section V.B. of the BSC Consent Decree for a Site Wide Investigation Work Plan and Site Wide Investigation and the Work Plan required under Section VII.C. herein may be used to meet the requirements in Section V.C of the BSC Consent Decree for a Corrective Measures Study.

54. The Work undertaken pursuant to this Agreement shall be developed and performed, to the extent applicable, in accordance with RCRA, including EPA's Scope of Work for IMs, Scope of Work for a RCRA Facility Investigation (RFI); Scope of Work for CMS; Scope of Work for a Corrective Measure Implementation Plan (CMI); Scope of Work for a Health and Safety Plan; its implementing regulations and relevant EPA guidance documents. EPA's Scopes of Work and relevant guidance are available at:

http://www.epa.gov/reg3wcmd/ca/ca_resources.htm, and are incorporated herein by reference.

55. EPA recognizes that, under the terms of the ACO, SPT shall designate certain areas of the Property as Area A, to be treated on an expedited basis and separately from the remainder of the Property for purposes of the VCP and completion under this Settlement Agreement. The rest of the Property will be Area B. SPT shall implement the investigation and remediation for the Coke Oven Area, as defined in Exhibit 6, on a schedule equal to that of Area A. EPA intends to use its best efforts to address Area A on an expedited basis under this Settlement Agreement.

56. Notwithstanding anything to the contrary in this Agreement, the Parties agree that SPT shall take measures as part of the Work to address contamination present at the Property, including ongoing migration of Waste Material that is coming from the Property, but that this Settlement Agreement shall not require SPT to do any Work off the Property to address Existing Contamination or impacts from Existing Contamination.

57. On and after the Effective Date of this Agreement, the Work conducted at the Property pursuant to this Agreement shall be conducted in compliance with a Health and Safety Plan(s) that provides for the protection of the public health and safety during performance of such activities. The Health and Safety Plan(s) shall be deemed to be incorporated into this Settlement Agreement and made an enforceable part hereof.

58. With respect to the Work below, EPA shall use best efforts to resolve quickly intra agency disputes with MDE.

59. SPT agrees to perform the following acts in the manner and by the dates specified herein:

A. INTERIM MEASURES

60. Commencing on the Effective Date of this Agreement and continuing thereafter,

SPT may submit to EPA for approval an IM Workplan which identifies Interim Measures which will protect human health and the environment and which are, to the extent practicable, consistent with and integrated into any long-term remediation of the Property. The IM Workplan shall be developed in accordance with the IM Scope of Work.

61. Commencing on the Effective Date of this Agreement and continuing thereafter, if EPA identifies Interim Measures which will protect human health and the environment and which are, to the extent practicable, consistent with and integrated into any long-term remediation of the Property, it will notify SPT in writing. Within thirty (30) days of receiving EPA's written notification, SPT shall submit to EPA for approval an IM Work Plan in accordance with the IM Scope of Work that identifies Interim Measures.

B. SITE WIDE INVESTIGATION/PHASE II INVESTIGATION

62. Within sixty (60) days of the Effective Date of this Agreement, SPT shall submit to both MDE and EPA for approval a Phase II Investigation Plan (Phase II Plan) for Area A and a schedule to submit a Phase II Plan for Area B. In consultation with MDE, EPA shall review, comment on and approve as appropriate the Phase II Plan(s). EPA's approval of the Phase II Plan(s) shall not be unreasonably withheld. Upon receipt of approval by EPA and MDE of a Phase II Plan, SPT shall implement the EPA-approved Phase II Plan in accordance with the terms and schedules contained therein. The Phase II Plans shall be developed in accordance with the RFI Scope of Work.

63. Within sixty (60) days of completing the Work set forth in an EPA-approved Phase II Plan, SPT shall submit to both MDE and EPA a Phase II Report (Phase II Report). In consultation with MDE, EPA shall review, comment on and approve as appropriate the Phase II Report(s). EPA's approval of the Phase II Report(s) shall not be unreasonably withheld. As part

of the Phase II Report(s), SPT may submit to EPA a Justification for Determination of No Further Action, proposing that no further action by SPT be required at a parcel within Area A or Area B, which EPA shall review as part of the Phase II Report. In the event that EPA approves the Phase II Plan that includes a Justification for No Further Action and if, after EPA issues a Final Decision and Response to Comments (FDRTC) after receiving public comment on a Statement of Basis (SB) EPA selects a corrective measure of no further action in accordance with the provisions set forth in Section C below, SPT shall not be required to perform a Corrective Measures Study as provided for in Section C, immediately below, at the relevant parcel.

C. CORRECTIVE MEASURES STUDY ("CMS")/WORK PLANS

64. Within ninety (90) days of receiving EPA and MDE approvals of a Phase II Report, and the MDE-approved risk assessment as required by the ACO, SPT shall prepare and submit to both MDE and EPA a Work Plan for the parcels covered in the Phase II Report.

65. If on the basis of public comment as provided in Section B, immediately below, EPA determines that, notwithstanding its prior approval of a Phase II Plan that includes the Justification for Determination of No Further Action, further corrective action is required for a portion of the Property identified in the Justification for Determination of No Further Action, in accordance with the provisions set forth in Section D below, SPT shall submit to EPA for approval a draft Work Plan(s) which shall serve as a draft CMS Report in accordance with the CMS Scope of Work.

66. In consultation with MDE, EPA shall review, comment on, and approve as appropriate the Work Plan(s). If EPA determines that the Work or part of the Work addressed in the Work Plan involves corrective measures that require a CMS, it shall say so in the comments. EPA's approval of the Work Plans shall not be unreasonably withheld.

67. For portions of Area A and Area B that are not within the definition of Facility or Site under the BSC Consent Decree at the time of the submission of the applicable Work Plan, EPA shall use its best efforts to notify SPT and MDE during the comment period if it determines that Work proposed in the Work Plan shall not comprise adequate corrective measures.

D. PUBLIC COMMENT AND PARTICIPATION

68. After EPA-approval of either a Phase II Report that includes a Justification for Determination of No Further Action or a Work Plan, EPA shall make such Phase II Report or Work Plan, a description of EPA's proposed corrective measure(s), if applicable, and EPA's justification for its proposed selection of corrective measure(s) in a Statement of Basis available to the public for review and comment for at least thirty (30) calendar days.

69. EPA anticipates that, in certain situations, it may propose in the Statement of Basis that no further action is required or that the Work set forth in a Work Plan to be administered under the ACO will satisfy SPT's corrective action obligations at the Property.

70. Following the public review and comment period for a Statement of Basis, EPA will issue a RCRA Final Decision and Response to Comments (FDRTC) in which it will respond to comments, if any, that were received during the comment period, and in which it will notify the public, including SPT, of the corrective measure(s) (if any) it has selected. If the corrective measure(s) selected by EPA in the RCRA FDRTC after consideration of public comments differs significantly from the corrective measure(s) recommended in the Statement of Basis, EPA will explain in the RCRA FDRTC the basis for such difference.

71. After MDE approves a Work Plan and EPA issues its FDRTC, SPT shall implement the Work Plan as set forth in Section VI.E. below. If the FDRTC requires corrective measures in addition to the Work required in a Work Plan approved by MDE, SPT shall perform such

additional corrective measures.

E. CORRECTIVE MEASURES IMPLEMENTATION ("CMI")

72. Upon issuance of the FDRTC(s), the FDRTC(s) shall be incorporated into and become enforceable under this Agreement.

1. Corrective Measures Work Plan and Design(s)

a. If required, within sixty (60) days of the issuance of the FDRTC, SPT shall submit to EPA for approval a Corrective Measures Implementation Workplan ("CMI Workplan") for implementation of the corrective measures selected in the FDRTC. The CMI Workplan shall be developed in accordance with the CMI Scope of Work. If corrective measures construction is required, within one hundred twenty (120) calendar days of receipt of EPA approval of the CMI Workplan, SPT shall submit to EPA for approval the initial 30% CMI Design Submission(s) (with a list of plans and specifications), which shall be developed in accordance with the Scope of Work for CMI.

b. Within forty-five (45) calendar days of receipt of EPA's comments on the 30% CMI Design Submission(s), SPT shall incorporate those comments and submit to EPA for approval a 90% CMI Design Submission (with complete plans and specifications). Each 90% CMI Design Submission shall be developed in accordance with the Scope of Work for CMI.

c. Upon receipt by SPT of EPA's approvals of each 90% CMI Design Submission, said Submission shall be incorporated into and become enforceable under this Agreement, and SPT shall implement it in accordance with the schedules

and provisions contained therein. The EPA approved CMI Design Submission will be known as CMI Design Report(s).

2. Corrective Measures Construction and Implementation

a. SPT shall commence and complete construction or implementation of such corrective measures in accordance with the Scope of Work for the CMI and the schedules and specifications set forth in the EPA-approved CMI work plan and the EPA - approved CMI Design Report(s), as applicable.

b. Within ninety (90) calendar days of completing the construction of corrective measures, SPT shall submit to EPA for approval a CMI Report. Each CMI Report shall be developed in accordance with the Scope of Work for CMI and shall describe activities performed during construction, provide actual specifications of the implemented remedy, and provide a preliminary assessment of CMI performance.

c. EPA shall determine, on the basis of the CMI Report and any other relevant information, whether the constructed corrective measures are consistent with the EPA-approved CMI Design Report(s). If EPA determines that the constructed corrective measures are consistent with the EPA-approved CMI Design Report(s) and that the constructed corrective measures have achieved or are achieving all of the requirements set forth in the FDRTC and the performance criteria established in the CMI Design Report(s), EPA shall approve the CMI Report.

d. If EPA determines that the constructed corrective measures are inconsistent with the EPA-approved CMI Design Report(s) and/or that the constructed corrective measures have not achieved or are not achieving all of the requirements

set forth in the FDRTC and the performance criteria established in the CMI Design Report(s), EPA shall notify SPT in writing of those activities that must be undertaken to complete the corrective measures requirements and shall set forth a schedule for the completion of those activities.

e. SPT shall take reasonable steps to restrict the use of the Property in any manner that may interfere with a remedial action, operation and maintenance, monitoring, or other corrective measures necessary to assure the effectiveness and integrity of the corrective measures to be implemented pursuant to this Agreement.

3. Corrective Measures Assessment Reports

a. If corrective measure(s) are required by EPA in a FDRTC, within one calendar year after EPA's approval of the CMI Report pursuant to Paragraph 72.2.c above, SPT shall submit to EPA a CMI Assessment Report for approval by EPA. The CMI Assessment Report shall provide an evaluation of the corrective measure(s)' effectiveness in achieving the requirements set forth in the FDRTC, and the performance criteria established in the CMI Design Report(s).

b. If, based on a CMI Assessment Report or any other information, EPA determines that the corrective measures are not achieving the requirements set forth in the FDRTC, or EPA determines that the corrective measures are not meeting the performance criteria established in the CMI Design Report(s), EPA shall notify SPT in writing of those activities that must be undertaken to meet the requirements of the performance criteria established in the CMI Design Report(s) and shall set forth a schedule for the completion of those activities. SPT shall complete the activities in accordance with the schedule set forth in the EPA notification.

c. No later than five (5) years after the Effective Date of this Agreement and every five (5) years thereafter until SPT's receipt of written notice from EPA that SPT has demonstrated, to the satisfaction of EPA, that the terms of this Agreement, including any additional tasks determined by EPA to be required pursuant to this Agreement, have been satisfactorily completed, SPT shall submit to EPA a CMI Five-Year Assessment Report. Such Report shall contain an evaluation of the past and projected future effectiveness of the corrective measures in achieving the requirements set forth in the FDRTC and the performance criteria established in the CMI Design Report(s).

d. SPT may, as part of a CMI Five-Year Assessment Report, request that EPA select, for the purposes of this Agreement, an Alternative and/or Supplemental Corrective Measure.

e. In the event EPA selects Alternative and/or Supplemental Corrective Measures, either in response to a request by SPT pursuant to Paragraph 72.3.d. above, or on its own initiative, EPA may, in its sole discretion and not subject to Dispute Resolution, provide SPT with a period of sixty (60) calendar days from the date SPT receives written notice from EPA of the selection of Alternative and/or Supplemental Corrective Measures within which to reach an agreement with EPA regarding performance of the Alternative and/or Supplemental Corrective Measures in lieu of, or in addition to, the corrective measures. Any such agreement between EPA and SPT shall be incorporated into and become enforceable under this Agreement and SPT shall implement the activities required under any such agreement in accordance with any schedule and provisions contained therein.

Corrective Measures Termination

4. If SPT believes that a corrective measure required pursuant to this Agreement has achieved the corrective action objectives set forth in the FDRTC, SPT may submit to EPA a request that such corrective measure be discontinued. Upon receipt of EPA's approval of SPT's request, SPT may discontinue the corrective measure as specified in EPA's approval.

73. EPA's Review and Approval of Submissions

a. EPA will review and comment on, as appropriate, each Submission submitted pursuant to this Settlement Agreement, and EPA shall, after receipt of the Submission: (i) approve, in whole or in part, the Submission; (ii) approve the Submission conditioned upon certain modifications and/or revisions and require that SPT modify the Submission and comply with the modified Submission and resubmit the revised Submission (Conditional Approval); (iii) disapprove, in whole or in part, the Submission, directing SPT to modify and resubmit the Submission; or (iv) any combination of the above.

b. EPA shall use best efforts to specify in writing any comments, deficiencies, approvals, disapprovals or requests for modifications within a time period no longer than ninety (90) days of receipt of a Submission. The absence of a response by EPA within ninety (90) days shall not be deemed approval of a Submission. No approval, conditional approval or disapproval of an initial Submission pursuant to this Paragraph shall be subject to the Dispute Resolution procedures of Section XXII (Dispute Resolution). Notwithstanding any notice of disapproval, SPT shall implement, at the direction of EPA and within the time periods set forth in any

applicable schedule, any task required by any non-deficient portion of a Submission.

c. Any conditional approval of a Submission made by EPA pursuant to this Settlement Agreement shall be considered a disapproval of such Submission unless and until SPT notifies EPA in writing that any and all conditions for approval have been fully and completely satisfied.

d. Within thirty (30) days of receipt of EPA's comments on any Submission, SPT shall submit to EPA and MDE a revised Submission which responds to EPA's comments and/or corrects any deficiencies identified by EPA. In the event that EPA disapproves any portion of a revised Submission, SPT may invoke the dispute resolution procedures set forth in Section XXII (Dispute Resolution) of this Settlement Agreement. However, EPA reserves the right to prepare such Submission in lieu of SPT and to seek to recover from SPT the costs thereof, in accordance with CERCLA, and any other applicable laws, and/or take any other appropriate action under RCRA, CERCLA, or any other legal authority, subject to the Covenant Not to Sue and Reservation of Rights in this Agreement. SPT reserves its rights to defend against any such action.

74. All plans, reports, and other items required to be submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated and fully enforceable under this Settlement Agreement. In the event EPA approves or modifies any portion of a plan, report, or other item required to be submitted to EPA under this Settlement Agreement, the approved or modified portion shall be enforceable under this Settlement Agreement. SPT shall implement any such plan, report, or item as approved or modified by EPA subject only to its right

to invoke the procedures set forth in Section XXII (Dispute Resolution).

VIII. ACCESS/NOTICE TO SUCCESSORS IN INTEREST/INSTITUTIONAL CONTROLS

75. Commencing upon the date that it acquires title to the Property and throughout the time of its ownership and/or operation of the Property, SPT agrees to provide to EPA and its authorized officers, employees and representatives performing any Response Action at the Site, an irrevocable right of access at all reasonable times to the Property and to any other property to which access is required for the implementation of any Response Action at the Site, to the extent access to such other property is controlled by SPT, for the purposes of performing and overseeing Response Actions at the Site. EPA agrees to provide reasonable notice to SPT of the timing of any Response Action to be undertaken at the Property. Notwithstanding any provision of this Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statute or regulation, including any amendments thereto.

76. SPT shall implement and comply with all land use restrictions and institutional controls on the Property as selected in accordance with Section VII (Work To Be Performed of this Settlement Agreement or a Response Action.

77. For so long as SPT is owner and/or operator of the Property, SPT shall require that assignees, successors in interest, and any lessees, sublessees and other parties who may hereafter be granted rights to use or who otherwise will hold an interest (other than a mortgage or other security interest) in the Property to contractually agree to provide access and cooperation to EPA and its authorized officers, employees and representatives, and all other persons performing Response Action under EPA or MDE oversight, an irrevocable right of access to the Property in connection with Response Action, to implement and comply with any institutional controls on the Property in connection with a Response Action or selected in accordance with the Work To Be Performed

Section of this Settlement Agreement and not contest EPA's authority to enforce any institutional controls on the Property.

78. SPT shall provide a copy of this Agreement to any current lessee, sublessee, and all other parties with rights to use the Property as of the Effective Date. SPT shall provide a copy of this Settlement Agreement to each contractor hired to perform any requirement of this Settlement Agreement and to each person representing SPT with respect to the Property, and shall do so within seven (7) calendar days of the Effective Date of this Settlement Agreement or date of such retention, whichever is later. SPT shall also condition all contracts entered into for performance of the requirements of this Settlement Agreement in conformity with the terms of this Agreement. SPT or its contractors shall provide written notice of this Settlement Agreement to all subcontractors hired to perform any requirement of this Agreement. SPT shall nonetheless be responsible for performing all the requirements herein in accordance with the terms and conditions set forth in this Settlement Agreement.

79. All activities undertaken by SPT pursuant to Section VII (Work To Be Performed), Section VIII (Access/Notice to Successors in Interest/Institutional Controls), Section IX (Appropriate Care/Cooperation), and Section XVII (Document Retention) of this Settlement Agreement shall be performed in accordance with all the requirements of all applicable federal, state and local laws and regulations.

IX. APPROPRIATE CARE/COOPERATION

80. SPT shall exercise appropriate care with respect to the Existing Contamination and shall comply with all applicable local, state, and federal laws and regulations applicable thereto.

81. SPT shall comply with all applicable local, state, and federal laws and regulations with respect to Waste Material, not within the definition of Existing Contamination, found at the

Property.

82. SPT shall provide full cooperation, assistance and access to persons that are authorized by the United States to conduct Response Actions and/or natural resource restoration at the Site including the cooperation and access necessary for the installation, integrity, operation, and maintenance of any complete or partial Response Actions or natural resource restoration at the Site.

83. SPT recognizes that the implementation of any Response Action at the Site may interfere with its use of the Property, and may require closure of its operations or a part thereof. SPT agrees to cooperate fully with EPA in the implementation of any Response Actions at the Site and further agrees not to interfere with such Response Actions. EPA agrees, consistent with its responsibilities under applicable law, to use reasonable efforts to minimize any interference with SPT's operations by such entry and response.

84. In the event the SPT becomes aware of any action or occurrence which causes or threatens a release of hazardous substances, pollutants or contaminants at or from the Property that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, SPT shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall, in addition to complying with any applicable notification requirements under Section 103 of CERCLA, 42 U.S.C. § 9603, and any other law, immediately notify EPA of such release or threatened release. Any actions taken by SPT pursuant to this Paragraph 84 shall be taken in consultation with the EPA Project Coordinator identified in Section XIX (Notices And Submissions) or other available authorized EPA officers and in accordance with all applicable provisions of the Health and Safety Plan and any other applicable Submissions approved pursuant to this Agreement.

X. INDEMNIFICATION

85. SPT shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of SPT, its officers, managers, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, SPT agrees to pay the United States all costs incurred by the United States, including but not limited to attorney's fees and other expenses of litigation, arising from or on account of claims made against the United States based on the negligent or other wrongful acts or omissions of SPT, SPT's officers, managers, employees, agents, contractors, subcontractors and any persons acting on SPT's behalf or under SPT's control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of SPT in carrying out activities pursuant to this Settlement Agreement. Neither SPT nor any such contractor shall be considered an agent of the United States. Notwithstanding the foregoing, the hold harmless and indemnification rights provided to the United States in this Indemnification Section X do not apply to an act or omission of SPLLC, its officers, managers, employees, agents, contractors or subcontractors. SPLLC is bound to the United States by a hold harmless and indemnification provision set forth in Section XXXIX of the BSC Consent Decree.

86. The United States shall give SPT reasonable advance written notice of any claim for which the United States plans to seek indemnification pursuant to this Section X and shall consult with SPT no later than ten (10) business days prior to settling such claim.

87. SPT waives all claims against the United States for damages or reimbursement or for setoff of any payments made or to be made to the United States, arising from or on account of any

contract, agreement, or arrangement between SPT and any person for performance of Work on or relating to the Property, including, but not limited to, claims on account of construction delays. In addition, SPT shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between SPT and any person for performance of Work on or relating to the Property, including, but not limited to, claims on account of construction delays. Notwithstanding the foregoing, these indemnification and hold harmless rights provided to the United States in this Section X do not apply to any claims for damages or reimbursement brought against the United States by SPLLC or its successor or assigns and relating to SPLLC's obligations under the BSC Consent Decree.

XI. CERTIFICATIONS

88. By entering into this Settlement Agreement, SPT certifies that to the best of its knowledge and belief it has fully and accurately disclosed to EPA all information known to SPT and all information in the possession or control of its officers, managers, employees, contractors and agents which relates in any way to any Existing Contamination or any past or potential future release of Waste Material at or from the Property. SPT also certifies that to the best of its knowledge and belief it has not caused or contributed to a release or threat of release of Waste Material at or from the Property. If the United States determines that information provided by SPT is not materially accurate and complete, then the United States, acting within its sole discretion, may declare this Settlement Agreement to be null and void and the United States reserves all rights it may have.

89. All Submissions by SPT to EPA which purport to document SPT's compliance with the terms of this Settlement Agreement shall include a certification signed by a Duly Authorized Representative for SPT. For purposes of this Settlement Agreement, a person is a "duly authorized representative" only if: (1) the authorization is made in writing by a person described in 40 C.F.R

Section 270.11(a); (2) the authorization specifies either an individual or a position having responsibility for overall operation of the regulated facility or activity (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and (3) the written authorization is submitted to the EPA Project Coordinator identified in Section XIX (Notices And Submissions).

90. The certification required by Paragraph 89 shall be in the following form: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Signature:_____
Printed Name:_____
Title:_____

XII. COVENANT NOT TO SUE

91. In consideration of the actions that will be performed and the payments that will be made by SPT, and except as otherwise specifically provided in this Settlement Agreement, the United States covenants not to sue or take any other civil or administrative action against SPT for any and all civil liability, injunctive relief or reimbursement of response costs pursuant to Sections 106 or 107(a) of CERCLA, 42 U.S.C. §§ 9606 or 9607(a), or Sections 3005, 3008(a), and 7003 of RCRA, 42 U.S.C. §§ 6925, 6928(a), and 6973, with respect to Existing Contamination. In no event

shall this covenant not to sue apply to HRE or SPLLC.

92. This covenant not to sue shall take effect upon payment by SPT of the amount specified in Section VI (Payment), Paragraphs 44 and 45 of this Settlement Agreement. This covenant not to sue is conditioned upon the complete and satisfactory performance by SPT of all obligations under this Settlement Agreement to the satisfaction of EPA. This covenant not to sue extends only to SPT's officers, members, managers, or employees, but only to the extent that the alleged liability of the officer, member, manager, or employee is based solely on their status as an officer, member, manager, or employee of SPT, and not to the extent that the alleged liability arose independently of SPT.

XIII. RESERVATION OF RIGHTS

93. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA or the United States from seeking legal or equitable relief to enforce the terms of this Settlement Agreement.

94. The covenant not to sue set forth in Section XII (Covenant Not to Sue) above does not pertain to any matters other than those expressly specified in Section XII. The United States reserves and the Settlement Agreement is without prejudice to all rights against SPT with respect to all other matters, including but not limited to, the following:

a. liability based on a failure by SPT to meet a requirement of this Settlement Agreement;

b. liability for the exacerbation of Existing Contamination caused by SPT or its

successors or assigns;

c. liability resulting from the release or threat of release of Waste Material at the Property after the Effective Date that is not within the definition of Existing Contamination;

d. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

e. liability arising from the disposal, release or threat of release of Waste Materials outside of the Site;

f. criminal liability; and

g. liability for violations by SPT, its successors or assigns of local, state, or federal law, regulations, permits or orders.

95. The covenant not to sue set forth in Section XII does not extend to SPT for response costs incurred by the United States for a Response Action undertaken by EPA after the Effective Date of this Settlement Agreement resulting in an increase in the fair market value of the Site that existed before such Response Action was initiated, but only to the extent that such response costs are not otherwise reimbursed in whole or in part.

96. With respect to any claim or cause of action asserted by the United States, SPT shall bear the burden of proving that the claim or cause of action, or any part thereof, is attributable solely to Existing Contamination and nothing in this Agreement prohibits the United States from pursuing claims against SPT for the release of Waste Material at the Property after the Effective Date that is not within the definition of Existing Contamination.

97. Nothing in this Settlement Agreement is intended as a release or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or

in equity, which the United States may have against any person, firm, corporation or other entity not a party to this Settlement Agreement.

98. Nothing in this Settlement Agreement is intended to limit the right of EPA to undertake future Response Actions at the Site or to seek to compel parties other than SPT to perform or pay for Response Actions at the Site. Nothing in this Settlement Agreement shall in any way restrict or limit the nature or scope of Response Actions which may be taken or be required by EPA in exercising its authority under federal law.

XIV. SPT'S COVENANT NOT TO SUE

99. In consideration of the Covenant Not To Sue in Section XII of this Settlement Agreement, SPT hereby covenants not to sue and not to assert any claims or causes of action against the United States, its authorized officers, employees, or representatives with respect to the Site or this Settlement Agreement, including but not limited to, any direct or indirect claims for reimbursement from the Hazardous Substance Superfund established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507, through CERCLA §§ 106(b)(2), 111, 112, and 113, 42 U.S.C. §§ 9606(b)(2), 9611, 9612, and 9613, or any other provision of law, any claim against the United States, including any department, agency or instrumentality of the United States under CERCLA §§ 107 or 113, 42 U.S.C. §§ 9607 or 9613, related to the Site, or any claims arising out of response activities at the Site, including claims based on EPA's oversight of such activities or approval of plans for such activities.

100. SPT reserves, and this Settlement Agreement is without prejudice to, actions against the United States based on negligent actions taken directly by the United States, not including oversight or approval of SPT's plans or activities, that are brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than

CERCLA or RCRA. Nothing herein shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XV. TRANSFER OF COVENANT/AGREEMENT

101. Notwithstanding any other provisions of this Settlement Agreement, all of the rights, benefits and obligations conferred upon SPT under this Settlement Agreement may be assigned or transferred to any person with the prior written consent of EPA in its sole discretion.

102. In the event of an assignment or transfer of the Property or an assignment or transfer of an interest in the Property, the assignor or transferor shall continue to be bound by all the terms and conditions, and subject to all the benefits, of this Settlement Agreement except as EPA and the assignor or transferor agree otherwise and modify this Settlement Agreement, in writing, accordingly.

103. Prior to or simultaneous with any assignment or transfer of a fee title interest in the Property, the assignee or transferee must consent in writing to be bound by some or all terms of this Settlement Agreement, as determined at the time of the assignment or transfer, in order for the Covenant Not to Sue in Section XII to be available to that party. The Covenant Not to Sue in Section XII shall not be effective with respect to persons not identified in that Section and who are assignees or transferees of a fee title interest that fail to provide such written consent to EPA, unless otherwise agreed to by EPA in writing.

104. With EPA's written approval, which will not be unreasonably withheld, SPT may assign or transfer this Settlement Agreement to a subsidiary or entity under the control of or affiliated with SPT which is created after the Effective Date so long as such assignee or transferee consents in writing to be bound by all terms of this Settlement Agreement.

105. SPT agrees to pay the reasonable costs incurred by EPA to review any subsequent

requests for consent to assign or transfer the benefits conferred by this Settlement Agreement.

XVI. DISCLAIMER

106. This Settlement Agreement in no way constitutes a finding by EPA as to the risks to human health and the environment which may be posed by contamination at the Site nor constitutes any representation by EPA that the Site is fit for any particular purpose.

XVII. DOCUMENT RETENTION

107. SPT agrees to retain and make available to EPA all business and operating records, contracts, Site studies and investigations, and documents relating to operations at the Site, for at least ten years, following the Effective Date unless otherwise agreed to in writing by the Parties. At the end of ten years, SPT shall notify EPA of the location of such documents and shall provide EPA with an opportunity to copy any documents at the expense of EPA.

XVIII. PAYMENT OF COSTS

108. Except to the extent of an assignment or transfer of the Property such that SPT is no longer bound by the terms and conditions of Section VIII (Access/Notice to Successors in Interest/Institutional Controls) of this Settlement Agreement, if SPT fails to comply with the material terms of this Agreement, it shall be liable for all litigation and other enforcement costs incurred by the United States to enforce this Settlement Agreement or otherwise obtain compliance with this Settlement Agreement.

XIX. NOTICES AND SUBMISSIONS

109. Whenever under the terms of this Settlement Agreement written notice is required to be given by one Party to another, it shall be directed to the individuals or office at the addresses specified below, unless those individuals or their successors give notice of a change to the other Party in writing. All notices and submissions shall be considered effective upon receipt, unless

otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Settlement Agreement with respect to the United States, EPA and SPT.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611

Re: DOJ 90-7-1-830/1

As to EPA:

Charles B. Howland
Senior Assistant Regional Counsel (3RC42)
United States Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029
215-814-2645
Howland.charles@epa.gov
and

Andrew Fan
EPA Project Coordinator (3LC30)
United States Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029
1-215-814-3426
Fan.andrew@epa.gov

As to SPT:

Douglas Dorgan, Jr.
SPT Project Coordinator
Weaver Boos Consultants
35 E. Wacker Drive
Suite 1250

Chicago, IL 60601
312-922-1030
ddorgan@weaverboos.com

Russell Becker
Sr. VP Environmental
Sparrows Point LLC
1430 Sparrows Point Blvd
Sparrows Point, MD 21219
314 686-5611
rbecker@enviroanalyticsgroup.com

XX. RESERVED

XXI. FORCE MAJEURE

110. SPT agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of SPT, or of any entity controlled by SPT, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite SPT's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

111. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, SPT shall notify EPA orally within forty eight (48) hours of when SPT first knew that the event might cause a delay. Within seven (7) days thereafter, SPT shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of

any measures to be taken to prevent or mitigate the delay or the effect of the delay; SPT's rationale for attributing such delay to a *force majeure* event if it intends to assert such a claim; and a statement as to whether, in the opinion of SPT, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude SPT from asserting any claim of *force* majeure for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

112. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify SPT in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify SPT in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

113. If SPT elects to invoke the dispute resolution procedures set forth in Section XXII (Dispute Resolution), SPT shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, SPT shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that SPT complied with the requirements of Paragraphs 111 and 112 above. If SPT carries this burden, the delay at issue shall be deemed not to be a violation by SPT of the affected obligation of this

Settlement Agreement.

XXII. DISPUTE RESOLUTION

114. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally. If EPA contends that SPT is in violation of this Settlement Agreement, EPA Region III shall notify SPT in writing, setting forth the basis for its position. SPT may dispute EPA Region III's position pursuant to Paragraphs 115 and 116 of this Section.

115. If SPT disputes EPA Region III's position with respect to compliance by SPT with this Settlement Agreement or objects to any EPA action taken pursuant to this Settlement Agreement, SPT shall notify EPA Region III in writing of its position unless the dispute has been resolved informally. EPA Region III may reply, in writing, to the position of SPT within thirty (30) days of receipt of notice by SPT. EPA Region III and SPT shall have thirty (30) days from EPA Region III's receipt of a written statement of position by SPT to resolve the dispute through formal negotiations (the Negotiation Period). The Negotiation Period may be extended at the sole discretion of EPA Region III. Such extension may be granted orally but must be confirmed in writing.

116. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties be incorporated into and become an enforceable part of this Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA Region III management official at the Deputy Director level or higher will review the dispute of the Parties, including SPT's written statements of position, and issue a written decision on the dispute to SPT. EPA Region III's decision shall be incorporated into and become an enforceable part of this

Settlement Agreement.

117. The obligations of SPT under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, the Parties shall act consistent with the agreement or decision reached.

XXIII. SUBSEQUENT MODIFICATION

118. This Settlement Agreement may be amended only by mutual agreement of EPA and SPT. Any such amendment shall be in writing, shall be signed by an authorized representative of each party, shall have as its effective date the date on which it is signed by EPA, and shall be incorporated into this Settlement Agreement.

119. Minor modifications in the studies, techniques, procedures, designs or schedules utilized in carrying out this Settlement Agreement and necessary for the completion of the project may be made by written agreement of the Project Coordinators identified in Section XIX (Notices And Submissions). Such modifications shall be incorporated by reference into and be enforceable pursuant to this Settlement Agreement and have as an effective date the date on which the agreement is signed by the EPA Project Coordinator.

120. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by SPT shall be construed as relieving SPT of its obligation to obtain written approval, if and when required by this Settlement Agreement.

XXIV. NOTICE OF COMPLETION/ TERMINATION

121. When EPA determines that all or a portion of the Work has been fully performed in accordance with this Settlement Agreement, EPA will provide written notice to SPT.

122. If any Party believes that any or all of the obligations under Section VIII (Access/Notice to Successors in Interest/Institutional Controls) are no longer necessary to ensure compliance with the requirements of the Settlement Agreement, that Party may request in writing that the other agree to terminate the provision(s) establishing such obligations; provided, however, that the provision(s) in question shall continue in force unless and until the Party requesting such termination receives written agreement from the other party to terminate such provision(s).

XXV. CONTRIBUTION PROTECTION

123. With regard to claims for contribution against SPT, the Parties agree that this Settlement Agreement is an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and that SPT is entitled to protection from contribution actions or claims as provided by CERCLA §§ 113(f)(2) and 122(h)(4), 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided by law, for matters addressed in this Settlement Agreement. The matters addressed in this Settlement Agreement include all Work undertaken by SPT, or its agents, employees, contractors or assigns pursuant to this Settlement Agreement; any Response Action by the United States or response by any other person taken or to be taken for or relating to the Site with respect to Existing Contamination; and any response costs incurred or to be incurred by the United States or any other person for or relating to the Site with respect to the Existing Contamination.

124. SPT agrees that with respect to any suit or claim for contribution brought by it for matters related to this Settlement Agreement it will notify the United States in writing no later than sixty (60) days prior to the initiation of such suit or claim.

125. SPT also agrees that with respect to any suit or claim for contribution brought against it for matters related to this Settlement Agreement it will notify in writing the United States within ten (10) days of service of the complaint on them.

XXVI. EXHIBITS

126. Exhibit 1 shall mean the description of the Property which is the subject of this Agreement.

127. Exhibit 2 shall mean the map showing the location of Cells 1 – 6.

128. Exhibit 3 shall mean the May 22, 2014 SCCP.

129. Exhibit 4 shall mean EPA and MDE's June 26, 2014 comments on the SCCP

130. Exhibit 5 shall mean the Maryland ACO.

131. Exhibit 6 shall mean the map showing the "Coke Oven Area."

XXVII. PUBLIC COMMENT

132. This Settlement Agreement shall be subject to a thirty-day public comment period, after which EPA may modify or withdraw its consent to this Settlement Agreement if comments received disclose facts or considerations which indicate that this Settlement Agreement is inappropriate, improper or inadequate.

XXVIII. EFFECTIVE DATE

133. This Settlement Agreement shall become effective (Effective Date) on either (1) the date when SPT acquires the Property or (2) the date upon which EPA issues written notice to SPT that EPA has fully executed the Settlement Agreement after review of and response to any public comments received, whichever is later.

XXIX. COUNTERPARTS

134. This Settlement Agreement may be signed in any number of counterparts (including

facsimile and electronic transmission counterparts), each of which shall be an original, with the same effect as if the signatures were upon the same instrument.

IT IS SO AGREED:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

BY:

Shawn M. Garvin 9/12/14

Shawn M. Garvin Date

Regional Administrator
United States Environmental Protection Agency
Region III

THE UNDERSIGNED PARTY enters into this Agreement, Docket Number CERC/RCRA 2014-03-2014-0279PP

IT IS SO AGREED:

UNITED STATES DEPARTMENT OF JUSTICE

BY:

9/16/14

Nathaniel Douglas Date

Deputy Section Chief
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice

THE UNDERSIGNED PARTY enters into this Agreement, Docket Number CERC/RCRA 2014-03-2014-0279PP

IT IS SO AGREED:

SPARROWS POINT TERMINAL LLC

BY:

9/12/14

Michael Pedone, President Date

Exhibit 1

LEGAL DESCRIPTION

All that certain lot or parcel of land together with all improvements thereon located and being in the County of Baltimore, Maryland and being more particularly described as follows:

All that certain lot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the City of Sparrows Point, County of Baltimore, State of Maryland

Beginning for the same at a rebar and cap found on the south side of Wise Avenue, 70' wide, and Greys road, a private road, said point being at the end of the first line described in a deed from Bethlehem Steel Corporation to Sparrows Point County Club, Inc., dated December 6, 1985 and being recorded in the land records of Baltimore County, Maryland in liber 7056, folio 756. Thence binding on the South side of said Avenue, referring all courses of this description to the Maryland Coordinate System (NAD 83/91), from the POINT OF BEGINNING so fixed;

1. South 69 degrees 19 minutes 22 seconds East 105.97 feet, to a point at the end of the last line of a deed from Resirole Properties Inc. to Cleaners Hanger Company, dated June 20, 1994, and being recorded among the fore mentioned land records in liber 10608, folio 73. Thence binding in part on the last mentioned deed and along the east side of Greys Road the three following courses and distances viz;
2. South 26 degrees 10 minutes 15 seconds West 404.92 feet, thence;
3. South 63 degrees 43 minutes 56 seconds East 2.50 feet, thence;
4. South 26 degrees 10 minutes 15 seconds West 256.95 feet, to a point at the end of the fifth line of a deed from National Perforating Corporation to Diamond Manufacturing Company/Sparrows Point dated February 1, 1991 and recorded among the fore mentioned land records in liber 8713, folio 332, thence binding reversely on the third, and forth lines of the last mentioned deed the two following courses and distances viz;
5. South 26 degrees 10 minutes 20 seconds West 19.80 feet, thence;
6. South 37 degrees 23 minutes 45 seconds West 372.52 feet, to the northwestern most line of Parcel A as shown on a plat entitled "Plat Of North Point Industrial Center" said plat being recorded among the fore mentioned land records in plat book 63, page 3, thence continuing along east side of private road and binding on the outline of said plat the three following courses and distances viz;
7. South 37 degrees 23 minutes 45 seconds West 681.77 feet, to a rebar and cap found, thence; continuing along east side of private road;
8. 247.79 feet along the arc of a tangential curve to the left having a radius of 342.77 and being subtended by a chord of South 16 degrees 41 minutes 10 seconds West 242.43 feet, to a concrete monument found, thence;
9. South 4 degrees 01 minutes 25 seconds East 630.21 feet, along east side of private road; to a rebar and cap found, at the end of the end of the westernmost or north 03 degrees 46 minutes 41 seconds west, 447.06 foot line of a plat entitled "Plat of Signode Corporation"", said plat being recorded among the fore mentioned land records in plat book 61, page 62, thence binding reversely on said line;
10. South 4 degrees 01 minutes 25 seconds East 447.58 feet, to a point at the end of the third line as described in a deed from the Paul Revere Corporation to Thompson Steel Company, Inc., dated

May 28, 1974. and being recorded among the fore mentioned land records in liber 5449, folio 854. Thence binding reversely on said line, continuing along east side of private road.

11. South 4 degrees 01 minutes 25 seconds East 489.04 feet, to a concrete monument found at the end of the eighth line as described in a deed from Dale Industries, Inc., to Quad Partners Limited Partnership dated May 4, 1988 and being recorded among the fore mentioned land records in liber 7853, folio 265. thence binding reversely on said line;

12. South 4 degrees 01 minutes 25 seconds East 495.05 feet, to a point at the end of the seventh line of the last mentioned deed, thence continuing along east side of private road;

13. South 13 degrees 46 minutes 25 seconds East 714.48 feet, to a point at the end of the sixth or 461.25 foot radius line as described in parcel two of a deed from Vulcan Materials Company to AMG Resources Corporation, dated February 19, 1988 and being recorded in above mentioned land records in liber 7815, folio 613. Thence binding reversely on said arc;

14. 66.06 feet along the arc of a curve to the left having a radius of 461.25 feet and being subtended by a chord of South 17 degrees 52 minutes 36 seconds East 66.00 feet to a point at the end of the fifth line of the above mentioned deed, thence; binding reversely on said fifth and forth line of the last mentioned deed, the two following courses and distances viz;

15. South 49 degrees 06 minutes 29 seconds East 198.52 feet, thence;

16. South 77 degrees 46 minutes 33 seconds East 458.38 feet, to a point at the beginning of the first or North 62 degrees 55 minutes East 691 foot line of a deed from Greif Brothers Cooperage Corporation to the Bethlehem Steel Company , dated March 12, 1966, and being recorded among the above mentioned land records in liber 4592, folio 149. thence along Wire Mill Road, a private road, and binding on the first through the forth lines of said deed the following three courses and distances viz;

17. North 62 degrees 55 minutes 56 seconds East, 1215.08 feet, thence;

18. South 27 degrees 04 minutes 04 seconds East, 90.00 feet, thence;

19. South 62 degrees 55 minutes 56 seconds West, 1096.91 feet **to** a point at the end of the fifth or North 62 degrees 55 minutes East, 96.22 foot line described in a deed from Bethlehem Steel Company to Greif Brothers Cooperage Corporation dated February 16, 1966, and being recorded among the above mentioned land records in fiber 4592, folio 152. Thence binding reversely on the fifth through the second line of said deed the four following courses and distances viz;

20. South 62 degrees 55 minutes 56 seconds West 96.60 feet, thence;

21. South 77 degrees 58 minutes 26 seconds East 719.96 feet, thence;

22 553.02 feet, along the arc of a non tangential curve to the left with a radius of 684.32 feet being subtended by a chord of North 56 degrees 10 minutes 13 seconds East 538.09 feet to a point, thence;

23. North 32 degrees 57 minutes 26 seconds East 115.90 feet, to the southwesternmost corner of a plat entitled "Greys Yard Area" said plat being recorded among the fore mentioned land records in plat book 45, page 55. thence; binding on the southernmost or North 32 degrees 12 minutes 54 seconds East 1356.57 foot line of said plat;

24. North 31 degrees 59 minutes 50 seconds East 1357.62 feet, to intersect the western most right of way line of North Point Boulevard (A.K.A. Maryland Route 151) as shown on Maryland State Roads Commission Plats 3427 and 3428. Thence binding on said western right of way line the two following courses and distances viz;

25. South 27 degrees 08 minutes 35 seconds East 59.34 feet, thence;

26. South 27 degrees 08 minutes 35 seconds East 43.93 feet, thence; continuing binding on the western right of way as shown on Maryland State Road Commission Plats 17821, 17824, 17825, 18100, 18101, 18103, 42255 & 42256, the following twenty two courses and distances viz;

27. South 62 degrees 51 minutes 25 seconds West 29.85 feet, thence;

28. South 29 degrees 06 minutes 07 seconds East 41.11 feet, thence;

29. South 29 degrees 05 minutes 42 seconds East 38.63 feet, thence;

30. South 21 degrees 38 minutes 42 seconds East 134.69 feet, thence;

31. South 5 degrees 21 minutes 29 seconds West 185.85 feet, thence;

32. 180.17 feet along the arc of a tangential curve to the right, with a radius of 517.98 feet, and being subtended by a chord of South 17 degrees 03 minutes 39 seconds West 179.26 feet, thence;

33. South 25 degrees 01 minutes 02 seconds West 101.53 feet, thence;

34. 166.15 feet along the arc of a tangential curve to the left, with a radius of 405.00 feet, and being subtended by a chord of South 13 degrees 29 minutes 33 seconds West, 164.99 feet, thence;

35. South 4 degrees 33 minutes 05 seconds West 251.91 feet, thence;

36. South 37 degrees 05 minutes 23 seconds West 587.54 feet, thence;

37. South 20 degrees 45 minutes 45 seconds East 298.81 feet, thence;

38. North 41 degrees 24 minutes 33 seconds East 265.14 feet, thence;

39. South 45 degrees 39 minutes 21 seconds East 41.56 feet, thence;

40. South 1 degrees 50 minutes 23 seconds East 49.03 feet, thence;

41. South 44 degrees 37 minutes 34 seconds West 259.24 feet, thence;

42. South 20 degrees 34 minutes 48 seconds East 186.99 feet, thence;

43. North 68 degrees 03 minutes 13 seconds East 179.28 feet, thence;

44. South 21 degrees 33 minutes 37 seconds East 43.20 feet, thence; Sparrows Point Works (including exceptions)

45. South 68 degrees 26 minutes 23 seconds West 73.00 feet, thence;

46. 328.06 feet along the arc of a tangential curve to the left, with a radius of 280.00 feet, and being subtended by a chord of South 1 degrees 59 minutes 43 seconds Fast 309.61 feet, thence;

47. 42.41 feet along the arc of a tangential curve to the left, with a radius of 1225.92 feet and being subtended by a chord of South 36 degrees 33 minutes 05 seconds East 42.41 feet, to a point on the northwestern most corner of a plat entitled "Resubdivision Plat Of Chesapeake Specialty" said plat being recorded among the above mentioned land records in plat book 64, page 150. thence binding on the western and southernmost outlines of said plat the following seven courses and distances viz:

48. South 19 degrees 10 minutes 58 seconds East 3.59 feet, thence;

49. South 8 degrees 03 minutes 10 seconds East 160.37 feet, thence;

50. South 1 degrees 04 minutes 16 seconds East 123.57 feet, thence;

51. South 8 degrees 46 minutes 12 seconds West 235.78 feet, thence;

52. South 81 degrees 13 minutes 48 seconds East 85.05 feet, thence;

53. South 63 degrees 45 minutes 58 seconds East 489.07 feet, thence;

54. South 86 degrees 57 minutes 13 seconds East 33.98 feet, to intersect the westernmost right of way line of the above mentioned North Point Boulevard as shown on Maryland State Roads Commission Plat 17825. thence binding on the right of way line to three following courses and distances viz;

55. 163.81 feet along the arc of a tangential curve to the right with a radius of 1851.86 feet, and being subtended by a chord of South 5 degrees 34 minutes 50 seconds West 163.75 feet, thence;

56. South 8 degrees 06 minutes 53 seconds West 80.01 feet, thence;

57. South 81 degrees 53 minutes 07 seconds East 26.86 feet, to intersect the western right of way line as shown on the Maryland State Roads Commission Plats 3423, 3424, and 3425. thence, binding on said right of way the eight following courses and distances viz;

58. South 8 degrees 05 minutes 07 seconds West 81.16 feet, to a point at the end of the end of the fifth or North 69 degrees 28 minutes 52 seconds East, 1067.54 foot line described in a deed from Bethlehem Steel Corporation to CCC Industries, LLC., dated May 8, 2002 and recorded among the foresaid land records in liber 16412, folio 691. Thence binding reversely on said line in all;

59. South 69 degrees 13 minutes 33 seconds West 1288.39 feet, to a point at the end of the fourth or North 69 degrees 30 minutes East, 221.58 foot line described in Parcel two in a deed from The BOC Group to Eastern Products Inc., dated November 13, 1985 and being recorded in the above mentioned land records in liber 7036, folio 421. Thence binding reversely on third and second line of said parcel;

60. 386.48 feet along the arc of a non tangential curve to the left having a radius of 420.38 feet, and being subtended by a chord of South 24 degrees 35 minutes 14 seconds West 373.01 feet, to a rebar and cap found, thence;

61. South I degrees 46 minutes 16 seconds East 450.99 feet, thence binding reversely along the first line of the last mentioned Parcel;

62. North 88 degrees 13 minutes 44 seconds East 23.90 feet, to a point at the end of the sixth or North 1 degrees 29 minutes 45 seconds West, 310.00 foot line as described as Lot 2 in a deed from Alan I. Rodick and Andy L.Rodick to Wheeler Properties, LLC dated November 17, 1993, and being recorded in the fore mentioned land records in liber 12684, folio 357. Thence binding reversely on the sixth and fifth line of the last mentioned Lot two;

63. South 1 degrees 46 minutes 16 seconds East 310.00 feet, thence;

64. South 16 degrees 41 minutes 55 seconds West 75.76 feet, to a point, Thence binding on the fourth line of the last mentioned Lot two and the second line or North 1 degrees 29 minutes 45 seconds West, 374.00 foot line as described as Lot 1 in the last herein mentioned deed;

65. South 1 degrees 46 minutes 16 seconds East 390.01 feet, to intersect the northwestern right of way line as shown on the Maryland State Roads Commission Plats 3422 and 3423, thence; along the said right of way the following eighteen courses and distances viz;

66. South 87 degrees 39 minutes 17 seconds West 86.19 feet, thence;

67. South 87 degrees 36 minutes 46 seconds West 99.96 feet, thence;

68. South 86 degrees 56 minutes 12 seconds West 99.97 feet, thence;

69. South 85 degrees 42 minutes 04 seconds West 91.31 feet, thence;

70. South 83 degrees 46 minutes 23 seconds West 58.94 feet, thence;
71. South 81 degrees 12 minutes 59 seconds West 104.22 feet, thence;
72. South 76 degrees 55 minutes 31 seconds West 104.32 feet, thence;
73. South 71 degrees 37 minutes 55 seconds West 104.58 feet, thence;
74. South 65 degrees 27 minutes 49 seconds West 104.82 feet, thence;
75. South 58 degrees 18 minutes 01 seconds West 104.88 feet, thence;
76. South 51 degrees 20 minutes 16 seconds West 104.76 feet, thence;
77. South 45 degrees 28 minutes 47 seconds West 104.49 feet, thence;
78. South 40 degrees 32 minutes 38 seconds West 104.25 feet, thence;
79. South 37 degrees 00 minutes 24 seconds West 72.97 feet, thence;
80. South 34 degrees 56 minutes 53 seconds West 60.23 feet, thence;
81. South 33 degrees 20 minutes 49 seconds West 72.38 feet, thence;
82. South 31 degrees 55 minutes 03 seconds West 99.97 feet, thence;
83. South 31 degrees 10 minutes 03 seconds West 74.51 feet, thence along the Maryland State Road Commission Plats 44821 and 44820 the following twenty two courses and distances viz;
84. South 31 degrees 04 minutes 31 seconds West 776.15 feet, thence;
85. South 31 degrees 04 minutes 31 seconds West 149.94 feet, thence;
86. South 31 degrees 04 minutes 23 seconds West 499.80 feet, thence;
87. South 30 degrees 44 minutes 52 seconds West 69.97 feet, thence;
88. South 30 degrees 31 minutes 49 seconds West 63.07 feet, thence;
89. South 27 degrees 35 minutes 58 seconds West 69.97 feet, thence;
90. South 25 degrees 08 minutes 08 seconds West 103.20 feet, thence;
91. South 22 degrees 09 minutes 23 seconds West 41.07 feet, thence;
92. North 39 degrees 33 minutes 28 seconds West 86.28 feet, thence;
93. South 22 degrees 32 minutes 45 seconds West 26.95 feet, thence;
94. South 39 degrees 03 minutes 41 seconds East 88.11 feet, thence;
95. South 16 degrees 25 minutes 08 seconds West 88.65 feet, thence;
96. South 43 degrees 45 minutes 03 seconds West 75.82 feet, thence;
97. South 83 degrees 20 minutes 37 seconds West 60.98 feet, thence;
98. South 83 degrees 20 minutes 38 seconds West 74.97 feet, thence;
99. South 83 degrees 20 minutes 37 seconds West 74.97 feet, thence;
100. South 6 degrees 39 minutes 22 seconds East 39.98 feet, thence;
101. North 83 degrees 20 minutes 38 seconds East 74.97 feet, thence;
102. North 83 degrees 20 minutes 37 seconds East 74.97 feet, thence;
103. North 83 degrees 20 minutes 38 seconds East 53.98 feet, thence;
104. South 42 degrees 49 minutes 01 seconds East 48.41 feet, thence; along the state right of way as shown

on Maryland State Roads Commission Plats 3419, 3418 and 3417, the following twenty nine courses and distances

105. South 4 degrees 8 minutes 13 seconds West 24.39 feet, thence;

106. South 2 degrees 22 minutes 28 seconds West 104.41 feet, thence;

107. South 1 degrees 17 minutes 24 seconds East 77.98 feet, thence;

108. South 3 degrees 33 minutes 04 seconds East 158.66 feet, thence;

109. South 4 degrees 13 minutes 54 seconds East 753.07 feet, thence;

110. South 3 degrees 57 minutes 26 seconds East 70.77 feet, thence;

111. South 5 degrees 23 minutes 14 seconds West 14.87 feet, thence;

112. South 0 degrees 23 minutes 20 seconds West 56.21 feet, thence;

113. South 0 degrees 23 minutes 20 seconds West 65.97 feet, thence;

114. South 5 degrees 20 minutes 45 seconds West 94.39 feet, thence;

115. South 11 degrees 26 minutes 43 seconds West 94.59 feet, thence;

116. South 18 degrees 36 minutes 17 seconds West 89.35 feet, thence;

117. South 25 degrees 50 minutes 30 seconds West 99.82 feet, thence;

118. South 31 degrees 19 minutes 19 seconds West 94.31 feet, thence;

119. South 35 degrees 16 minutes 43 seconds West 81.67 feet, thence;

120. South 34 degrees 29 minutes 49 seconds West 13.45 feet, thence;

121. South 37 degrees 41 minutes 56 seconds West 99.98 feet, thence;

122. South 38 degrees 38 minutes 42 seconds West 65.52 feet, thence;

123. South 38 degrees 45 minutes 31 seconds West 24.44 feet, thence;

124. South 83 degrees 45 minutes 31 seconds West 21.20 feet, thence;

125. South 38 degrees 45 minutes 31 seconds West 39.98 feet, thence;

126. South 6 degrees 14 minutes 29 seconds East 21.20 feet, thence;

127. South 38 degrees 45 minutes 31 seconds West 239.90 feet, thence;

128. South 38 degrees 45 minutes 31 seconds West 375.85 feet, thence;

129. South 81 degrees 54 minutes 41 seconds West 21.92 feet, thence;

130. South 38 degrees 45 minutes 31 seconds West 42.98 feet, thence;

131. South 6 degrees 14 minutes 29 seconds East 21.20 feet, thence;

132. South 38 degrees 45 minutes 31 seconds West 411.78 feet, thence;

133. 352.22 feet along the arc of a curve to the right having a radius of 448.22 and being subtended by a chord of South 61 degrees 16 minutes 49 seconds West 342.22 feet; thence

134. South 83 degrees 47 minutes 31 seconds West 66.46 feet to a point at the end thereof, thence crossing said right of way to the south eastern side as shown on the above mentioned plat no. 3417;

135. South 6 degrees 12 minutes 29 seconds East 99.96 feet, thence binding on the southeastern side of said right of way in a northerly direction along Maryland State Roads Commission Plats 3417, 3418 and 3419, the following thirty four courses and distances viz;

136. North 83 degrees 47 minutes 31 seconds East 66.46 feet, thence

137. 430.76 feet along the arc of a curve to the left having a radius of 548.18 and being subtended by a chord of North 61 degrees 16 minutes 49 seconds East 419.77 feet, thence;

138. North 38 degrees 45 minutes 31 seconds East 403.80 feet, thence;

139. North 82 degrees 40 minutes 40 seconds East 37.47 feet, thence;

140. North 38 degrees 45 minutes 31 seconds East 40.98 feet, thence;

141. North 1 degrees 21 minutes 12 seconds East 42.78 feet, thence;

142. North 38 degrees 45 minutes 31 seconds East 355.85 feet, thence;

143. North 38 degrees 45 minutes 31 seconds East 223.91 feet, thence;

144. North 83 degrees 45 minutes 31 seconds East 36.75 feet, thence;

145. North 38 degrees 45 minutes 31 seconds East 39.98 feet, thence;

146. North 3 degrees 07 minutes 09 seconds West 38.93 feet, thence;

147. North 38 degrees 40 minutes 00 seconds East 80.97 feet, thence;

148. North 37 degrees 41 minutes 56 seconds East 99.98 feet, thence;

149. North 34 degrees 29 minutes 49 seconds East 13.45 feet, thence;

150. North 35 degrees 22 minutes 00 seconds East 90.73 feet, thence;

151. North 31 degrees 14 minutes 46 seconds East 104.77 feet, thence;

152. North 26 degrees 31 minutes 30 seconds East 97.69 feet, thence;

153. North 67 degrees 01 minutes 01 seconds East 44.53 feet, thence;

154. North 19 degrees 04 minutes 26 seconds East 42.33 feet, thence;

155. North 30 degrees 51 minutes 06 seconds West 43.08 feet, thence;

156. North 15 degrees 17 minutes 19 seconds East 12.62 feet, thence;

157. North 11 degrees 33 minutes 24 seconds East 105.05 feet, thence;

158. North 5 degrees 28 minutes 03 seconds East 104.85 feet, thence;

159. North 2 degrees 23 minutes 51 seconds East 73.38 feet, thence;

160. North 2 degrees 07 minutes 33 seconds West 62.45 feet, thence;

161. North 5 degrees 23 minutes 14 seconds East 14.87 feet, thence;

162. North 3 degrees 57 minutes 26 seconds West 70.77 feet, thence;

163. North 4 degrees 20 minutes 56 seconds West 125.95 feet, thence;

164. North 42 degrees 42 minutes 04 seconds East 42.43 feet, thence;

165. North 4 degrees 12 minutes 29 seconds West 39.98 feet, thence;

166. North 52 degrees 07 minutes 07 seconds West 41.76 feet, thence;

167. North 4 degrees 12 minutes 29 seconds West 530.16 feet, thence;

168. North 3 degrees 33 minutes 04 seconds West 158.66 feet, thence;

169. North 1 degrees 12 minutes 09 seconds West 70.82 feet, thence continuing binding on said

southeastern right of way as shown on Maryland State Roads Commission Plats 44821 and 44822 the following courses and distances viz;

170. North 2 degrees 04 minutes 22 seconds East 94.89 feet, thence;

171. North 7 degrees 06 minutes 40 seconds East 95.41 feet, thence;

172. North 12 degrees 48 minutes 16 seconds East 68.81 feet, thence;

173. South 51 degrees 40 minutes 23 seconds East 83.37 feet, thence;

174. North 13 degrees 43 minutes 39 seconds East 26.98 feet, thence;

175. North 49 degrees 20 minutes 00 seconds West 83.55 feet, thence;

176. North 18 degrees 55 minutes 53 seconds East 42.39 feet, thence;

177. North 21 degrees 36 minutes 33 seconds East 47.04 feet, thence;

178. North 25 degrees 06 minutes 58 seconds East 96.26 feet, thence;

179. North 27 degrees 26 minutes 03 seconds East 63.56 feet, thence;

180. North 30 degrees 31 minutes 50 seconds East 63.07 feet, thence;

181. North 30 degrees 44 minutes 52 seconds East 69.97 feet, thence;

182. North 31 degrees 04 minutes 23 seconds East 499.80 feet, thence;

183. North 31 degrees 04 minutes 31 seconds East 149.94 feet, thence;

184. North 31 degrees 04 minutes 31 seconds East 776.15 feet, thence;

185. North 31 degrees 10 minutes 03 seconds East 74.51 feet, thence;

186. North 31 degrees 55 minutes 03 seconds East 99.97 feet, thence;

187. North 33 degrees 20 minutes 49 seconds East 72.38 feet, thence;

188. North 35 degrees 11 minutes 00 seconds East 54.45 feet, thence;

189. North 37 degrees 04 minutes 15 seconds East 65.95 feet, thence;

190. North 40 degrees 27 minutes 52 seconds East 94.22 feet, thence;

191. North 45 degrees 18 minutes 51 seconds East 94.47 feet, thence;

192. North 51 degrees 11 minutes 02 seconds East 94.74 feet, thence continuing binding along the southeastern side of said right of way as shown on Maryland State Roads Commission Plats 3422, in part;

193. North 58 degrees 16 minutes 29 seconds East 94.86 feet, thence;

194. North 65 degrees 35 minutes 15 seconds East 94.80 feet, thence;

195. North 71 degrees 48 minutes 02 seconds East 94.56 feet, thence;

196. North 77 degrees 02 minutes 46 seconds East 94.29 feet, thence;

197. North 81 degrees 13 minutes 56 seconds East 103.20 feet, to a pipe found at the intersection of Maryland route 151 and the western 145' line of Lot 4 as shown on a plat entitled "Plat of Lots For Sale by Edgar Snavely" and being recorded in the first herein mentioned land records in plat book 2, page 234. thence; binding on the westernmost outline of lot 4;

198. South 1 degrees 42 minutes 19 seconds Fast 152.06 feet, to the south side of a 12' alley as shown on the fore mentioned plat. Thence binding in part, on the south side of said alley and on the second

or South 86 and three quarter degrees East, 139 foot line of a deed from Penn Mary Steel Company to Bethlehem Steel Company, dated August 1, 1918, and being recorded among the first herein mentioned land records in liber 507, folio 1, thence;

199. North 88 degrees 17 minutes 41 seconds East 125.50 feet, to the beginning of the third or South 10 degrees East 320 foot line of the above mentioned deed. Thence binding on said third, fourth and fifth lines of said deed;

200. South 14 degrees 57 minutes 19 seconds East 320.00 feet, thence;

201. South 35 degrees 12 minutes 19 seconds East 240.00 feet, thence;

202 South 45 degrees 57 minutes 19 seconds East 140.11 feet, to intersect the waters of Jones Creek, formerly known as Old Road Bay. Thence binding on or near the mean high water of said creek the following sixty two courses and distances viz;

203. South 85 degrees 24 minutes 49 seconds West 79.12 feet, thence;

204. South 28 degrees 41 minutes 26 seconds East 194.10 feet, thence;

205. South 85 degrees 11 minutes 30 seconds East 158.32 feet, thence;

206. South 15 degrees 27 minutes 30 seconds East 221.43 feet, thence;

207. South 4 degrees 14 minutes 00 seconds East 142.86 feet, thence;

208. South 62 degrees 02 minutes 17 seconds West 301.58 feet, thence;

209. South 88 degrees 09 minutes 08 seconds West 249.52 feet, thence;

210. South 89 degrees 28 minutes 59 seconds West 281.05 feet, thence;

211. South 16 degrees 20 minutes 20 seconds West 242.77 feet, thence;

212. South 4 degrees 10 minutes 10 seconds East 204.46 feet, thence;

213. South 54 degrees 33 minutes 48 seconds East 232.91 feet, thence;

214. South 74 degrees 57 minutes 30 seconds East 64.55 feet, thence;

215. South 86 degrees 33 minutes 02 seconds East 22.44 feet, thence;

216. South 50 degrees 49 minutes 00 seconds East 23.81 feet, thence;

217. South 72 degrees 01 minutes 10 seconds East 36.50 feet, thence;

218. South 22 degrees 22 minutes 29 seconds West 60.40 feet, thence;

219. South 74 degrees 06 minutes 33 seconds West 25.12 feet, thence;

220. North 88 degrees 09 minutes 52 seconds West 64.42 feet, thence;

221. South 44 degrees 25 minutes 58 seconds West 181.65 feet, thence;

222. South 40 degrees 35 minutes 13 seconds West 237.84 feet, thence;

223. South 22 degrees 1 minutes 52 seconds West 58.33 feet, thence;

224. South 36 degrees 20 minutes 19 seconds West 106.42 feet, thence;

225. South 21 degrees 18 minutes 56 seconds West 136.72 feet, thence;

226. South 5 degrees 40 minutes 11 seconds East 634.96 feet, thence;

227. South 34 degrees 48 minutes 49 seconds East 154.64 feet, thence;

228. South 16 degrees 17 minutes 08 seconds West 177.84 feet, thence;

229. South 14 degrees 16 minutes 30 seconds East 441.87 feet, thence;
230. South 76 degrees 57 minutes 00 seconds East 398.66 feet, thence;
231. South 20 degrees 30 minutes 49 seconds East 154.73 feet, thence;
232. South 13 degrees 04 minutes 08 seconds East 179.58 feet, thence;
233. South 57 degrees 32 minutes 42 seconds East 137.35 feet, thence;
234. South 58 degrees 03 minutes 41 seconds West 320.60 feet, thence;
235. South 21 degrees 31 minutes 37 seconds West 153.07 feet, thence;
236. South 41 degrees 24 minutes 01 seconds West 362.98 feet, thence;
237. South 21 degrees 29 minutes 36 seconds East 352.67 feet, thence;
238. South 63 degrees 40 minutes 03 seconds East 349.01 feet, thence;
239. South 3 degrees 37 minutes 14 seconds East 71.99 feet, thence;
240. South 55 degrees 40 minutes 11 seconds West 203.89 feet, thence;
241. South 37 degrees 41 minutes 33 seconds West 89.70 feet, thence;
242. South 19 degrees 47 minutes 48 seconds East 205.37 feet, thence;
243. South 54 degrees 21 minutes 20 seconds West 239.43 feet, thence;
244. South 4 degrees 04 minutes 18 seconds East 42.97 feet, thence;
245. North 83 degrees 32 minutes 20 seconds East 154.71 feet, thence;
246. South 6 degrees 19 minutes 07 seconds East 624.77 feet, thence;
247. South 5 degrees 54 minutes 34 seconds East 152.82 feet, thence;
248. South 5 degrees 59 minutes 10 seconds East 70.08 feet, thence;
249. South 6 degrees 23 minutes 00 seconds East 869.71 feet, thence;
250. South 82 degrees 51 minutes 21 seconds West 19.53 feet, thence;
251. South 1 degrees 13 minutes 38 seconds West 49.37 feet, thence;
252. South 11 degrees 44 minutes 30 seconds West 65.67 feet, thence;
253. South 23 degrees 52 minutes 05 seconds West 95.42 feet, thence;
254. South 36 degrees 06 minutes 17 seconds West 109.48 feet, thence;
255. South 7 degrees 36 minutes 26 seconds East 113.40 feet, thence;
256. North 82 degrees 12 minutes 02 seconds East 87.34 feet, thence;
257. South 5 degrees 56 minutes 56 seconds East 20.53 feet, thence;
258. South 83 degrees 06 minutes 19 seconds West 85.94 feet, thence;
259. South 10 degrees 01 minutes 46 seconds East 103.99 feet, thence;
260. South 0 degrees 35 minutes 12 seconds East 85.76 feet, thence;
261. South 37 degrees 26 minutes 07 seconds West 105.72 feet, thence;
262. South 5 degrees 03 minutes 17 seconds East 620.53 feet, thence;
263. South 7 degrees 05 minutes 40 seconds East 467.55 feet, thence;

264. South 8 degrees 19 minutes 17 seconds East 382.45 feet, thence;

265. South 4 degrees 55 minutes 26 seconds East 125.49 feet, to the waters of the Patapsco River, thence binding on or near the mean high water the following forty seven courses and distances viz;

266. South 60 degrees 46 minutes 44 seconds West 68.77 feet, thence;

267. North 38 degrees 32 minutes 18 seconds West 177.25 feet, thence;

268. North 23 degrees 33 minutes 10 seconds West 633.35 feet, thence;

269. South 89 degrees 09 minutes 15 seconds West 549.70 feet, thence;

270. North 88 degrees 19 minutes 51 seconds West 215.45 feet, thence;

271. North 49 degrees 30 minutes 52 seconds West 129.32 feet, thence;

272. South 56 degrees 13 minutes 11 seconds West 94.06 feet, thence;

273. South 81 degrees 42 minutes 57 seconds West 107.39 feet, thence;

274. South 43 degrees 50 minutes 16 seconds West 141.48 feet, thence;

275. North 87 degrees 24 minutes 20 seconds West 67.01 feet, thence;

276. South 86 degrees 40 minutes 32 seconds West 473.14 feet, thence;

277. South 80 degrees 45 minutes 02 seconds West 206.85 feet, thence;

278. North 84 degrees 13 minutes 11 seconds West 130.54 feet, thence;

279. South 80 degrees 34 minutes 29 seconds West 533.59 feet, thence;

280. South 83 degrees 59 minutes 57 seconds West 537.82 feet, thence;

281. South 80 degrees 04 minutes 48 seconds West 433.53 feet, thence;

282. South 87 degrees 38 minutes 09 seconds West 501.79 feet, thence;

283. South 79 degrees 25 minutes 18 seconds West 446.66 feet, thence;

284. South 88 degrees 55 minutes 23 seconds West 329.85 feet, thence;

285. South 74 degrees 26 minutes 46 seconds West 312.43 feet, thence;

286. South 80 degrees 59 minutes 05 seconds West 254.73 feet, thence;

287. South 2 degrees 59 minutes 10 seconds East 110.43 feet, thence;

288. South 6 degrees 03 minutes 08 seconds East 327.76 *feet,* thence;

289. South 5 degrees 44 minutes 08 seconds East 295.12 feet, thence;

290. South 6 degrees 01 minutes 15 seconds East 389.92 feet, thence;

291. South 84 degrees 07 minutes 01 seconds West 82.73 feet, thence;

292. North 5 degrees 58 minutes 19 seconds West 449.73 feet, thence;

293. North 5 degrees 59 minutes 30 seconds West 234.80 feet, thence;

294. North 5 degrees 43 minutes 02 seconds West 331.02 feet, thence;

295. North 10 degrees 20 minutes 05 seconds West 130.65 feet, thence;

296. North 74 degrees 37 minutes 51 seconds West 38.38 feet, thence;

297. North 9 degrees 07 minutes 38 seconds West 122.48 feet, thence;

298. North 19 degrees 09 minutes 44 seconds East 493.92 feet, thence;
299. North 20 degrees 31 minutes 10 seconds East 475.47 feet, thence;
300. North 2 degrees 05 minutes 12 seconds East 7 9 3.41 feet, thence;
301. North 21 degrees 05 minutes 18 seconds East 109.77 feet, thence;
302. North 82 degrees 38 minutes 54 seconds East 489.17 feet, thence;
303. North 57 degrees 54 minutes 23 seconds East 481.21 feet, thence;
304. North 59 degrees 32 minutes 31 seconds East 492.45 feet, thence;
305. North 67 degrees 32 minutes 52 seconds East 35.83 feet, thence;
306. North 6 degrees 15 minutes 30 seconds West 353.57 feet, thence;
307. South 83 degrees 41 minutes 51 seconds West 526.98 feet, thence;
308. South 83 degrees 48 minutes 19 seconds West 490.94 feet, thence;
309. South 83 degrees 49 minutes 42 seconds West 629.41 feet, thence;
310. South 83 degrees 52 minutes 51 seconds West 552.70 feet, thence;
311. South 46 degrees 34 minutes 36 seconds West 128.57 feet, thence;
312. South 5 degrees 56 minutes 42 seconds East 698.25 feet, thence;
313. South 84 degrees 27 minutes 32 seconds West 98.16 feet, thence;
314. North 6 degrees 07 minutes 52 seconds West 702.46 feet, thence;
315. South 84 degrees 13 minutes 45 seconds West 112.50 feet, thence;
316. South 19 degrees 16 minutes 02 seconds West 151.52 feet, thence;
317. South **1** degrees 22 minutes 37 seconds East 184.90 feet, thence;
318. South 45 degrees 15 minutes 40 seconds West 207.64 feet, thence;
319. South 5 degrees 52 minutes 26 seconds East 187.62 feet, thence;
320. South 70 degrees 13 minutes 19 seconds West 176.81 feet, thence;
321. South 13 degrees 40 minutes 51 seconds West 69.15 feet, thence;
322. North 84 degrees 49 minutes 39 seconds East 200.71 feet, thence;
323. South 66 degrees 14 minutes 46 seconds East 28.35 feet, thence;
324. South 30 degrees 56 minutes 12 seconds West 69.97 feet, thence;
325. South 7 degrees 39 minutes 34 seconds East 408.96 feet, thence;
326. South 5 degrees 14 minutes 08 seconds East 614.20 feet, thence;
327. South 3 degrees 47 minutes 11 seconds East 499.84 feet, thence;
328. South 1 degrees 08 minutes 39 seconds West 177.24 feet, thence;
329. South 24 degrees 13 minutes 21 seconds West 148.81 feet, thence;
330. South 9 degrees 25 minutes 17 seconds West 243.27 feet, thence;
331. South 2 degrees 25 minutes 07 seconds East 152.16 feet, thence;
332. South 24 degrees 00 minutes 17 seconds West 68.55 feet, thence;

333. North 78 degrees 16 minutes 28 seconds West 220.73 feet, thence;

334. South 68 degrees 30 minutes 29 seconds West 400.41 feet, thence;

335. South 77 degrees 05 minutes 35 seconds West 155.03 feet, thence;

336. South 82 degrees 20 minutes 52 seconds West 223.76 feet, thence;

337. North 89 degrees 30 minutes 07 seconds West 151.12 feet, thence;

338. North 70 degrees 33 minutes 07 seconds West 347.62 feet, thence;

339. South 86 degrees 38 minutes 05 seconds West 146.47 feet, thence;

340. North 72 degrees 21 minutes 24 seconds West 179.89 feet, thence;

341. South 55 degrees 31 minutes 41 seconds West 117.63 feet, thence;

342. South 4 degrees 40 minutes 04 seconds East 481.32 feet, thence;

343. South 55 degrees 03 minutes 42 seconds West 65.14 feet, thence;

344. North 80 degrees 53 minutes 09 seconds West 393.22 feet, thence;

345. North 76 degrees 44 minutes 24 seconds West 362.85 feet, thence;

346. North 82 degrees 15 minutes 34 seconds West 184.08 feet, thence;

347. North 53 degrees 23 minutes 30 seconds West 71.11 feet, to the waters of sear Creek. Thence, binding on or near the mean high water of said creek the following forty five courses and distances viz;

348. North 33 degrees 15 minutes 20 seconds West 447.13 feet, thence;

349. North 30 degrees 53 minutes 03 seconds West 387.85 feet, thence;

350. North 33 degrees 20 minutes 39 seconds West 397.46 feet, thence;

351. North 34 degrees 27 minutes 52 seconds West 276.26 feet, thence;

352. North 6 degrees 14 minutes 30 seconds West 179.47 feet, thence;

353. North 11 degrees 37 minutes 54 seconds East 134.67 feet, thence;

354. North 31 degrees 21 minutes 54 seconds East 140.83 feet, thence;

355. North 58 degrees 46 minutes 00 seconds East 118.18 feet, thence;

356. North 75 degrees 26 minutes 26 seconds East 538.47 feet, thence;

357. North 13 degrees 04 minutes 09 seconds West 226.24 feet, thence;

358. North 81 degrees 47 minutes 08 seconds West 181.95 feet, thence;

359. South 81 degrees 52 minutes 35 seconds West 381.60 feet, thence;

360. North 81 degrees 22 minutes 21 seconds West 203.93 feet, thence;

361. North 89 degrees 34 minutes 14 seconds West 244.85 feet, thence;

362. North 71 degrees 34 minutes 18 seconds West 211.32 feet, thence;

363. North 28 degrees 03 minutes 19 seconds West 176.27 feet, thence;

364. North 1 degrees 27 minutes 17 seconds East 370.09 feet, thence;

365. North 9 degrees 27 minutes 17 seconds West 256.47 feet, thence;

366. North 18 degrees 38 minutes 54 seconds West 187.57 feet, thence;

367. North 3 degrees 32 minutes 14 seconds West 120.47 feet, thence;

368. North 32 degrees 44 minutes 56 seconds East 37.97 feet, thence;

369. North 82 degrees 53 minutes 09 seconds East 514.01 feet, thence;

370. North 36 degrees 31 minutes 20 seconds East 71.18 feet, thence;

371. North 3 degrees 03 minutes 35 seconds East 175.26 feet, thence;

372. North 44 degrees 31 minutes 30 seconds East 51.24 feet, thence;

373. North 12 degrees 02 minutes 22 seconds West 11.26 feet, thence;

374. North 5 degrees 16 minutes 21 seconds West 73.64 feet, thence;

375. North 83 degrees 46 minutes 21 seconds East 375.94 feet, thence;

376. North 83 degrees 55 minutes 34 seconds East 435.20 feet, thence;

377. North 83 degrees 46 minutes 44 seconds East 640.97 feet, thence;

378. North 32 degrees 01 minutes 05 seconds East 8.10 feet, thence;

379. North 5 degrees 42 minutes 04 seconds West 141.28 feet, thence;

380. North 15 degrees 18 minutes 36 seconds West 11.73 feet, thence;

381. North 66 degrees 36 minutes 50 seconds West 48.37 feet, thence;

382. South 85 degrees 53 minutes 39 seconds West 259.75 feet, thence;

383. South 5 degrees 58 minutes 36 seconds East 17.70 feet, thence;

384. South 83 degrees 38 minutes 52 seconds West 31.01 feet, thence;

385. North 6 degrees 04 minutes 29 seconds West 29.98 feet, thence;

386. South 88 degrees 00 minutes 31 seconds West 212.71 feet, thence;

387. North 30 degrees 30 minutes 48 seconds East 29.15 feet, thence;

388. North 70 degrees 02 minutes 55 seconds East 35.33 feet, thence;

389. North 89 degrees 23 minutes 03 seconds East 106.53 feet, thence;

390. North 83 degrees 16 minutes 10 seconds East 422.26 feet, thence;

391. North 27 degrees 19 minutes 55 seconds East 41.72 feet, thence;

392. North 14 degrees 08 minutes 13 seconds West 9.20 feet, to intersect a curve designated as 'C5' on a plat entitled "Subdivision Plat Of The Property Of Bethlehem Steel Corporation, Sparrows Point Plant" said plat being recorded among the first herein mentioned land records in plat book 63, page 87. Thence binding on the eastern most outline of said plat the following fifty courses and distances viz;

393. 28.60 feet along the arc of a non-tangential curve to the left having a radius of 30.00 and being subtended by a chord of North 54 degrees 0 minutes 04 seconds East 27.53 feet, thence;

394. South 66 degrees 43 minutes 39 seconds East 26.23 feet, thence;

395. South 84 degrees 48 minutes 42 seconds East 46.80 feet, thence;

396. North 83 degrees 20 minutes 59 seconds East 98.94 feet, thence;

397. North 73 degrees 58 minutes 27 seconds East 59.23 feet, thence;

398. North 67 degrees 56 minutes 44 seconds East 86.38 feet, thence;

399. North 32 degrees 48 minutes 15 seconds East 39.07 feet, thence;

400. North 26 degrees 39 minutes 47 seconds East 233.33 feet, thence; 401.160.61 feet along the arc of a tangential curve to the left having a radius of 275.00 and being subtended by a chord of North 9 degrees 55 minutes 52 seconds East 158.34 feet, thence;

402. North 6 degrees 48 minutes 00 seconds West 520.75 feet, thence;

403. North 31 degrees 33 minutes 36 seconds East 58.46 feet, thence;

404. North 18 degrees 10 minutes 45 seconds West 91.11 feet, thence;

405. North 33 degrees 19 minutes 36 seconds West 102.03 feet, thence;

406. North 6 degrees 52 minutes 58 seconds West 696.11 feet, thence;

407. North 9 degrees 31 minutes 51 seconds West 186.51 feet, thence;

408. North 6 degrees 10 minutes 44 seconds West 85.29 feet, thence;

409. North 31 degrees 44 minutes 08 seconds East 4.19 feet, thence;

410. North 31 degrees 44 minutes 26 seconds East 19.89 feet, thence;

411. North 41 degrees 20 minutes 11 seconds East 32.69 feet, thence;

412. North 59 degrees 11 minutes 10 seconds East 34.89 feet, thence;

413. North 68 degrees 29 minutes 43 seconds East 27.50 feet, thence;

414. North 76 degrees 49 minutes 33 seconds East 58.47 feet, thence;

415. 91.84 feet along the arc of a tangential curve to the left having a radius of 100.00 and being subtended by a chord of North 50 degrees 30 minutes 53 seconds East 88.65 feet, thence;

416 North 24 degrees 12 minutes 19 seconds East 77.14 feet, thence;

417. 94.51 feet along the arc of a tangential curve to the left having a radius of 185.00 and being subtended by a chord of North 9 degrees 31 minutes 07 seconds East 93.49 feet, thence;

418. North 5 degrees 07 minutes 01 seconds West 137.67 feet, thence;

419. South 88 degrees 06 minutes 04 seconds West 191.08 feet, thence;

420. South 83 degrees 42 minutes 05 seconds West 247.60 feet, thence;

421. South 54 degrees 50 minutes 06 seconds West 68.96 feet, thence;

422. South 83 degrees 18 minutes 32 seconds West 122.27 feet, thence;

423. North 5 degrees 52 minutes 17 seconds West 19.93 feet, thence;

424. South 82 degrees 58 minutes 34 seconds West 192.24 feet, thence;

425. North 8 degrees 30 minutes 23 seconds West 17.36 feet, thence;

426. South 81 degrees 27 minutes 35 seconds West 35.48 feet, thence;

427. North 5 degrees 55 minutes 38 seconds West 110.24 feet, thence;

428. North 12 degrees 17 minutes 09 seconds East 58.55 feet, thence;

429. North 7 degrees 09 minutes 51 seconds West 172.73 feet, thence;

430. 210.63 feet along the arc of a tangential curve to the right having a radius of 250.00 and being subtended by a chord of North 34 degrees 26 minutes 25 seconds East, 204.46 feet, thence;

431. North 58 degrees 34 minutes 40 seconds East 36.41 feet, thence;

432. North 85 degrees 31 minutes 29 seconds East 297.82 feet, thence;

433. North 29 degrees 31 minutes 21 seconds East 26.01 feet, thence;

434. North 83 degrees 15 minutes 30 seconds East 242.37 feet, thence;

435. North 6 degrees 01 minutes 58 seconds West 380.80 feet, thence;

436. South 82 degrees 10 minutes 39 seconds West 25.56 feet, thence;

437. North 6 degrees 09 minutes 14 seconds West 800.98 feet, thence;

438. North 15 degrees 32 minutes 03 seconds West 71.03 feet, thence;

439. North 8 degrees 37 minutes 31 seconds East 71.78 feet, thence;

440. North 54 degrees 28 minutes 58 seconds West 126.50 feet, thence;

441. North 52 degrees 13 minutes 14 seconds West 327.20 feet, thence;

442. North 54 degrees 56 minutes 21 seconds West 6.26 feet, to intersect the waters of Bear Creek, thence binding on or near the mean high water of said creek the following one hundred nine courses and distances viz;

443. North 68 degrees 25 minutes 32 seconds East 32.50 feet, thence;

444. South 62 degrees 57 minutes 47 seconds East 35.41 feet, thence;

445. North 82 degrees 42 minutes 50 seconds East 35.55 feet, thence;

446. North 36 degrees 54 minutes 04 seconds East 27.98 feet, thence;

447. South 89 degrees 42 minutes 45 seconds East 45.28 feet, thence;

448. North 80 degrees 30 minutes 02 seconds East 51.68 feet, thence;

449. North 36 degrees 29 minutes 06 seconds East 47.42 feet, thence;

450. North 20 degrees 59 minutes 00 seconds West 57.23 feet, thence;

451. North 48 degrees 39 minutes 35 seconds West 70.61 feet, thence;

452. North 29 degrees 59 minutes 34 seconds West 29.02 feet, thence;

453. North 42 degrees 25 minutes 33 seconds East 28.28 feet, thence;

454. South 75 degrees 56 minutes 41 seconds East 29.68 feet, thence;

455. South 52 degrees 54 minutes 31 seconds East 84.79 feet, thence;

456. North 88 degrees 24 minutes 14 seconds East 26.91 feet, thence;

457. North 42 degrees 43 minutes 45 seconds East 58.79 feet, thence;

458. North 53 degrees 39 minutes 21 seconds East 150.50 feet, thence;

459. North 61 degrees 41 minutes 45 seconds East 95.07 feet, thence;

460. North 70 degrees 31 minutes 35 seconds East 36.59 feet, thence;

461. North 86 degrees 47 minutes 38 seconds East 60.57 feet, thence;

462. North 78 degrees 40 minutes 48 seconds East 88.16 feet, thence;

463. North 79 degrees 14 minutes 00 seconds East 200.05 feet, thence;

464. North 70 degrees 12 minutes 58 seconds East 36.73 feet, thence;
465. North 56 degrees 12 minutes 54 seconds East 62.92 feet, thence;
466. North 6 degrees 15 minutes 00 seconds West 100.03 feet, thence;
467. North 43 degrees 06 minutes 04 seconds West 25.18 feet, thence;
468. North 20 degrees 48 minutes 35 seconds West 50.62 feet, thence;
469. North 6 degrees 36 minutes 58 seconds West 376.17 feet, thence;
470. North 47 degrees 33 minutes 54 seconds West 69.78 feet, thence;
471. North 19 degrees 17 minutes 37 seconds East 59.71 feet, thence;
472. North 2 degrees 02 minutes 04 seconds West 97.32 feet, thence;
473. North 15 degrees 13 minutes 55 seconds West 167.99 feet, thence;
474. North 27 degrees 19 minutes 52 seconds West 358.40 feet, thence;
475. North 35 degrees 31 minutes 37 seconds West 145.76 feet, thence;
476. North 26 degrees 09 minutes 17 seconds West 128.56 feet, thence;
477. North 15 degrees 46 minutes 26 seconds West 169.60 feet, thence;
478. North 24 degrees 59 minutes 19 seconds West 237.25 feet, thence;
479. North 1 degrees 07 minutes 06 seconds East 57.61 feet, thence;
480. North 20 degrees 31 minutes 20 seconds West 377.34 feet, thence;
481. North 5 degrees 44 minutes 21 seconds West 90.58 feet, thence;
482. North 63 degrees 33 minutes 54 seconds East 94.51 feet, thence;
483. North 5 degrees 21 minutes 15 seconds West 148.71 feet, thence;
484. North 24 degrees 22 minutes 03 seconds East 50.13 feet, thence;
485. North 5 degrees 05 minutes 10 seconds West 197.42 feet, thence;
486. North 9 degrees 57 minutes 38 seconds West 152.49 feet, thence;
487. North 22 degrees 08 minutes 16 seconds West 175.53 feet, thence;
488. North 20 degrees 05 minutes 56 seconds West 339.66 feet, thence;
489. North 42 degrees 55 minutes 41 seconds East 248.24 feet, thence;
490. North 23 degrees 56 minutes 52 seconds East 372.77 feet, thence;
491. North 16 degrees 46 minutes 02 seconds West 67.55 feet, thence;
492. North 48 degrees 09 minutes 45 seconds East 82.83 feet, thence;
493. South 77 degrees 38 minutes 05 seconds East 73.78 feet, thence;
494. North 68 degrees 09 minutes 16 seconds East 320.06 feet, thence;
495. North 23 degrees 42 minutes 51 seconds East 220.14 feet, thence;
496. North 12 degrees 00 minutes 19 seconds East 291.21 feet, thence;
497. North 31 degrees 19 minutes 50 seconds West 42.00 feet, thence;
498. North 11 degrees 13 minutes 53 seconds West 48.01 feet, thence;

499. North 59 degrees 42 minutes 02 seconds East 109.00 feet, thence;
500. North 18 degrees 13 minutes 37 seconds East 366.94 feet, thence;
501. North 35 degrees 41 minutes 40 seconds East 510.73 feet, thence;
502. North 55 degrees 44 minutes 12 seconds East 309.36 feet, thence;
503. North 37 degrees 47 minutes 09 seconds East 392.85 feet, thence;
504. North 13 degrees 10 minutes 26 seconds East 289.93 feet, thence;
505. North 13 degrees 34 minutes 19 seconds East 304.45 feet; thence;
506. North 27 degrees 44 minutes 12 seconds West 60.15 feet, thence;
507. North 78 degrees 38 minutes 42 seconds West 219.55 feet, thence;
508. North 50 degrees 22 minutes 08 seconds West 253.89 feet, thence;
509. North 6 degrees 49 minutes 32 seconds West 58.53 feet, thence;
510. North 28 degrees 26 minutes 39 seconds West 133.00 feet, thence;
511. North 18 degrees 07 minutes 36 seconds West 74.68 feet, thence;
512. North 26 degrees 31 minutes 59 seconds East 162.16 feet, thence;
513. North 57 degrees 44 minutes 42 seconds East 30.90 feet, thence;
514. North 32 degrees 50 minutes 01 seconds East 173.99 feet, thence;
515. North 7 degrees 54 minutes 34 seconds East 154.86 feet, thence;
516. North 23 degrees 57 minutes 29 seconds West 60.25 feet, thence;
517. North 62 degrees 53 minutes 55 seconds East 52.91 feet, thence;
518. South 42 degrees 24 minutes 37 seconds East 235.70 feet, thence;
519. South 73 degrees 08 minutes 03 seconds East 121.04 feet, thence;
520. South 89 degrees 02 minutes 32 seconds East 234.65 feet, thence;
521. North 85 degrees 34 minutes 30 seconds East 403.61 feet, thence;
522. North 68 degrees 50 minutes 11 seconds East 335.72 feet, thence;
523. North 48 degrees 09 minutes 33 seconds East 389.96 feet, thence;
524. North 75 degrees 22 minutes 38 seconds East 187.84 feet, thence;
525. South 75 degrees 41 minutes 28 seconds East 79.86 feet, thence;
526. North 43 degrees 15 minutes 49 seconds East 112.98 feet, thence;
527. South 81 degrees 30 minutes 36 seconds East 107.22 feet, thence;
528. South 32 degrees 18 minutes 06 seconds East 147.69 feet, thence;
529. South 82 degrees 56 minutes 12 seconds East 329.52 feet, thence;
530. North 60 degrees 13 minutes 51 seconds East 266.92 feet, thence;
531. South 71 degrees 20 minutes 10 seconds East 100.95 feet, thence;
532. South 61 degrees 33 minutes 14 seconds West 131.75 feet, thence;
533. South 50 degrees 00 minutes 20 seconds West 34.17 feet, thence;

534. South 46 degrees 36 minutes 16 seconds East 58.39 feet, thence;

535. South 52 degrees 02 minutes 00 seconds East 146.36 feet, thence;

536. North 89 degrees 15 minutes 22 seconds East 63.45 feet, thence;

537. South 89 degrees 48 minutes 43 seconds East 60.91 feet, thence;

538. South 0 degrees 33 minutes 48 seconds East 51.70 feet, thence;

539. North 87 degrees 25 minutes 33 seconds East 173.66 feet, thence;

540. South 65 degrees 22 minutes 09 seconds East 90.61 feet, thence;

541. South 81 degrees 13 minutes 45 seconds East 37.21 feet, thence;

542. South 18 degrees 59 minutes 26 seconds East 37.62 feet, thence;

543. South 89 degrees 32 minutes 31 seconds East 16.48 feet, thence;

544. South 65 degrees 32 minutes 36 seconds East 38.94 feet, thence;

545. South 29 degrees 34 minutes 14 seconds East 48.85 feet, thence;

546. North 73 degrees 11 minutes 55 seconds East 22.06 feet, thence;

547. South 65 degrees 31 minutes 41 seconds East 80.76 feet, thence;

548. South 64 degrees 43 minutes 04 seconds East 102.35 feet, thence;

549. South 52 degrees 58 minutes 59 seconds East 56.59 feet, thence;

550. South 67 degrees 37 minutes 26 seconds East 95.37 feet, thence;

551. South 54 degrees 36 minutes 06 seconds East 36.29 feet, thence;

552. South 57 degrees 51 minutes 27 seconds East 47.26 feet, to a point at the intersection of the water line and the eleventh line of first herein mentioned deed from Bethlehem Steel Corporation to Sparrows Point Country Club, Inc., thence binding reversely on said line;

553. South 14 degrees 11 minutes 14 seconds West 578.29 feet, to the end of the tenth line of the last mentioned deed, thence;

554. South 78 degrees 00 minutes 33 seconds East 1662.53 feet, to the end of the ninth line of the last mentioned deed, thence;

555. South 77 degrees 27 minutes 25 seconds East 596.64 feet, to the end of the eighth line of the last mentioned deed, thence;

556. North 43 degrees 16 minutes 32 seconds East 170.69 feet, to the end of the seventh line of the last mentioned deed, said point being on the west side of Greys Road, a private road, thence continuing on the west side of said road the following five courses and distances viz;

557. North 13 degrees 46 minutes 38 seconds West 743.28 feet, to the end of the sixth line of the last mentioned deed, thence;

558. North 4 degrees 01 minutes 38 seconds West 2071.26 feet, to the end of the fifth line of the last mentioned deed, thence;

559. 326.25 feet along the arc of a tangential curve to the light having a radius of 451.27 and being subtended by a chord of North 16 degrees 41 minutes 03 seconds East 319.19 feet, to the end of the forth line of the last mentioned deed, thence;

560. North 37 degrees 23 minutes 45 seconds East 981.87 feet, to the end of the third line of the last

mentioned deed, thence;

561. 122.41 feet along the arc of a tangential curve to the left having a radius of 624.78 and being subtended by a chord of North 31 degrees 47 minutes 00 seconds East 122.21 feet, to the end of the second line of the last mentioned deed, thence;

562. North 26 degrees 10 minutes 15 seconds East 600.46 feet, to the Point of Beginning.

LESS AND EXCEPTING DIETRICH INDUSTRIES as described in DB 7082, P 189:

Beginning for the same at a pipe found at the beginning of the forth line described in a deed from Bethlehem Steel Corporation to Dietrich Industries Inc., dated December 18, 1985, and being recorded in the land records of Baltimore County, Maryland in liber 7082, folio 189, thence binding on said line, referring all courses of this description to the Maryland Coordinate System (NM) 83/91), from the POINT OF BEGINNING so fixed;

1. South 16 degrees 44 minutes 45 seconds East 95.31 feet, to a pipe found at the beginning of the fifth line of the above mentioned deed, thence binding on the fifth through the twenty first lines the following seventeen courses and distances viz;
2. South 9 degrees 33 minutes 26 seconds East 141.37 feet, to a pipe found, thence;
3. South 0 degrees 57 minutes 07 seconds East 104.41 feet, thence;
4. South 8 degrees 50 minutes 32 seconds West 189.08 feet, to a pipe found, thence;
5. South 88 degrees 59 minutes 34 seconds West 68.50 feet, passing over a pipe found at 66.58' from the beginning thereof, thence;
6. South 45 degrees 07 minutes 52 seconds West 257.53 feet, thence;
7. North 45 degrees 18 minutes 20 seconds West 396.26 feet, thence;
8. South 49 degrees 44 minutes 23 seconds West 38.53 feet, thence;
9. South 59 degrees 30 minutes 12 seconds West 7.91 feet, thence;
10. South 87 degrees 04 minutes 07 seconds West 8.02 feet, thence;
11. North 89 degrees 48 minutes 23 seconds West 117.59 feet, thence;
12. South 89 degrees 44 minutes 07 seconds West 209.62 feet, thence;
13. 71.85 feet along the arc of a tangential curve to the left having a radius of 102.64 and being subtended by a chord of South 69 degrees 40 minutes 46 seconds West 70.40 feet, thence;
14. South 49 degrees 37 minutes 25 seconds West 117.03 feet, thence;
15. South 51 degrees 11 minutes 29 seconds West 46.13 feet, to the south side of Bethlehem Boulevard, a private road, thence binding on or near the south side of said road;
16. North 44 degrees 44 minutes 49 seconds East 513.17 feet, thence leaving said road and binding on the twentieth through the twenty second lines of the herein mentioned deed the three following courses and distances viz;
17. South 37 degrees 57 minutes 19 seconds East 47.82 feet, thence;
18. North 51 degrees 57 minutes 51 seconds East 81.06 feet, thence;
19. North 60 degrees 25 minutes 06 seconds East 421.81 feet, to the beginning of the twenty third line of the above mentioned deed. Thence binding on the twenty third and first lines of said deed,

in all;

20. North 66 degrees 17 minutes 32 seconds East 219.71 feet, to the beginning of the second line of said deed, thence binding on the second and third lines thereof;

21. South 35 degrees 54 minutes 52 seconds East 30.34 feet, thence;

22. South 26 degrees 14 minutes 45 seconds East 70.85 feet, to the Point of Beginning.

LESS AND EXCEPTING the following property described in Liber 4203 at folio 1

Beginning for the same at a pipe found at the beginning of the eighth line described in a deed from Bethlehem Steel Corporation to Albert Foreman, dated March 6, 1964, and being recorded in the land records of Baltimore County, Maryland in Liber 4283, folio 1, thence binding on said line, referring all courses of this description to the Maryland Coordinate System (NAD 83/91), from the POINT OF BEGINNING so fixed;

1. North 86 degrees 41 minutes 50 seconds East 625.33 feet, to the beginning of the first line of the above mentioned deed, thence binding on said line;

2. 113.98 feet along the arc of a tangential curve to the right having a radius of 426.85 and being subtended by a chord of South 85 degrees 39 minutes 11 seconds East 113.64 feet, to the beginning of the second line of the above mentioned deed, thence binding on the second through the seventh lines of said deed the following six courses and distances viz;

3. South 78 degrees 00 minutes 12 seconds East 710.19 feet, thence;

4. South 31 degrees 56 minutes 04 seconds West 262.83 feet, thence;

5. 332.90 feet along the arc of a tangential curve to the right having a radius of 357.50 and being subtended by a chord of South 58 degrees 36 minutes 38 seconds West 321.00 feet, to a pipe found, thence;

6. South 85 degrees 17 minutes 13 seconds West 324.06 feet, thence;

7. South 77 degrees 39 minutes 30 seconds West 150.00 feet, thence;

8. South 86 degrees 40 minutes 53 seconds West 360.00 feet, thence;

9. North 89 degrees 36 minutes 38 seconds West 125.26 feet, thence;

10. North 6 degrees 18 minutes 15 seconds West 592.71 feet, to the Point of Beginning.

LESS AND EXCEPTING the following, as described as DB. 5044, P. 414

Beginning for the same at the northwestern most corner of a parcel of land shown on Baltimore County Bureau of Land Acquisition Drawing No. RW 68-300-1, being more particularly described in a deed from Bethlehem Steel Corporation to Baltimore County, Maryland said deed being recorded in the land records of Baltimore County, Maryland in Liber 5044, folio 417. Thence binding on the outline of said parcel as described in the above mentioned deed, referring all courses of this description to the Maryland Coordinate System (NAD 83/91), from the POINT OF BEGINNING so fixed, the four following courses and distances viz;

1. North 56 degrees 54 minutes 19 seconds East 74.50 feet, thence;

2. South 33 degrees 05 minutes 41 seconds East 56.00 feet, thence;

3. South 56 degrees 54 minutes 19 seconds West 74.50 feet, thence;

North 33 degrees 05 minutes 41 seconds West 56.00 feet, to the Point of Beginning.

Exhibit 2

August 2013

Sparrows Point Former Coke Oven Area Interim Measures
Site Location Map

EnviroAnalytics Group

0 187.5 375 750 1,125 1,500 Feet

1 inch = 300 feet

Legend

COA IM Cells

Figure 1-1

Exhibit 3

Site Conceptual Cleanup Plan
Draft

Former RG Steel Facility

Prepared for:

Sparrows Point LLC
1430 Sparrows Point Boulevard
Sparrows Point Maryland 21219

May 22, 2014

EnviroAnalytics Group

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1 INTRODUCTION

1.1 General Information

This Site Conceptual Cleanup Plan (SCCP) was prepared by EnviroAnalytics Group on behalf of Sparrows Point LLC, the Seller (and current owner) of the approximately 3,100-acres of land on the historically industrial Sparrows Point Site (Site or Facility).

1.2 Purpose and Objective

The SCCP is intended to provide concepts for remediation, closure and pathway exclusion of applicable areas for the Site as may be defined in a Prospective Purchaser Agreement with the US EPA Region III (EPA) (Conceptual Cleanup Plan) and an Administrative Order on Consent and Covenant Not To Sue with the State of Maryland (MDE) as contemplated between HRP Sparrows Point, LLC (HRP) as the prospective purchaser (Purchaser) and the respective agencies. Summaries are included of past and current Site conditions and for prior environmental investigations including the identification of significant environmental conditions.

Guidance for future remediation work at the Site is outlined, including;

1) remaining obligations and corrective actions for the Site required under the Multi-Media Consent Decree between the EPA, MDE and Bethlehem Steel Corporation, which was entered in 1997 in the U.S. District Court for the District of Maryland, Case Nos. JFM-97-558 and JFM-97-559, as qualified by the RG Steel/SPLLC Sale Order and the Prospective Purchaser Agreement and,

2) obligations for parcels of land that are intended to be removed from the definition of Facility or Site under the Consent Decree and transferred to and subject to the process for obtaining closure (including financial assurance and public comment) in the contemplated Administrative Order on Consent to be entered into between the State and HRP.

The SCCP also outlines the objectives, approach, and methods to complete remediation and achieve ‘closure’ of environmental obligations of the Site as provided in Article 5 of the Purchase and Sale Agreement executed by and between Sparrows Point, LLC and HRP Sparrows Point, LLC on December 14, 2013, specifically including;

- A general investigation and remediation plan for the completion of Seller’s Environmental Obligations (the “Seller Remediation Plan”); and,
- The types, scope and nature of environmental controls and restrictions (including the geographical footprint thereof) which are mutually acceptable to both Seller and Purchaser.

1.3 Background Information

The Sparrows Point Site is located in Baltimore County, Maryland at the southeast corner of the Baltimore metropolitan area, approximately nine miles from the downtown area. The Site encompasses approximately 3,100 acres located on a peninsula situated on the Patapsco River near its confluence with the Chesapeake Bay physically positioned in the mouth of the heavily industrialized and urbanized Baltimore Harbor / Patapsco River region. A land connection to the northeast links the peninsula with the adjacent community of Edgemere.

From the late 1800s until 2012, the Site was used for the production and manufacturing of steel. Iron and steel production operations and processes at the Site included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steelmaking operations at the Facility ceased in fall 2012, and plans for the Site include demolition and redevelopment over the next several years.

The original topography of the peninsula was flat with elevations not exceeding 15 feet North American Vertical Datum 1988 (NAVD88). The peninsula has been drastically altered since the inception of the steel manufacturing activities. Creeks have been filled in and new land has been added to various areas of the Site by building up near-shore areas of the river.

Potential sources of releases to the environment from the Site were identified in a final RCRA Facility Assessment Phase II Report (RFA Report) prepared for EPA by A.T. Kearney dated August 12, 1993. The RFA Report provided an updated report for the Facility from an initial draft RFA Report prepared by PRC Environmental Management on April 12, 1988.

On October 10, 1997, the United States Environmental Protection (USEPA) and the Maryland Department of the Environment (MDE) filed a multimedia Consent Decree through the U.S District Court for the Court of Maryland seeking relief from alleged endangerment to public health, welfare, or the environment from contamination at and around the Sparrows Point Facility in Sparrows Point, Maryland. Pursuant to the requirements of the 1997 Consent Decree, Site-Wide Investigation activities and associated environmental assessments have been performed at the site focused on characterizing the nature and extent of releases to on-site areas of the Facility. Work has been completed to implement an investigation and screening process to evaluate potential source areas of releases to the environment and define if further action (or no further action) is necessary. Major submittals completed to date as part of the Site-Wide Investigation include:

- Description of Current Conditions, January 1998 (Rust 1998);
- Site-Wide Investigation Work Plan – Groundwater Study, June 2000 (CH2M Hill 2000);
- Site-Wide Investigation Groundwater Study Report, July 2001 (CH2M Hill 2001);
- Site-Wide Investigation Release Site Characterization Study, June 2002 (CH2M Hill 2002a);

- Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater From the Special Study Areas, International Steel Group, ISG Sparrows Point, Inc. Facility, Sparrows Point, Maryland, January 2005 (URS 2005a), revised 2007;
- CA725 Facility Investigation and Human Health Risk Evaluation (HHRE) Findings, ISG Sparrows Point, June 2005 (URS 2005b);
- Ecological Risk Assessment Strategy Document; ISG Sparrows Point Facility (URS 2006a);
- Final Ecological Risk Assessment Work Plan for On-Site Areas (URS 2007).
- Screening Level Ecological Risk Assessment For On-Site Areas Final (April 2009, URS)
- Supplemental Report County Lands Parcel 1B Ponds Final (May 2009, URS)
- Final Baseline Ecological Risk Assessment for On-Site Areas (BERA) Report (URS, October 7, 2011)

1.4 SCCP Organization

Section 2 of the SCCP presents information on the Facility setting, Section 3 presents information on the Site use and history, Section 4 presents environmental information associated with assessment and investigation work and operation of interim measures, Section 5 presents conceptual cleanup and response plans and Section 6 presents the compliance plan for the solid waste landfills.

Specific information is presented including a general approach for response actions to support renewal of the Site, approach for closure of regulatory obligations for the Site and area-specific response actions that are anticipated to satisfy identified environmental conditions. The SCCP addresses recognized environmental conditions identified during the all appropriate inquiry process undertaken by Weaver Boos Consultants on behalf of the Purchaser to the extent practicable based on currently available information. The compliance plan for the landfills includes actions to be undertaken to provide operational compliance, closure and post-closure care for the two on-site landfills.

2 FACILITY SETTING

2.1 Location and Surrounding Land Use

The Sparrows Point Site is located in Baltimore County, Maryland at the southeast corner of the Baltimore metropolitan area. The Site is approximately 3100 acres and occupies all of a peninsula bounded to the west by Bear Creek; to the south by the Patapsco River; and to the east by Jones Creek, Old Road Bay, and residential areas of the City of Edgemere. The Site is also bounded to the north by the Sparrows Point Country Club.

Zoning maps indicate that the Sparrows Point Site is zoned Manufacturing Heavy - Industrial, Major (MH-IM). Surrounding property zoning classifications include the following: Manufacturing Light (ML), Resource Conservation (RC), Density Residential (DR), Business Roadside (BR), Business Major (BM), Business Local (BL), and Residential Office (RO). The Sparrows Point Country Club is located north of the Sparrows Point Site on the other side of the Peninsula Expressway. Light industrial and commercial properties are located northeast of the Site and northwest of the Site on the other side of Bear Creek. Residential areas of Edgemere and Fort Howard are located northeast of the Site and east of the Site on the other side of Jones Creek and Old Road Bay. Residential areas of Dundalk are located northwest of the Site on the other side of Bear Creek.

2.2 Physiography, Topography and Surface Drainage

The Baltimore area is situated within the Atlantic Slope physiographic region which is further subdivided into the Piedmont Plateau and Coastal Plain provinces. The Sparrows Point Site is wholly located in the Coastal Plain Province. The Coastal Plain is the relatively low part of the Atlantic Slope and is bounded on the east by the edge of the Continental Shelf in the Atlantic Ocean and on the west by the Piedmont Plateau.

The topographic development of the Atlantic Slope region is directly related to the regional geology. Topographic elevations in the Coastal Plain are generally less than 300 feet above mean sea level (msl). The Coastal Plain is underlain by relatively soft, generally unindurated, easily eroded sediments of the Cretaceous, Tertiary, and Quaternary Systems. These Coastal Plain sediments are underlain by the crystalline Pre-Cambrian and early Paleozoic rocks which extend from the Piedmont Plateau.

The Sparrows Point Site is bordered by water on three sides with land connection predominantly to the north and northeast. The peninsula is bounded to the east by Old Road Bay and Jones Creek; to the south by the Patapsco River; and to the west by Bear Creek, all of which directly or indirectly drain to the Chesapeake Bay located southeast of the Site.

The current ground surface at the Sparrows Point Site is relatively flat. All major topographic features (such as buildings, landfills, and material stockpiles) are manmade. Throughout most of the peninsula, the elevation of the ground surface is between 0 and 20 feet mean sea level (msl). The average elevation is about 15 feet msl. In the southern portion of the Site, there are several

man- made landforms (raw and byproduct material stockpiles) that exceed 20 feet msl in elevation. Greys Landfill, located near the northwestern corner of the property, is approximately 110 feet msl in elevation at its highest point.

Surface water runoff is diverted and collected by a network of culverts, underground pipes, and drainage ditches within the Site. The stormwater is then discharged to Bear Creek, Jones Creek/Old Road Bay, and the Patapsco River. Prior to 1970, much of the stormwater from the northern part of the Site was discharged to Humphrey Creek and subsequently to Bear Creek. Between 1950 and 1970, the Tin Mill Canal was constructed within portions of Humphrey Creek which continued to receive stormwater from the northern part of the Site. Since about 1970, stormwater runoff from the northern part of the Site has discharged to the Tin Mill Canal, and then conveyed to the Humphrey Creek Wastewater Treatment Plant (HCWWTP) for treatment.

2.3 Fill Placement

Slag, a byproduct of iron- and steel-making, has been used as an on-site fill material since operations began at the Sparrows Point Facility. Prior evaluations have been completed to assess the extent of made land activities for the Site. A land plat, dated August 1916 and January 1917 was used as the basis for this land reclamation evaluation. In January 1917, the Site consisted of approximately 2166 acres of land. Humphrey Creek was a northeast trending embayment in the northern portion of the Site. It drained to Bear Creek and was reported to have contained fresh water. A tributary to Humphrey Creek called Blockhouse Cove extended well into the central part of the Site from the southern side of Humphrey Creek. Greys Creek, an embayment oriented east-southeast, was present to the north of Humphrey Creek. The Town of Sparrows Point was present in the south central portion of the Site.

By April 1938, steel manufacturing operations were well established, particularly on the eastern side of Sparrows Point. Blockhouse Cove had been completely reclaimed, and a bridge partially dammed the opening to Bear Creek. A significant portion of the southern end of the Site had been reclaimed. A small amount of land along the southern edge of the Site was reclaimed between the late 1930's and the late l 950's. The northeast end of Humphrey Creek, two small tributaries to Jones Creek, and some land north of the current Shipyard were also reclaimed by that time. By 1971, all of Humphrey Creek estuary had been reclaimed, and the Tin Mill Canal had been constructed within the slag fill. In addition, Greys Creek and an additional area along the southern boundary of the Site had been completely reclaimed. Currently, the surveyed acreage of the Site is 3100 acres.

2.4 Regional Geology

The general geologic stratigraphy of the Baltimore area includes crystalline Pre-Cambrian and early Paleozoic basement rocks that are unconformably overlain by the Patuxent Formation which is conformably overlain by the Arundel Formation. The Arundel Formation is unconformably overlain by the Patapsco Formation which represents the uppermost Cretaceous

sediments. Pleistocene sediments unconformably overlie the Cretaceous sediments. In places, recent deposits of natural and anthropogenic origin overlie the Pleistocene sediments.

In general, the Coastal Plain sediments thicken to the southeast and comprise a wedge-shaped mass lapping over the east-sloping crystalline-rock floor.

The Patuxent Formation is the lowermost unit of the Potomac Group. The Patuxent sediments consist primarily of quartzose gravel and sand interbedded with silty clay lenses. The thickness ranges from 50 to 250 feet.

The Arundel Formation, or Arundel Clay, is the middle unit of the Potomac Group. In the Baltimore area it is a red to red-yellow, dense, plastic clay with thin lenses of silt. The composition of the clay is predominantly kaolinite and illite. The Arundel Clay ranges in thickness from 25 to 200 feet and thickens to the east and south.

The Patapsco Formation is the upper-most unit in the Potomac Group. In the Baltimore area, the Patapsco is comprised of interbedded sands, silts, and clays, and its thickness ranges from 0 to 200 feet.

Quaternary sediments of Pleistocene age are present directly above the Cretaceous sediments of the Potomac Group at thicknesses from 0 to 150 feet. The sand, gravel, and clay that comprise the Pleistocene sediments are divided into two generalized formations: upland deposits and lowland deposits.

2.5 Regional Hydrogeology

Aquifers in the Patuxent and Patapsco Formations are the primary groundwater sources in the Baltimore area. Local water supplies can be produced from the Talbot (i.e., Pleistocene) Formation. In areas close to estuaries, water supply wells in any of these formations are susceptible to chloride contamination.

2.5.1 Patuxent Aquifer

The aquifer in the Patuxent Formation is a significant source of groundwater for the Baltimore area. Both current and historic discharge from the Patuxent aquifer is primarily through water-well withdrawals. Historic use of the Patuxent aquifer dates back to the 1850's. Elevated chloride concentrations caused by saltwater encroachment have been documented in the Patuxent aquifer since the 1930's.

2.5.2 Patapsco Aquifer

The aquifer in the Patapsco Formation is also a source of groundwater for the Baltimore area. A sand facies in the lower part of the Patapsco Formation is considered the principal source of water in the Patapsco aquifer. Groundwater within the Patapsco Formation is confined at Sparrows Point with the overlying Pleistocene sediments serving as the upper confining bed and the Arundel Formation as the lower confining bed. In some parts of the Baltimore area,

including the Sparrows Point Site, the Patapsco Formation contains a well-defined "middle clay bed" that separates the lower sand facies from the upper part of the formation.

The Patapsco aquifer was used as a source of groundwater prior to 1900 and during the early part of the 20th century. Because the Patapsco aquifer widely subcrops beneath the brackish Patapsco River, elevated chloride concentrations became a major problem in areas near the Patapsco River estuary. By 1945, almost all water production from the Patapsco aquifer had ended due to excessive chloride in the Harbor, Canton, and Dundalk areas. The Sparrows Point Site was the only major user of the Patapsco aquifer in 1945. Water production totaled about 3 Mgal/d; however, by the late 1940's and 1950's, many of the Sparrows Point wells were affected by elevated chlorides as well and were therefore abandoned. As of 1985, there was no major use of the Patapsco aquifer in the immediate vicinity of the Patapsco River estuary.

2.5.3 Pleistocene Groundwater

Although not common, local supplies of groundwater can be developed in the Pleistocene lowland deposits of the Talbot Formation in the Baltimore area. Wide variations have been reported for the transmissivity of water-bearing zones in the Talbot Formation in the Sparrows Point area. Elevated chloride concentrations in the Talbot Formation are wide-spread along the Patapsco River and its estuaries, and salt-water encroachment is a significant factor limiting development of water supplies in the Talbot Formation. Wells completed in the Talbot Formation at Sparrows Point have been abandoned and are not suitable for potable supply.

3 FACILITY USE AND HISTORY

3.1 Overview

Pennsylvania Steel built the first blast furnace at Sparrows Point in 1887. The first iron was cast in 1889. Bethlehem Steel Corporation (BSC) purchased the Sparrows Point Facility in 1916 and enlarged it by building mills to produce hot rolled sheet, cold rolled sheet, galvanized sheet, tin mill products, and steel plate. During peak production in 1959, the Facility operated 12 coke oven batteries, 10 blast furnaces, and four open hearth furnaces. The coke ovens ceased operations in December 1991 and have been demolished and removed from the Site. The remaining operations at the Site ceased operations in 2012 and the related structures are currently being demolished and removed from the Site. The Site had been continually used for the production of iron and steel from 1887 until 2012; the following sections provide a historical description of Site use.

3.2 Steel Manufacturing Operations

Steel manufacturing involved the handling of vast amounts of raw materials including coke, iron ore, limestone, and scrap steel, as well as recovering byproducts and managing waste materials. The following operations and/or processes were performed during the manufacturing lifespan at the Sparrows Point Facility:

- Iron and Steel Production
    - Raw Material Handling
    - Coke Production
    - Sinter Production
    - Iron Production
    - Steel Production and Semi-Finished Product Preparation
- Finished Product Preparation
- Coal Chemical Recovery System
    - Coal Chemical Plants
    - Benzene and Litol Plants
    - Hydrogen Cyanide Strippers
    - Desulfurization Plant and Sulfur Recovery
- Other Byproducts Recovery Systems
    - Ammonia Removal Plant
    - Green Pellet Plant Ball Mill

  - Palm Oil Recovery
  - Slag Processing
  - Wastewater Treatment Systems
  - Bio-Oxidation Plant
  - Blast Furnace/Sinter Plant Water Treatment System
  - Basic Oxygen Furnace Water Treatment System
  - Chromium High Density Sludge (HDS) Plant
  - Tin Mill Canal and Humphrey Creek Wastewater Treatment Plant
- Solid Waste Management
  - Greys Landfill
  - Coke Point Landfill
- Air Pollution Control

The following sections present brief descriptions of these operations and/or processes.

3.2.1 Iron and Steel Production

Iron- and steel-making involves raw material handling, coke production, sinter production, iron production, steel production, semi-finished product preparation, and finished product preparation.

3.2.2 Raw Material Handling

Most of the raw materials used in the production of iron and steel were stockpiled in the ore pier area located in the south-central portion of the Site. The raw materials include iron ore, coke, crushed limestone, quartz gravel, sand, mill scale, and pellet fines.

3.2.3 Coke Production

Coke was produced on Site for use as a fuel in the iron-to-steel making process. A total of 13 coke oven batteries were used between the 1930's and 1991 at which time the coke ovens ceased operations. During the period of active coke production, coal was stored in an area located north of Coke Point Landfill and southwest of the Benzene\Litol Plant.

3.2.4 Sinter Production

Sinter was produced on Site for use as a raw material for iron production. Sinter is an agglomerated and fused mixture of fine-sized materials such as iron ore, coke breeze, fluxstone, mill scale, and flue dust used to charge the blast furnaces. After fusing, the sinter product was

crushed and screened. Undersized sinter fragments were recycled and acceptably sized sinter fragments were air cooled, screened again, and then sent to charge the blast furnaces.

3.2.5 Iron Production

Iron was produced in blast furnaces where iron ore (or iron-bearing pellets), sinter, coke, and limestone were continuously fed into the top of the furnace. Solid materials were ultimately heated by the hot air and fuel injected in the lower section of the furnace and from coke burning. Molten iron forms from the heating and reaction with these gases. The limestone reacts with the ore impurities to form slag, which floats atop the molten iron. The slag was separated and transferred directly to the granulated Slag Plant and then taken to an on-Site processing area. The iron was drawn from the furnace bottom to hot metal cars for transport to the steel making furnaces.

3.2.6 Steel Production and Semi-Finished Product Preparation

Molten iron and ferrous scrap metal were refined by oxidation in the steel-making process. Once refined, alloys were added to the molten iron for the desired grade of steel. Slag was also generated in this process and was taken to the reprocessing area on-site. The steel was continuously cast and semi-finished steel slabs were cut to proper lengths at two strands of the Continuous Caster for further processing at either the Plate Mill or Hot Strip Mill.

3.2.7 Finished Product Preparation

Finished steel was produced in various portions of the Site at the Plate Mill and two Finishing Mills (the Cold Sheet Mill, and the Tin Mill). These mills generate various steel products, all to customer specifications, including hot-rolled sheets and strips, cold-rolled sheets, and flat plates. Some of the products were galvanized, coated with corrosion-resistant alloys (i.e., galvalume or chrome), or tin- plated at the Coating Lines located in the Cold Sheet Mill and the Tin Mill.

Two other mills in the northwestern portion of the Site, the Rod and Wire Mill and the Pipe Mill operated between the 1940's and early 1980's producing rods, wire products, and pipes.

3.2.8 Coal Chemical Recovery System

During the coke production years, the coal chemical recovery system consisted of several individual plants that operated for raw coke gas treatment. These plants were located in the southwest portion of the Site, and included the A and B Coal Chemicals Plants (CCP), the Benzene and Litol Plants, two Hydrogen Cyanide Strippers, and the Desulfurization Plant and Sulfur Recovery. The history and current status of these plants are discussed below.

- Coal Chemical Plants - Raw coke oven gas was initially treated at the A or B CCP. The A CCP (which served coke oven batteries 1-6 and battery A beginning in the 1930's) and B CCP (which served batteries 11and 12 beginning in the 1950's) both ceased operations in

1991. These plants contained various oil/water separators, scrubbers, saturators, cooling towers, tar decanters, and numerous tanks.

- Benzene and Litol Plants - The Benzene and Litol Plants were distillation and cracking plants used for the purification of light oil into benzene, toluene, and xylene and operated from the late l 940's through 1986. These plants contained numerous tanks, coolers, absorbers, and scrubbers. All plant units have been removed.
- Hydrogen Cyanide Strippers - Two Hydrogen Cyanide Strippers were used for the removal of hydrogen cyanide from gas generated at the A and B CCPs, and from wastewaters generated in the treatment of this gas. One stripper removed the cyanide from the final cooler condensate. The other stripper removed the cyanide from the coke oven gas before distribution of the gas to the plant. All plant units have been removed.
- Desulfurization Plant and Sulfur Recovery - The original Sulfur Recovery Plant operated from the late 1960s through the late 1980s, and it removed about one-third of the sulfur produced from the A and B CCP coke oven gas. This unit was torn down and replaced with a new unit that would have fully desulfurized the gas. The new unit was never operated prior to the shutdown of the coke ovens in 1991.

3.2.9 Other Byproducts Recovery Systems

Byproduct recovery systems that were formerly operated at the Site include the Ammonia Recovery Plant, the Green Pellet Plant, the Ball Mill, Palm Oil Recovery and Slag Reprocessing.

- Ammonia Removal Plant - Excess weak ammonia liquor from the A and B CCP coking operations was temporarily stored in a one-million gallon tank prior to pumping it to the Ammonia Removal Plant. At the Ammonia Removal Plant, the liquor was added to lime slurry and then sent to a clarifier to remove suspended solids. The pre-limer clarifier sludge was beneficially re-used at the Humphrey Creek Wastewater Treatment Plant for pH adjustment. The clarified liquor went to the Bio-Oxidation Plant for phenol treatment.
- Green Pellet Plant - The Green Pellet Plant, located in the open-hearth furnace shop area near the south-central portion of the Site, operated from the early 1970's to approximately 1980. Here, unfired (green) iron ore pellets were manufactured from open hearth and basic oxygen furnace fume dust. The pellets were then charged back into the furnaces. The plant was demolished in 1990.
- Ball Mill - The Ball Mill was located west of the coke ovens. There are no reported startup dates, but the mill ceased operations in the 1980's. Coal tar and material from the tar decanter, which formed from the quenching of coke oven gases, was recovered here and processed to a liquid for beneficial use as fuel at the Pennwood Power Station or at the Open Hearths.
- Palm Oil Recovery - The Palm Oil Recovery (PORI) received and processed waste oils generated throughout the Sparrows Point Facility. PORI operations began around 1950. Waste oil was received by an oil/water separator and discharged to a holding tank.

Wastewaters were then piped to an earthen lagoon where the waste oil is skimmed and recovered. Wastewaters were discharged to the Tin Mill Canal, and further treated at the HCWWTP.

- Slag Reprocessing - Slag generated at the Blast Furnace and the BOF was processed on Site. At the Blast Furnace, hot slag is dumped in holding bins and sprayed with water to cool and solidify the material. Molten slag from the BOF was tapped from the steel-making vessel into containers (thimbles) for transport to the slag-processing Facility where it was dumped and sprayed with water. Cooled, solidified slag was dug from the Blast Furnace slag bins or from piles at the slag Facility and separated by crushing and screening into various sizes suitable for sale. Some of the BOF slag was recycled to the iron-making operation.

3.2.10 Wastewater Treatment Systems

The generation of a variety of wastewaters, waste pickling liquors, and other aqueous wastes was part of the routine procedures for steel making and steel processing. Some of the more important plants/systems that were located on-site are briefly discussed below.

- Bio-Oxidation Plant - Most of the wastewater treated at the Bio-Oxidation Plant came from the Ammonia Removal Plant, the Benzene and Litol Plants, and from the A CCP Hydrogen Cyanide Stripper. The treatment system consisted of various tanks, skimmers, oil/water separators, mixing chambers, aeration basins, and thickeners.
- Blast Furnace/Sinter Plant Water Treatment System - The Blast Furnace/Sinter Plant Water Treatment System processed water from the Sinter Plant scrubbers and treats slurry from the Blast Furnace recycled water system for soluble zinc and cyanide. The treatment system consisted of a thickener, a belt press filter, and two spent pickle liquor tanks. Dewatered sludge (non-hazardous) was disposed in Greys Landfill and water was discharged through NPDES permitted outfall 101.
- BOF Water Treatment System - The BOF gas cleaning water treatment system was a recycle system that treated water from four (4) BOF scrubbers used to remove suspended particulates from BOF process gas generated during the production of steel. The treatment system consisted of various tanks and settling equipment. Solids were removed and disposed at Greys Landfill. Excess water (blowdown) was sent to the HCWWTP for final discharge through NPDES outfall 014.
- Chromium High Density Sludge (HDS) Plant - In 1987 the Chromium High Density Sludge (HDS) was installed to process chromium-bearing wastewater generated during chromium plating and passivating operations at the Tin Mill. The wastewater treatment system includes several tanks (i.e., reduction, neutralization, and flocculation), pH adjustment, thickening, and filtering of solids. Sludge from the treatment process is sent off-site for proper disposal. Treated wastewater is sent to the Humphrey Creek Wastewater Treatment Plant (HCWWTP). This plant is not scheduled for demolition.

- Tin Mill Canal and Humphrey Creek Wastewater Treatment Plant - The Tin Mill Canal (TMC) is a man-made canal constructed in slag fill and located in the northern half of the Site. The TMC primarily serves as a conveyance for industrial wastewater discharged from several Site facilities. The canal also receives stormwater runoff. The TMC is approximately 7300 feet long, 30 to 50 feet wide, and averages approximately 15 feet in depth below surface grade. Wastewater flows generally east to west toward the Humphrey Creek Waste Water Treatment Plant (HCWWTP). The eastern portion of the TMC began operating in the early 1950's. The western (remaining) portions of the canal and HCWWTP were completed and began operating in approximately 1969. Treated wastewaters discharge through NPDES outfall 014 to Bear Creek. The HCWWTP was reconfigured and improved by incorporating the ACTIFLO® microsand ballasted clarification process in 2004. The TMC and HCWWTP are still in use.

3.2.11 Solid Waste Management

Solid wastes have been disposed of and managed primarily at two areas within the Sparrows Point Site: Greys Landfill and Coke Point Landfill.

- Greys Landfill - Greys Landfill is located at the northwestern portion of the Sparrows Point property. The landfill is situated adjacent to Interstate Route 695 that provides a boundary to the south of the landfill and Peninsula Highway that is north of the landfill. The existing landfill area is approximately 40 acres in size and is characterized by waste deposits and graded side slopes developed during many years of waste and miscellaneous slag filling operations. Current surface elevations of the waste materials generally range from 90 to 110 feet in elevation. Filling operations in this area began in approximately 1970 as determined by aerial photograph records. The landfill is in use today. In the northeast corner of Greys Landfill is the Tar Decanter Cell, also known as the Closed CHS Cell. This unit is a 1.5-acre RCRA-regulated disposal cell that received various coal tar sludge, slag, dusts, filter cakes, and miscellaneous debris. The unit was closed and capped in 1983 under a closure plan submitted to MOE in April 1983 and approved in August 1983.
- Coke Point Landfill - Coke Point Landfill is a solid waste disposal area located within the boundary limits of the Sparrows Point Site located at the southwestern edge of the Facility adjacent to the Patapsco River. The potential landfill area defined by horizontal boundary limit is approximately 46 acres. Approximately 25 to 30 acres have been used historically for waste disposal. The landfill currently exhibits irregular side slopes and vertical topographic elevations ranging up to approximately 70 feet. The area is characterized by surface materials of slag and miscellaneous fill that were placed during filling operations to provide made land at Coke Point. The area apparently received discarded materials during that time; but there is no clear starting date for the operation. Since 1971 until 2012, the area had been used as a landfill and waste disposal area. The

landfill received a variety of non-hazardous waste that generally included foundry dust, waste sand, slag, refractories, and various other dusts.

4 SITE ASSESSMENTS, INVESTIGATIONS AND INTERIM MEASURES

The property operated for many years solely as an integrated iron and steel complex. Environmental obligations exist as a result of this operation, chiefly related to the investigation and cleanup of former waste disposal locations. Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that are potential sources of releases to the environment at the Site were initially identified as part of the RCRA Facility Assessment process completed by EPA in the 1980's and further refined during Visual Site Inspections conducted in 1991 as described in the Final RFA Report (Kearney, 1993). A total of 203 SWMUs and 28 AOCs were identified; descriptions for 41 of the SWMUs and 26 of the AOCs were provided in the report. More recently, the property has been the subject of a Phase I Environmental Site Assessment (Weaver Boos, 2014) undertaken in support the all appropriate inquiry and due diligence process of its prospective Purchaser.

4.1 Site-Wide Investigation Work

The former owner, Bethlehem Steel, agreed with the EPA and MDE to a comprehensive multimedia Consent Decree. The Consent Decree requires site wide investigation and associated corrective action for the property and compliance, closure and post closure care matters associated with two on-site landfills (Greys Landfill and the Coke Point Landfill). The initial effort for the planning of site wide investigation tasks associated with the Consent Decree provided a description of the current conditions of the Site. This work included the development of the *Description of Current Conditions Report*, (DCCR) Rust 1998.

Screening analyses of the SWMUs, AOCs and non-RFA areas were completed in the DCCR to define further investigation requirements and associated chemicals of potential interest (COPIs) for SWMUs and AOCs requiring further investigation and to screen out SWMUs and AOCs that were not observed to be releasing and requiring no further action. This analysis included review and analysis of the RFA Report, environmental files of Bethlehem Steel Corporation (including correspondence, analytical data summaries, permit information, site investigation reports, closure reports, monitoring/sampling reports and remediation reports) and on-site inspections. A total of 74 SWMUs and 10 AOCs remained for further consideration after completion of the screening analysis in the DCCR. In addition, 5 non-RFA areas were identified that required further investigation. An inventory of SWMUs, AOCs and other non-RFA areas of the Site identified and described in the DCCR and associated results of the screening analysis is presented in Table 1.

Subsequent investigations have focused on five "Special Study Areas" of the Site that encompass the significant majority of the SWMUs, AOCs and non-RFA areas identified as requiring further investigation. The special study areas include Coke Point Landfill, former Coke Oven Area, Tin Mill Canal/Finishing Mills Area, Humphrey Impoundment and Greys Landfill. Table 1 identifies the relationship between the special study areas and associated SWMUs, AOCs and non-RFA areas. Investigations have also been completed to assess on-site ecological risk on a

site-wide basis. Work has been completed including characterization of release areas, groundwater nature and extent investigations, human health risk evaluation, and screening and baseline ecological risk assessments. Data and results associated with the site-wide investigative work contained within these reports are summarized in the following sections:

- Site-Wide Investigation Release Site Characterization Study, June 2002 (CH2M Hill 2002a);
- Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater From the Special Study Areas, International Steel Group, ISG Sparrows Point, Inc. Facility, Sparrows Point, Maryland, January 2005 (URS 2005a), revised 2007;
- CA725 Facility Investigation and Human Health Risk Evaluation (HHRE) Findings, ISG Sparrows Point, June 2005 (URS 2005b);
- Ecological Risk Assessment Strategy Document; ISG Sparrows Point Facility (URS 2006a);
- Final Ecological Risk Assessment Work Plan for On-Site Areas (URS 2007).
- Screening Level Ecological Risk Assessment For On-Site Areas Final (April 2009, URS)
- Supplemental Report County Lands Parcel 1B Ponds Final (May 2009, URS)
- Final Baseline Ecological Risk Assessment for On-Site Areas (BERA) Report (URS, October 7, 2011)

More recently, Weaver Boos Consultants, LLC (Weaver Boos) performed a Phase I Environmental Site Assessment (Phase I) on behalf of the Purchaser's counsel in general compliance with the scope and limitations of American Society for Testing Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527-13). The purpose of this Phase I is to identify and report, to the extent feasible, recognized environmental conditions with respect to the Property. ASTM E 1527-13 defines a recognized environmental condition as:

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

Based upon the assessments completed thus far, the Phase I revealed evidence of recognized environmental conditions and historical recognized environmental conditions in connection with the Site.

4.2 Descriptions of Site Areas

4.2.1 Coke Point Area

The Coke Point Area is approximately 300 acres in size located on the southwest portion of the Site. The area is a man-made peninsula comprised of slag from the ground surface to

approximately 15-30 feet below grade where the native sediments (silts, sands and clays) are then encountered. This area includes the former Coke Oven Area and Coke Point Landfill special study areas.

The natural groundwater hydraulic gradient is fairly flat, with a radial flow pattern moving towards the shoreline. Groundwater data suggests that an artificial hydraulic gradient is being created by groundwater pumping associated with an off-site shipyard Facility located to the northwest of Coke Point (separate ownership). This pumping appears to directly affect the fate and transport of impacted groundwater in portions of Coke Point, creating artificial groundwater movement in both lateral and vertical downward directions in response to pumping activity.

Analytical results obtained from groundwater samples collected during site investigation activities indicate that VOCs and SVOCs (predominately benzene and naphthalene) have impacted the shallow and intermediate groundwater zone at the Coke Point Area. Groundwater plumes containing dissolved VOCs and to a certain extent SVOCs exist in the slag fill in an unconfined groundwater zone occurring roughly 5 to 15 feet below the ground surface and an intermediate native material groundwater zone occurring 20 to 40 feet below the ground surface. Non aqueous phase liquid (NAPL) source areas containing benzene and naphthalene respectively are present in two distinct locations as shown on Figure 1. The benzene NAPL source area encompasses approximately 54,500 ft^2; the naphthalene source area is approximately 31,300 ft^2.

The extent of the groundwater plumes for benzene and naphthalene are shown on Figure 1. Areas in excess of 10 mg/L for benzene and 1 mg/L for naphthalene are shown which roughly approximate 1% of the respective solubility limits. The areal extent of the VOC and SVOC groundwater impacts is confined to the Coke Point fill portion of the Sparrows Point peninsula and has not migrated to the area north of the Coke Oven area. The maximum VOC concentrations (predominately benzene) are located at the northwest portion of the Coke Oven SSA. Groundwater with elevated COPI VOCs has migrated towards the southwest and northwest of the Coke Oven SSA and is present at the shoreline. The SVOC concentrations (predominately naphthalene) are more evenly distributed, and the maximum concentrations are located on the eastern half of the Coke Oven SSA. The nature of the plumes is further described as follows:

<u>Dissolved Benzene Plumes</u>:

- Shallow Depth (~ 5-20 ft. bgs)

  The northwest quadrant of Coke Point contains a plume greater than 10 mg/L currently encompassing ~ 2,450,072 ft^2 (56 acres)

  The central southern portion of the Point contains a relatively small plume greater than 10 mg/L currently encompassing ~ 67,800 ft^2 (1.6 acres)

  The northeastern quadrant contains two small benzene plumes greater than 10 mg/L

  - The northeast corner, currently encompassing ~75,000 ft^2

- The central eastern area, currently encompassing ~75,000 ft^2

- Intermediate Depth (~30-45 ft. bgs)

  The northwest quadrant of Coke Point contains a plume greater than 10 mg/L currently encompassing ~1,820,200 ft^2 (42 acres)

Dissolved Naphthalene Plume:

- Shallow Depth (~5-15 ft. bgs)

  Upper mid-eastern portion of Coke Point, plume greater than 1 mg/L currently encompassing ~ 2,586,500 ft^2 (59 acres)

Based on monitoring data, there is no indication that significant concentrations of VOCs or SVOCs are present deeper than 75 feet below the ground surface. VOC and the SVOC concentrations decrease to below their respective reporting limits or exhibit a significant decreasing trend toward the laboratory reporting limits in all samples collected from the lower groundwater zone piezometers.

A sporadic presence of metals, including arsenic, lead and vanadium, was detected in the shallow and intermediate groundwater zones. The total metal concentrations show a general decrease throughout Coke Point in the intermediate and lower groundwater zones as native materials are encountered. The measured concentrations in the lower zone are all within the low µg/L ranges. The presence of metals in groundwater in this area at these concentrations may be related to baseline levels of metals that are present in the fill and natural soils at the Facility and not associated with historic site activities.

4.2.2 Tin Mill Canal/Finishing Mills Area

The Tin Mill Canal/Finishing Mills Area includes the Tin Mill Canal (TMC) and adjacent finishing mills area that included operations for steel plating and coating operations as shown on Figure 2. The TMC is constructed of slag materials and is approximately 7300 feet long and 30-50 feet wide at the bottom. The finishing mill area is approximately 200 acres of mill structures that discharged contact wastewaters and stormwater through sewer pipe systems to the TMC. The finishing mills are shut down and in the process of being razed and are no longer a source of contact wastewater discharges to the TMC. This work will eliminate potential future sewer discharges from the finishing mills that would be of concern.

The canal has been used historically for the conveyance of both stormwater and wastewater to a central wastewater treatment plant (HCWWTP) prior to discharge to surface water through a NPDES permitted discharge outfall. Materials that contain metals and oil/grease have been deposited in the Tin Mill Canal over time from process sewer discharges associated with the steel finishing operations. These materials are located within the entire length and width of the canal and affect water currently being controlled and discharged through the canal. The canal still receives and controls stormwater runoff from the Site; the HCWWTP remains operational to

treat stormwater runoff prior to discharge. Hydrogeologic studies have shown that the canal also controls and receives groundwater inflow from Site areas adjacent to the canal.

Impacts to groundwater at the Tin Mill Canal/Finishing Mill area are generally confined to areas adjacent to the canal and do not show impacts in piezometers located along the eastern or western shoreline downgradient from these areas. Analytical results obtained from samples collected during site investigation activities indicate that impact to the groundwater by VOCs and SVOCs are generally confined to the area adjacent to the Tin Mill Canal within the shallow and intermediate groundwater zones. Investigations did not identify issues in the groundwater surrounding the finishing mills that were of significant concern.

4.2.3 Humphrey Impoundment

Humphrey Impoundment is located in the northwest portion of the Site along the northern side of the downstream section of the Tin Mill Canal (Figure 2). The area was originally open water that was closed off when the canal construction was completed around 1970. The impoundment was subsequently filled with various materials that included in part non-hazardous wastes until the mid-1980s. The area is now predominantly characterized by dense surface vegetation (Phragmites reed beds). Existing habitat is not conducive to large wildlife populations and this characteristic is likely to be considered in assessing the potential need for corrective action.

Specific areas of the impoundment were used for the storage/placement of TMC dredge materials in areas historically noted as containment areas or TMC impoundments. The containment areas/impoundments have been identified as previously located on the southern edge of Humphrey Impoundment. Collectively these areas are approximately 4 acres in size (Figure 2).

Analytical results obtained from samples collected during site investigation and ecological risk assessment activities for the Humphrey Impoundment indicate limited potential for off-site groundwater impacts and low to negligible risk to on-site ecological receptors. Impacts to groundwater by the VOCs and SVOCs are confined to the area adjacent to the Tin Mill Canal within the shallow and intermediate groundwater zones. Concentrations of VOCs and SVOCs along the shoreline west of Humphrey Impoundment were below or approaching their respective laboratory reporting limits in the shallow intermediate and lower groundwater zones.

A limited presence of metals including lead, vanadium, thallium and chromium are present in the shallow and intermediate groundwater associated with the Humphrey Impoundment. Diffuse metals are also present in the shallow surface materials. The chromium, lead, thallium and vanadium concentrations in groundwater decrease with depth to the lower zone. The presence of metals detected in the lower groundwater zones in this area may be related to baseline levels of metals that are present in the natural soils at the Facility and not associated with Site activities.

4.2.4 Greys Landfill Area

The Greys Landfill Area includes the area occupied by Greys Landfill and areas to the north and east of Greys Landfill bounded by the Peninsula Expressway that include approximately 80 acres (area identified as County Lands Parcel 1A, Figure 3). These areas have been shown to have impacts from historical waste management practices. Volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) are present in surface soil, subsurface soil and in groundwater. Analytical results obtained from samples collected during site investigation activities indicate that impact to the groundwater by VOCs and SVOCs is confined to the shallow groundwater zone near the northern portion of the Greys Landfill. Concentrations of VOC and SVOC analytes in the shallow zone show a decreasing horizontal trend away from the source area and have been defined to be below or approaching laboratory limits in all directions. In vertical extent, VOC and SVOC analytes in the intermediate groundwater zone were not detected or were detected at values approaching the laboratory limits. A limited presence of metals including arsenic and thallium are present in the shallow and intermediate groundwater. These analytes appear to be confined to the area along the northern border of the Greys Landfill. The measured concentrations are within low μg/L ranges.

4.3 Interim Measures

4.3.1 Rod and Wire Mill Area

Interim Measures are currently underway at the former Rod and Wire Mill Area as described below and shown on Figure 4:

- Institutional controls for soils have been established to provide a “Restricted Work Area” to control the exposure of on-site workers to soils in the Former Sludge Bin Storage Area.
- A groundwater monitoring network has been installed including the use of 31 wells for monitoring the performance of the groundwater pump and treat system. This monitoring network is used to collect water level and groundwater quality data.
- A groundwater pump and treat system is operated and maintained consisting of two intermediate depth zone recovery wells (RW10-PZM020 and RW15-PZM020) that operate at a rate of between 5.0 and 12.0 gallons per minute (gpm). The expected normal operating rate for the treatment plant was set at a combined rate of 8.0 to 12.0 gpm with a maximum design flow of 25 gpm. Recovered groundwater is transported via a pipeline to the Humphreys Creek Wastewater Treatment Plant (HCWWTP) for subsequent treatment and discharge in accordance with the NPDES permit requirements for the Facility.
- Average cadmium and zinc concentrations measured in the groundwater recovery wells in 2012:
  <u>RW10</u>
  Cd = 12 ppm (~142 lbs for the year mass recovered)

Zn = 470 ppm (~5,805 lbs for the year mass recovered)
RW15
Cd = 3.3 ppm (~41 lbs for the year mass recovered)
Zn = 51 ppm (~637 lbs for the year mass recovered)

4.3.2 Coke Oven Area

Interim measures (IMs) have been developed to address identified environmental conditions at the Coke Oven Area (COA). Six IM "Cells" have been identified at the COA as described below and shown on Figure 1:

- Cell 1: Prototype Air-Sparge/Soil Vapor Extraction (AS/SVE) System in the Former Benzol Processing Area
- Cell 2: AS/SVE and Groundwater Extraction System in Former Coal Storage Area
- Cell 3: AS/SVE System in "Cove" Area
- Cell 4: In-Situ Anaerobic Bio-treatment Area in Coal Tar Area
- Cell 5: Groundwater Extraction at the Turning Basin Area
- Cell 6: LNAPL Recovery at the Former Benzol Processing Area

As of December 31, 2013, Cells 1, 3, and 6 are operational. Design work was completed on the IM remediation systems for Cell 2 and Cell 5 and submitted for approval on August 6, 2013. Approval for both systems was received from EPA on September 10, 2013. As part of this approval, the bio-treatment process at Cell 4 has been discontinued and a combined Cell4/Cell5 remediation design has been approved. Further details of the IM systems are as follows:

4.3.2.1 Cell 1: Prototype AS/SVE System in the Former Benzol Processing Area

Cell 1 consists of an AS/SVE system coupled with vapor destruction via an electric catalytic oxidation (CATOX) unit. In total, Cell 1 has destroyed approximately 11,903 pounds of recovered hydrocarbons since operational startup in August 2010. A decreasing total volatile organic compound (VOC) concentration trend is documented at the groundwater wells monitored for system performance in this location.

4.3.2.2 Cell 2: AS/SVE and Groundwater System in Former Coal Storage Area

Design work was completed in 2013 on the IM remediation systems for Cell 2 and submitted for approval on August 6, 2013. Approval for the Cell 2 system was received from EPA on September 10, 2013. The Cell 2 system includes: 1) groundwater extraction from selected wells installed into the semi-confined intermediate sand unit below the slag groundwater zone, 2) treatment of that recovered groundwater, 3) re-injection of the treated groundwater, and 4) AS/SVE in the slag groundwater zone. The intermediate groundwater sand unit ranges from approximately 20 feet below ground surface to approximately 40 to 45 feet below ground surface. The remediation design for this zone is to operate a pump and treat groundwater system that utilizes a low profile air stripper and a CATOX unit to destroy all VOC vapors generated

prior to exhausting to the atmosphere. The remediation design for the shallow groundwater zone is to operate an AS/SVE system, recover stripped VOCs, and destroy those captured VOCs in a CATOX unit prior to the air stream being released to the atmosphere.

4.3.2.3 Cell 3: AS/SVE System in the "Cove" Area

Cell 3 consists of an AS/SVE system coupled with vapor destruction via an electric CATOX unit. In total, Cell 3 has destroyed approximately 1,352.4 pounds of recovered hydrocarbons since system startup on June 24, 2011. Since system startup, a generally decreasing VOC concentration trend in groundwater is documented for some of the monitoring wells. The trends for these monitoring wells will continue to be monitored and assessed during system operation in future months.

4.3.2.4 Cell 4: In-Situ Anaerobic Bio-treatment Area

The in-situ anaerobic bio-treatment system at Cell 4 has been discontinued as of the end of third quarter 2013. The treatment area at Cell 4 has been incorporated into the design of Cell 5, which will be installed in the first quarter 2014.

4.3.2.5 Cell 4/5: Groundwater Extraction at the Turning Basin Area

Design work was completed in 2013 on the IM remediation systems for Cell 4/5 and submitted for approval on August 6, 2013. Approval for the Cell 4/5 system was received from EPA on September 10, 2013. The Cell 4/5 system includes a remediation design that addresses a shallow groundwater contamination source area (Cell 4) and the area between the source and the shoreline (Cell 5) at the Turning Basin area. The remediation system involves using high vacuum extraction points from which both soil vapor and groundwater will be recovered and sent through a low profile air stripper in an effort to promote the volatilization of naphthalene and other dissolved volatile organic compounds (VOCs). All recovered soil vapor and generated off-gas would be sent through VGAC vessels prior to being discharged to the atmosphere. The treated groundwater would be sent to re-injection trenches located up-gradient of the plume. In addition to providing a "flushing" effect across the source area, the introduction of treated water will eventually help alter the water chemistry inside the source area to a point where bio-augmentation efforts may be a viable in-situ treatment option in the future.

4.3.2.6 Cell 6: LNAPL Extraction at the Former Benzol Processing Area

The Cell 6 LNAPL monitoring and recovery system operated during 2013. An estimated 1971 gallons (14,450 pounds) of LNAPL were recovered during 2013, bringing the total recovered LNAPL to 10,346 gallons (75,802 pounds) as of December 31, 2013. The existing LNAPL recovery systems will be operated in 2014 with periodic adjustments to the pumps and other components to maximize product recovery.

5 CONCEPTUAL CLEANUP AND RESPONSE PLAN

5.1 General Approach

This section presents conceptual cleanup and response actions that are anticipated to support the renewal of the Sparrows Point Site with redevelopment comprised solely of commercial/industrial activity. The Site has been previously used for steel manufacturing further regulated as a single parcel by a 1997 Consent Decree that covers the entire Site. Efforts will be completed to return the entire Site to "market ready" conditions and to complete response actions for select areas of the Site in an effort to return these areas to productive use.

Site-wide institutional and legal controls will be established and integrated within the response actions. These controls are anticipated to include, but will not necessarily be limited to, the following:

- Deed restriction for commercial/industrial site use only, no portion of the Site will be used for agricultural, recreational or residential purposes
- Deed restriction on groundwater use, no subsurface water or groundwater will be extracted from aquifers for any purpose
- Development and implementation of soil/materials management plans for remedial and redevelopment activities
- Where necessary, restriction on development/reuse or use of vapor intrusion control technologies for occupied buildings

5.2 Closure Approach

Significant environmental work has been conducted by former owner/operators under the Consent Decree and the data reveals that the majority of the Site is not subject to future remedial efforts under the Consent Decree. Regulatory obligations for remediation, closure and pathway exclusion of applicable areas of the Site that will also support market ready redevelopment are currently being clarified with the EPA and the MDE. These obligations have been defined as *market ready closure.* It is contemplated that approximately 2400 acres of the Site will be removed from the jurisdiction of the Consent Decree and be transferred to and subject to the process for obtaining closure (including financial assurance and public comment) for parcels in the Administrative Order on Consent entered into between the State and HRP. As such, separate remediation plans will be developed based upon the concepts outlined in this SCCP that will be intended to address regulatory obligations remaining under the Consent Decree and Prospective Purchaser Agreement (Special Study Areas) and regulatory obligations for areas of the Site removed from the Consent Decree (State Administrative Order Areas) to obtain a market ready closure.

The contemplated Special Study Areas and State Administrative Order Areas are shown on Figure 5 and described further as follows:

- **Special Study Areas** - Areas of Facility that include SWMUs and AOCs listed in EPA's August 12, 1993 RFA and as further clarified in the DCCR, including recognized environmental conditions identified in the Phase I report. Regulatory obligations and closure will be conducted in accordance with the terms of the Consent Decree. The Special Study Areas include work associated with site-wide groundwater closure obligations;

- **State Administrative Order Areas** - Areas of the Facility that include nominal SWMUs or AOCs listed in EPA's August 12, 1993 RCRA Facility Assessment (RFA) as further clarified in the DCCR, and may include recognized environmental conditions identified as part of the Phase I process. This area is proposed to be removed from the definition of Facility or Site under the Consent Decree and regulatory obligations and closure will be conducted in accordance with the contemplated Administrative Order on Consent to be entered into between the State and HRP. It is understood, however, that although market ready closure will be achieved through the Administrative Order on Consent, a final closure must occur through EPA's RCRA Statement of Basis process, through which a Certificate of Completeness will be issued.

Area specific conceptual cleanup actions will be implemented to complete the closure process required by the Consent Decree and the Prospective Purchaser Agreement and to complete a closure process that will be defined in the State Administrative Order. Corrective measures studies will be completed for areas that require response actions in accordance with the Consent Decree. The corrective measures study will define current conditions, completed remedial measures, and remaining environmental efforts such as monitoring and reporting for the Site such that closure approvals can be obtained for these areas. The State Administrative Order is anticipated to provide the framework for completion of response actions in general conformance with the Maryland Voluntary Cleanup Program (VCP).

5.3 Area-Specific Conceptual Cleanup Actions

An inventory of SWMUs, AOCs and other non-RFA areas of the Site identified and described in the DCCR is presented in Table 1. Further analysis and segregation of this inventory by geographical location, previous operations and likelihood of further remediation required is shown in Table 2. Analysis is provided to define the likelihood of further remediation (or likelihood for no further action) and the associated rationale for further remediation (no further action). Recognized environmental conditions identified in the Phase I will also be considered and incorporated as appropriate.. An outline of the conceptual cleanup plans including the information provided to the MDE and EPA on April 7, 2014 is shown on Table 3 and further described as follows.

5.3.1 Special Study Areas

Environmental Investigation Work Plans (EIWPs) will be developed for the Special Study Areas that will define the path forward for environmental investigations, remediation, pathway exclusion and closure. As necessary and appropriate, the EIWPs will be specifically integrated with proposed development plans for parcels within the Special Study Areas. Approval from the Agencies will be required to initiate work for the EIWP. This effort will include interactions with the Agencies including presentation of the proposed environmental work and the proposed site development plan.

Cleanup actions designed to address defined remedial objectives may be implemented as interim measures that would then be subject to monitoring and institutional controls identified as part of a subsequent corrective measures study and the associated corrective measures implementation. The conceptual cleanup actions planned for Special Study Areas are further described as follows:

5.3.1.1 Coke Point Area

Contaminants of concern include dissolved benzene, naphthalene, and non-aqueous phase liquid (NAPL). The primary exposure pathway for the Coke Point Area, which includes the COA and Coke Point Landfill, is the release of groundwater to surface water of the Patapsco River. Off-site migration of benzene through groundwater within the shallow or intermediate aquifers is also of concern. The natural groundwater hydraulic grade is fairly flat, with a radial flow pattern moving towards the shoreline. Potential risks may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Corrective actions will mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface WQS for VOCs and SVOCs. Remediation criteria also include the removal of NAPL sources to mitigate continuing groundwater sources of contamination and actions to mitigate the potential for migration of contaminated groundwater to offsite areas as follows:

<u>Groundwater</u>

- Remove NAPL sources to mitigate ongoing contribution to groundwater contamination
- Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
- Mitigate potential off-site migration of contaminated groundwater

<u>Soil Vapor</u>

- Prevent migration of soil vapor for occupied structures

Response actions for the Coke Point Area are anticipated to include: in-situ source area removal and treatment, mitigation of migration to adjoining surface water above acceptable

concentration(s), and mitigation of potential off-site migration. These actions will initially include the implementation or continued operations of currently approved interim measures as previously and recently agreed by the Seller. Additional response action(s) that might be found necessary to meet the remediation criteria or to allow for the termination of currently approved remediation measures will be undertaken in accordance with an EIWP subject to the approval of the Agencies. The EIWP will include details regarding necessary plans, investigative studies, or risk assessments to assist in developing the remediation objectives, compliance requirements, and define future monitoring obligations.

Elements of the EIWP for the Coke Point Area are anticipated to include delineation of contaminated areas through additional surface and subsurface investigations; evaluation of in-situ treatability parameters such as grain size and design hydrogeochemical data including pH and other aspects; groundwater flow modeling including fate and transport analysis; and ecological and human health risk assessments to assist in the development of remedial compliance requirements. A numerical model will be developed using the U.S. Geological Survey's SEAWAT, or equivalent, to evaluate groundwater flow and solute transport under current and future conditions. SEAWAT is a computer program capable of simulating three-dimensional, variable-density groundwater flow and solute transport and is well suited for applications involving coastal discharge conditions. The model will be used to simulate mass transport over time to predict the extent of contaminant discharge along the peninsula's boundary and to evaluate the influence of remediation measures. Biodegradation and attenuation will be considered and incorporated into the solute transport model, if appropriate. The output of the model will be used to estimate chemical concentrations associated with groundwater discharge in sediments, sediment pore water and in the surface water column in the near-shore area surrounding the Coke Point Area. It is anticipated that groundwater simulation(s) will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Simulation Objective(s)
2. Scope and extent – horizontal and vertical
3. Data Collection – existing and new
4. Data Evaluation – existing and new
5. Hydraulic Properties of the System
6. Boundary Conditions
7. Initial Conditions
8. Transient or Steady-State
9. Code Selection and Implementation
10. Calibration

11. Execution and Presentation
12. Evaluation of Uncertainty

Key aspects of the groundwater simulation such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

Supplemental human health and ecological risk assessments will be conducted to evaluate potential exposures on-site and in the near-shore areas where groundwater discharges. The on-site evaluation will assess risks to workers under current and future conditions. The off-site evaluation will focus on ecological and human health risks associated with the discharge of chemicals from groundwater to nearshore areas. The risk assessments will follow EPA guidance for human health and ecological risk assessment. Measured data for Site materials will be used to assess risks to future workers at the Site. Model-predicted concentrations of chemicals in sediment, sediment pore water, and the surface water column will be used as exposure concentrations in the risk assessment for the off-site nearshore areas. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges based in part on surface water quality standards for VOCs and SVOCs including benzene (0.51 mg/L) and others to be determined. It is anticipated that risk assessment(s) will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Applicable Guidance and Framework
2. Data Collection – existing and new
3. Data Evaluation – existing and new
4. Exposure Assessment – exposure assumptions
5. Toxicity Assessment – hierarchy of information sources
6. Risk Characterization – methods, individual substances, aggregate risks

Key aspects of risk assessment(s) such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

Figure 1 presents a schematic plan for the Coke Point Area. Details of response actions anticipated for Coke Point are as follows:

5.3.1.1.1 NAPL Benzene Source Area (Cell 6)

Mechanical/physical recovery methods are planned to remove LNAPL occurring within the benzene NAPL source area. This will initially be provided by continued operation of the approved Cell 6 Interim Measure. The impacted area is estimated at 54,500 square feet based on the physical occurrence of LNAPL measured in monitoring wells from data taken in 2013.

Additional information will be provided to address the agency's concern that a separate area of LNAPL may be present as expressed on April 7, 2014. The existing recovery system will be expanded to address additional LNAPL-affected areas (if any) and include recovery trenches and additional fluid withdrawal systems to recover LNAPL that can be physically removed from the subsurface. A secondary in-situ polishing effort will then be implemented for this area that will likely involve the use of chemical additives such as oxidants to further mitigate the ongoing presence of LNAPL source materials. It is proposed that LNAPL recovery be terminated at a specific recovery Facility such as a recovery well when its rate of recovery during normal operation declines to less than two (2) gallons per month.

5.3.1.1.2 NAPL Naphthalene Source Area (Cell 4/5)

Mechanical/physical recovery methods are planned to remove NAPL occurring within the naphthalene NAPL source area. This will be provided initially by implementation of the recently approved Interim Measure design for this area. The impacted area is estimated at 31,000 square feet based on the physical occurrence of NAPL measured in monitoring wells from data taken in 2013. The recently approved Interim Measure system will be implemented, operated, and possibly expanded to include extraction with localized surfactant application to recover NAPL that can be physically removed from the subsurface. A secondary in-situ polishing effort will then be proposed for this area that will likely involve the use of chemical additives such as oxidants to further mitigate the ongoing presence of NAPL source materials.

It is anticipated that upgrades of approved Interim Measures such as this will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Remedial Objectives
2. Data Collection and Evaluation
3. Bench Studies or Pilot Studies
4. Design Methodology

Key aspects of proposed upgrade(s) or change(s) such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

5.3.1.1.3 Dissolved Groundwater Plumes (Cell 2)

Groundwater extraction, ex-situ treatment, reinjection, and AS/SVE is planned in this area. These elements will initially be provided by implementation of the recently approved Interim Measure design for this area. Later, a subsurface low permeability barrier is proposed to be installed along the northwest shoreline of Coke Point within which groundwater flow is being artificially influenced by off-site pumping. The barrier is anticipated to be constructed using slurry wall techniques approximately 2100 feet long and keyed into a silty clay horizon that occurs at a depth of 60 feet below the ground surface. Flow-through treatment is also being

considered. Recognizing the agency's April 7, 2014 comment regarding the use of flow barriers, design of such a barrier will consider the results of groundwater simulation studies as earlier discussed in Section 5.3.1.1. Several alignment locations are possible parallel to the shoreline as shown on Figure 1. The subsurface barrier will be designed to reduce the hydraulic gradient imposed by the offsite pumping activity and prevent offsite migration of the dissolved plume in the unconfined groundwater zone in the slag and the intermediate groundwater zone.

Flow barrier design(s), if used, or other remediation efforts will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Objectives
2. Material of construction
3. Method(s) of construction
4. Proposed permeability
5. Long-term compatibility
6. Data needs
7. Design methods
8. Testing and construction QA/QC
9. Long-term performance monitoring

5.3.1.1.4 Dissolved Groundwater Plumes (Cell 3)

Initial response action in this area will include continued operation and maintenance of the approved Interim Measure. Expanded corrective measures are anticipated to be proposed in the Cell 3 shoreline location to mitigate groundwater discharges from this shoreline area for which the design will be finalized subsequent to groundwater modeling and risk assessment work to be completed as part of the EIWP. Corrective actions are planned that will double or triple the size of the treatment area of the current Air Sparge/Soil Vapor Extraction system in this area.

5.3.1.1.5 Dissolved Groundwater Plumes (Cell 4/5)

The Cell 4/5 treatment system will be operated to mitigate shoreline impacts on the eastern side of Coke Point. Further investigation is anticipated outside and to the northeast of the remediation system at Cell 4/5 subsequent to startup of the system to define shoreline impacts, if any. In-situ treatment may be implemented in this area and will likely be a chemical oxidation application. The agency's comment relative to in-situ treatment under elevated pH conditions will be addressed as part of the bench or pilot study process as earlier discussed.

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Institutional controls may include the

requirement for vapor mitigation systems for occupied buildings in certain areas. Closure tasks for this area may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. Timeframe for completion of this work is estimated at 24 to 36 months as shown on Table 3.

5.3.1.2 Tin Mill Canal/Finishing Mills Area

Contaminants of concern in this area include metals, organics, or oil & grease affecting the sediment and banks of the Tin Mill Canal (TMC), and thus potentially the stormwater that continues to be conveyed by the TMC. Remediation will focus on the mitigation of future exposure pathways from contaminated sediment, impacts to stormwater conveyed by the canal, and elimination of contaminants from the aggregate TMC discharge requiring treatment at the HCWWTP as follows:

<u>Sediment</u>

- Prevent potential future direct exposure to contaminated sediments located within Tin Mill Canal

<u>Surface Water</u>

- Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater at the HCWWTP

Figure 2 presents a schematic plan for the Tin Mill Canal/Finishing Mill Area. Response actions being considered for the Tin Mill Canal/Finishing Mills Area are anticipated to include either removal and disposal of impacted sediments associated with the canal or isolation techniques with sediments remaining in place and the subsequent installation of acceptable isolation and channel stabilization materials. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans and investigative studies to define the area and volume of sediments to be removed, provide waste characterization of the materials for proper disposal and complete the channel stabilization design. Early coordination and agency input on considerations specific to this area will be solicited as discussed earlier.

Response actions being considered are further described as follows:

- Dredging and removal of sediment from the TMC – estimated amount to be removed - 7300’ x 40’ x 5’ (the 5’ being the thickness of sediment to be removed) = ~54,000 cu yds of material
- Disposal will require TCLP waste determinations
- Non-hazardous materials are planned to be acceptable for disposal at Greys Landfill
- Isolation of the sediments by covering the sediments with an engineered barrier that will allow the sediments to remain in-situ and mitigate future exposure of stormwater conveyed through the TMC;

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area may include future NPDES surface water discharge requirements. Surface water discharge modeling may be appropriate and will necessarily be integrated with site development plans. Continuing stormwater discharges from the TMC will need to meet current and potential future surface water quality criteria associated with NPDES discharge permits for the Site to eliminate the need for ongoing treatment at HCWWTP. These criteria are anticipated to be focused on surface water quality standards for metals such as, but not limited to, copper (0.0061 mg/L), nickel (0.0082 mg/L) and zinc (0.081 mg/L). The quality of shallow groundwater discharging to the TMC is a consideration as commented by the agency on April 7, 2014 and will be specifically addressed in the EIWP. Timeframe for completion of this work is estimated at 18 to 24 months as shown on Table 3. Completion is anticipated to be documented in the Corrective Measures Implementation report.

5.3.1.3 Rod and Wire Mill Area

Contaminants of concern include primarily cadmium and zinc affecting surface soil, subsurface soil, and groundwater. The primary exposure pathways for the Rod and Wire Mill area include potential exposure to surface soil and the potential discharge of groundwater to surface water of Bear Creek. Groundwater, when the pump and treat system is not operating, has been shown to flow west-southwesterly across the impacted areas towards Bear Creek adjacent to the former Rod and Wire Mill. Potential risks may be present for this exposure pathway from direct toxicity of dissolved metals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Response actions will be implemented to mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface water quality standards (WQS) for cadmium and zinc. Corrective actions will be completed to mitigate impacts and eliminate the requirement to operate and maintain existing interim measures (i.e. the pump and treat system). Remediation will focus on the mitigation of future exposure pathways from contaminated soil and groundwater as follows:

<u>Soil</u>

- Prevent potential future direct exposure to contaminated surface soil
- Mitigate future leaching to groundwater

<u>Groundwater</u>

- Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure currently consisting of pumping and treatment of groundwater in this area

Response actions for the former Rod and Wire Mill Area are anticipated as follows:

- Removal of contaminated surface soils and installation of clean fill;
- In-situ soil stabilization if technically viable and necessary for the selected mitigation approach; and,
- Potential installation of a passive downgradient groundwater treatment system.

An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies, and risk assessments to assist in developing the remediation objectives, compliance requirements, and future monitoring obligations. The agency's comments relative to the implementation of in-situ stabilization on April 7, 2014 will also be addressed.

Site investigation and design work will include delineation of contaminated areas through additional surface and subsurface investigations, evaluation of in-situ treatability parameters such as grain size and design geochemical data, groundwater flow modeling including fate and transport analysis, and ecological and human health risk assessments to assist in the development of remedial compliance requirements. A numerical model based on the U.S. Geological Survey's SEAWAT, or equivalent, is anticipated to evaluate groundwater flow and solute transport under current and future conditions. The model is anticipated to simulate mass transport over time to predict the extent of contaminant discharge along the peninsula's boundary and to evaluate the influence of remediation measures. Biodegradation and attenuation will be considered and incorporated into the solute transport model, if appropriate. The output of the model is anticipated to estimate chemical concentrations associated with groundwater discharge in sediments, sediment pore water and in the surface water column in the near-shore area surrounding the former Rod and Wire Mill area. Early coordination and agency input on considerations such as bench or pilot studies and groundwater flow simulation will be solicited as previously discussed.

Supplemental human health and ecological risk assessments are anticipated to be conducted to evaluate potential exposures on-site and in the near-shore areas where groundwater discharges. The on-site evaluation will assess risks to workers under current and future conditions. The off-site evaluation will focus on ecological and human health risks associated with the discharge of chemicals from groundwater to near-shore areas. The risk assessments will follow EPA guidance for human health and ecological risk assessment to be agreed in advance. Measured data for Site materials will be used to assess risks to future workers at the Site. Model-predicted concentrations of chemicals in sediment, sediment pore water, and the surface water column will be used as exposure concentrations in the risk assessment for the off-site near-shore areas. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges. This work will be focused on mitigating the potential for groundwater discharges to Bear Creek containing cadmium and zinc that exceed acceptable risk based concentrations based in part on surface water quality standards for cadmium (0.008 mg/L) and zinc (0.0081 mg/L). Early coordination and agency input on

considerations specific to risk assessment implementation will be solicited as previously discussed.

Figure 4 presents a schematic plan for the Rod and Wire Mill Area. In-situ soil stabilization is under consideration for areas associated with the former sludge bin storage area and the east pond. In addition to consideration of the in-situ treatment process, it is anticipated that contaminated surface soils from depths of less than 3 feet at the former sludge bin storage will be removed and replaced with clean fill. Once soil remediation is complete, an area of approximately 3 acres will be protected with an engineered barrier, possibly comprised of a clean soil cover or approved equivalent.

An in-situ continuous permeable reactive barrier (PRB) or funnel and gate PRB system using BOF slag or zero valent iron (ZVI) material is under consideration to be installed downgradient and in parallel with the shoreline to mitigate the potential for non-point source discharge of groundwater above acceptable risk-based concentrations. Reactive media selection and PRB design are to be based on pilot testing and/or small-scale bench studies. These remedial options are included as a contingency to be finalized subsequent to groundwater modeling and risk assessment work to be completed as part of the remediation plan. Conceptual downgradient remedial options are also shown in plan view on Figure 4 and further described as follows:

OPTION #1: Continuous PRB

- ~ 600 ft long, ~ 3 ft wide, ~ 30 (to 40) ft deep approx. volume: 2,000CY @30' depth
- Comprised of BOF Slag and/or a ZVI material
- ~100 ft long, 3 ft wide, ~30 ft deep grout wall wings on each end, angled to ensure collection of impacted groundwater and force it through the PRB

OPTION 2: Funnel & Gate PRB System

- ~ 800 ft long, ~ 3 ft wide, ~ 40 to 50 feet deep
- Funnel sections to be impermeable grout
- Gate sections to be replaceable BOF Slag and/or a ZVI material

OPTION 3: Contractor-suggested alternative

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area are anticipated to include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. The Corrective Measures Implementation report is anticipated to document completion of this response action. Timeframe for completion of this work is estimated at 12 to 24 months.

5.3.1.4 Greys Landfill Area (County Lands)

Contaminants of concern in this area include VOCs or SVOCs affecting surface soil or groundwater. The primary exposure pathways for the Greys Landfill area are direct exposure to surface soil and the potential release of affected groundwater to surface water of Bear Creek. Groundwater has been shown to flow west-southwesterly across the impacted areas towards Bear Creek adjacent to Greys Landfill. Potential risks may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Final corrective action will utilize groundwater compliance concentrations derived from risk assessment work to be completed using in part surface water quality standards (WQS) for VOCs and SVOCs. Remediation will also include mitigation of potential future exposure to contaminated media as follows:

<u>Soil</u>

- Prevent future direct exposure to contaminated surface soil
- Mitigate future leaching to groundwater

<u>Groundwater</u>

- Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

<u>Soil Vapor</u>

- Prevent migration of soil vapor into occupied structures

Response actions for the Greys Landfill area are anticipated to include in-situ source treatment for VOCs and SVOCs involving either chemical and/or biological methods as necessary to mitigate groundwater discharge concerns and placement of cover material. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies and risk assessments to assist in developing the remediation objectives, compliance requirements and future monitoring obligations. Site investigation and design work will include delineation of contaminated areas through additional surface and subsurface investigations, evaluation of in-situ treatability parameters such as grain size and design geochemical data, groundwater flow modeling including fate and transport analysis, and ecological and human health risk assessments to assist in the development of remedial compliance requirements to be implemented as previously discussed.

Information is not yet available to define areas requiring in-situ source treatment. Cover material is anticipated to be placed over an area approximately 5 to 10 acres in size to mitigate potential future exposure to surface soil. Work is anticipated to refine data associated with the current conditions of this area and utilize modeling and risk assessment methods to demonstrate compliance.

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. The Corrective Measures Implementation report is anticipated to document completion of this response action. Timeframe for completion of this work is estimated at 12 to 24 months.

5.3.1.5 Humphrey Impoundment Area

Contaminants of concern are anticipated to include metals, organics, or oil & grease affecting surface material or groundwater. Potential exposure pathways and associated requirements for corrective action at the Humphrey Impoundment Area are planned to be evaluated through the preparation of a risk assessment. A Baseline Ecological Risk Assessment has been completed and submitted for the area that concluded low to negligible risk to on-site ecological receptors. Based on this work, response action associated with current ecological conditions is not anticipated to be required. Development for occupied use is not expected in this area which will minimize future exposure pathways. Potential risks may be present from direct toxicity of surface metals to wildlife receptors, accumulation in foodwebs, surface water aquatic life, and human health. Remedial alternatives for Humphrey Impoundment will include an evaluation as to whether the existing vegetative cover (Phragmites) is adequate for the future, or whether a soil or other cover will be needed long-term to mitigate future leaching to groundwater and the potential for non-point source discharge of groundwater above acceptable risk-based concentrations.

Response actions for the Humphrey Impoundment Area are anticipated to include integrated activities associated with completion and approval of a risk assessment for the area and site development plans. Institutional controls are planned to limit future direct contact exposure pathways. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies and risk assessments to assist in developing the remediation objectives, compliance requirements and future monitoring obligations as previously discussed.

Exploration, delineation, and possible corrective action for the former TMC containment areas may also be required. These areas are approximately 4 acres in size and located approximately as shown on Figure 2. Information is not yet available to assess the remedial requirements for these areas. Work is planned to refine data associated with the current conditions of the impoundment and investigate the potential presence of conditions requiring response action associated with the former TMC containment areas.

The Humphrey Impoundment Area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area

may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. Timeframe for completion of this work is estimated at 12 to 18 months.

5.3.1.6 Site Wide Groundwater

Information will be submitted to the Agencies to evaluate groundwater conditions and potential groundwater impacts on a site-wide basis. The work will include data, assessments, and corrective actions completed for Special Study Areas of the Site as well as sufficient information to assess potential groundwater impacts from areas planned to be removed from the Consent Decree.

The primary exposure pathway of the Site is the release of impacted groundwater to surrounding surface waters. Deed restrictions are planned to be put in place to restrict the extraction of shallow groundwater for any purposes other than remedial activities. Because of several natural and site specific factors such as brackish and other Site related conditions, shallow groundwater is not an actual or reasonably expected source of drinking water. The Sparrows Point peninsula exists downgradient from other land areas and potential users of shallow groundwater. The natural groundwater hydraulic grade of the peninsula is fairly flat, with a radial flow pattern moving towards the shoreline. Potential risks in surface water may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Corrective actions for specific areas described previously will be designed to mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface water quality standards (WQS).

It is anticipated that the assessment of site-wide groundwater will be preceded by an early coordination meeting with the agencies to provide input on key considerations such as:

1. Applicable Guidance and Framework
2. Groundwater Remedy Decision Framework, point of compliance and cleanup goals
3. Technical impracticability of groundwater restoration
4. Alternate Remedy Selection
5. Data Collection Requirements – Phase I and II Areas and Consent Decree Areas
6. Data Evaluation Requirements

5.3.2 State Administrative Order Area

Isolated SWMUs, AOCs, and non-RFAs concerns have been identified in State Administrative Order Area including the Hot Mill Area, Primary Rolling Mills Area, Furnace Areas and in general areas of the Site as shown in Table 2. The Phase I also documented the presence of recognized environmental conditions that require further investigation. Work is planned to

refine data associated with the current conditions of these SWMUs, AOCs non-RFA areas and recognized environmental conditions and investigate the potential presence of unacceptable conditions.

Information will be submitted to the Agencies to request certifications for completion of work for a parcel with no further action. Additional investigation, including equivalent updated Phase I and/or focused Phase II investigations will be conducted as required for specific parcels to be developed to provide supporting information to evaluate the potential of environmental impacts. This information will include:

- A specific description of the size and location of the parcel to be removed
- The name of the prospective purchaser/tenant and intended use of parcel (if applicable)
- A summary of the parcel history and current conditions. The summary will include applicable elements of ASTM E 1527-13 Standard Practice for Environmental Site Assessments (Phase I)
- Results of Phase II activities characterizing the parcel and its specific recognized environmental conditions (if any)

Additional data will be submitted specific to SWMUs, AOCs, non-RFA areas, or recognized environmental conditions that have been identified in the parcel. The path forward for certification for completion of work with no further action or remediation and continuing regulation including a defined closure process will be determined based on review of the submitted information.

As discussed with the agencies on April 7, 2014. assessment, further investigation, or response action(s) in the State Administrative Order Area is proposed to be undertaken consistent with the general and technical requirements of the Maryland VCP as set forth at Section 7-506 of the Environment Article of the Maryland Code, as may be supplemented or modified by the Administrative Order on Consent and Covenant Not To Sue As site wide groundwater will be considered as a Special Study Area, investigations and subsequent response actions, if necessary, are anticipated to be focused on soil conditions of the parcel. Work is planned to refine data associated with the current soil conditions of the parcel and investigate the potential presence of unacceptable conditions. Response actions, if required, will be supported by necessary plans, investigative studies and risk assessments.

Technical and other requirements of the VCP are understood to include but not be limited to the following:

1. Allowable Land Use Controls
2. Environmental Site Assessments
3. Cleanup Criteria Selection
4. No Further Requirements Determination(s)

5. Response Action Plan(s)
6. Issuance of Certificate of Completion
7. Oil Contaminated Sites

The time frame for completing the investigation of parcels within State Administrative Areas is anticipated to reflect the incremental renewal of the overall site and is therefore proposed to allow for flexibility. The eligibility for certifications for completion of work is anticipated to include parcels that demonstrate the absence of recognized environmental conditions that will be sufficiently defined by the Phase I process. Timeframe to complete the request for no further action for these areas is estimated at three to six months.

If MDE determines that development of a response action plan (RAP) is necessary, a proposed RAP will be submitted for approval, including a schedule for implementation and completion of the plan. Following completion of the RAP to the satisfaction of MDE, a No Further Requirements Determination (NFRD) or Certificate of Completion (COC) will be issued. Once initiated for a specific parcel, it is proposed that the investigative and remedial work (if necessary) will generally be completed within 12 to 24 months.

Submittal of specific parcel(s) for consideration under this process will include designation of its planned future use. A NFRD or COC issued for the parcel will be contingent upon its future use. Currently anticipated future use of parcels at the site includes:

- Tier 2B (Commercial Restricted); or,
- Tier 3B (Industrial Restricted).

6 COMPLIANCE PLAN FOR SOLID WASTE LANDFILLS

6.1 Compliance Actions

Actions will be undertaken to provide operational compliance, implement closure in accordance with applicable closure plans developed for the landfills and provide post-closure care requirements for Coke Point and Greys Landfills. Plans are not to operate Coke Point Landfill. Specific objectives include the following:

Coke Point Landfill

- Complete closure and post-closure care compliance obligations, including the development of closure plans to be approved by the Maryland Department of the Environment (MDE);

Greys Landfill

- Complete operational, closure and post-closure care compliance obligations, including the completion of closure plans that have been approved by MDE;

6.2 Coke Point Landfill

Coke Point Landfill is not planned to be used including further management of non-hazardous waste materials. Waste materials have not been received at this landfill since the change in ownership from RG Steel Sparrows Point LLC to Sparrows Point LLC. Sparrows Point LLC does not intend to use the Coke Point Landfill Facility to manage waste materials and has also further informed other entities operating at the Sparrows Point Site that waste materials are not to be managed at this landfill.

Coke Point Landfill will continue to be used for slag storage and tenant scrap metal recycling and iron bearing material recovery operations until mid-year 2014. The future use of Coke Point Landfill, including the schedule for closure, will also be contingent upon the ongoing interest by the Maryland Port Administration to acquire the parcel for potential dredged material containment Facility use.

Work will be completed to develop final grading and closure plans for the Facility for submittal to the appropriate regulatory authorities. Once approved, the landfill will be closed in accordance with the closure plan requirements.

The requirements for post-closure care include the following obligations: 1) semi-annual groundwater monitoring, analysis and reporting, 2) semi-annual landfill inspection and reporting, and 3) landfill surface and closure cap maintenance. The post-closure care period has been estimated at ten years.

6.3 Greys Landfill

Greys Landfill is planned to be operated for the management of non-hazardous waste materials generated at Sparrows Point associated with the operation of the wastewater treatment plant, demolition activities and response actions until the remaining capacity has been utilized. Greys Landfill has an approved operating and closure plan that defines the closure elevation of the landfill which limits the remaining capacity.

Compliance obligations including semi-annual groundwater monitoring and reporting and operating practices will continue during this time period. Once final elevations are achieved at the landfill, the landfill will be closed in accordance with the approved closure plan requirements.

The requirements for post-closure care include the following obligations: 1) semi-annual groundwater monitoring, analysis and reporting, 2) semi-annual landfill inspection and reporting, and 3) landfill surface and closure cap maintenance. The post-closure care period has been estimated at ten years.

Coke Point Area

EnviroAnalytics Group

0 300 600 1,200 1,800 2,400 Feet

1 inch = 500 feet

Legend

- COA IM Cells
- Possible Cell 3 Expansion
- Possible Slurry Wall
- Property Boundary

Figure 1

Former Coke Oven Area Remedial Plan - Intermediate Groundwater Zone

EnviroAnalytics Group

Legend

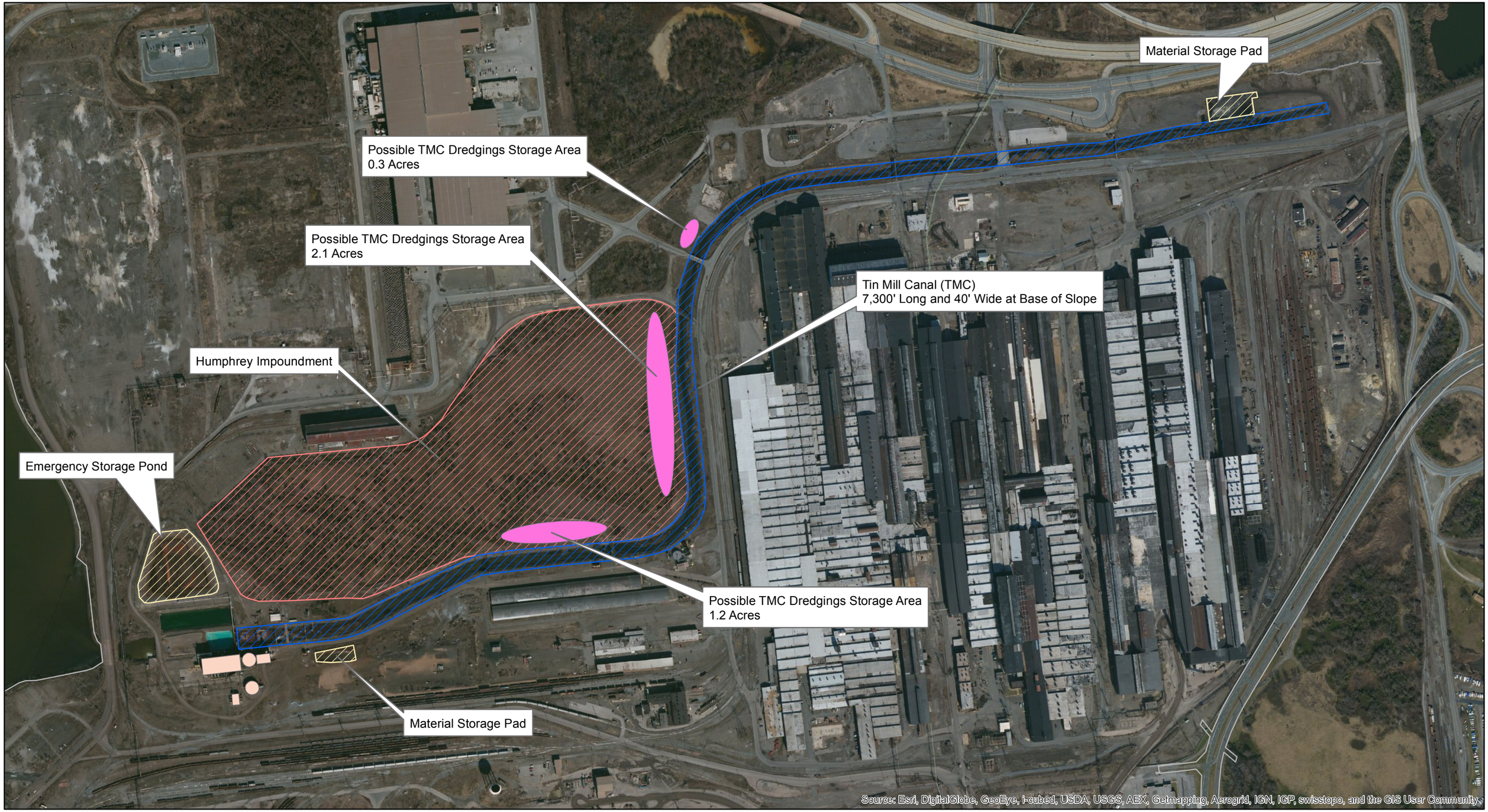
- COA IM Cells
- Possible Slurry Wall
- Proposed Cell 3 Expansion
- Napthalene NAPL Area
- Benzene NAPL Area
- Benzene Iso Concentration Intermediate Zone (mg/L)

Former Coke Oven Area Remedial Plan - Shallow Groundwater Zone

EnviroAnalytics Group

Legend

- COA IM Cells
- Possible Slurry Wall
- Proposed Cell 3 Expansion
- Benzene NAPL Area
- Napthalene NAPL Area
- Benzene Iso Concentration Shallow Zone (mg/L)
- Naphthalene Iso Concentration Shallow (mg/L)



Tin Mill Canal/Finishing Mills and Humphrey Impoundment Areas

EnviroAnalytics Group

0 300 600 1,200 1,800 2,400 Feet

1 inch = 500 feet

Legend

- Tin Mill Canal
- Humphrey Impoundment
- Possible TMC Dredgings Storage Area
- Possible Material Storage Areas
- HCWWTP
- Property Boundary

Figure 2

Greys Landfill Area

0 240 480 960 1,440 1,920 Feet

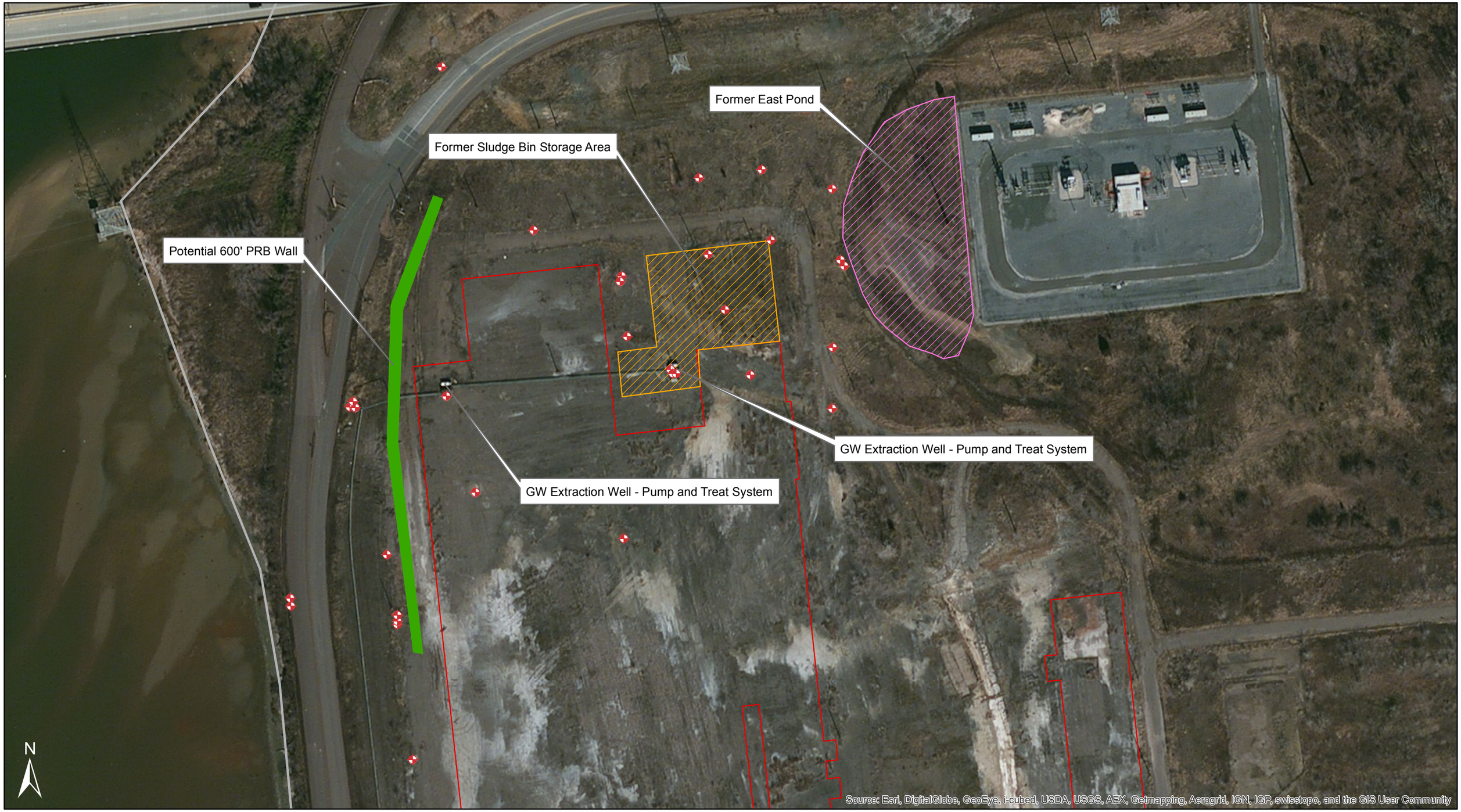
1 inch = 400 feet

Legend

- County Lands 1A
- Landfill Boundary
- Property Boundary

EnviroAnalytics Group

Figure 3



Rod and Wire Mill Area

0 50 100 200 300 400 Feet

1 inch = 115 feet

Legend

- RWM Monitoring Wells
- Former Sludge Bin Storage Area
- Former Building Footprint
- Former East Pond
- PRB Wall
- Property Boundary

EnviroAnalytics Group

Figure 4

Site Conceptual Cleanup Plan Areas

0 625 1,250 2,500 3,750 5,000 Feet

1 inch = 1,500 feet

Legend

- Special Study Areas
- Contemplated State Administrative Order Areas
- Property Boundary

EnviroAnalytics Group

Figure 5

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
1	Tin Mill Canal	SD	Further Action	Consent Decree "Special Study Area"	Tin Mill Canal/Finishing Mills
2	TMC Discharge Pipes	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
3	TMC Oil Skimming Devices	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
4	TMC Dredging Containment Areas	SD	Further Action	Undifferentiated with SWMU 6, include in SWMU 1 Evaluation	Humphrey Impoundment
5	TMC Waste Oil Storage Tanks	SD	Further Action	Include in SWMU 1 Investigation	Tin Mill Canal/Finishing Mills
6	TMC Impoundments	SD	Further Action	Undifferentiated with SWMU 4, include in SWMU 1 Evaluation	Humphrey Impoundment
7	Recent TMC Embankment Dredgings	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
8	TMC Brill Skimmer Pits	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
9	Former TMC Oil Collection Dumpster	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
10	HCWWTP Settling Basins	TP	No Further Action	Not observed to be releasing in RFA Report	------
11	HCWWTP Thickeners	TP	No Further Action	Not observed to be releasing in RFA Report	------
12	HCWWTP Aerators	TP	No Further Action	Not observed to be releasing in RFA Report	------
13	HCWWTP Wastewater Chemical Treating Buildings	TP	No Further Action	Not observed to be releasing in RFA Report	------
14	HCWWTP Spent Pickle Liquor (SPL) Discharge Point	AI	No Further Action	Part of treatment process, discharge is beneficially reused	------
15	HCWWTP Centrifuges	TP	No Further Action	Not observed to be releasing in RFA Report	------
16	HCWWTP Sludge Collection Box	TP	No Further Action	Not observed to be releasing in RFA Report	------
17	HCWWTP Old Alum Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
18	Chrome Recovery Reduction Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
19	Chrome Recovery Neutralization Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
20	Chrome Recovery Floc Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
21	Chrome Recovery Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	------
22	Chrome Recovery Sand Filters/Clarifier	TP	No Further Action	Not observed to be releasing in RFA Report	------
23	Chrome Recovery Rotary Filter Press	TP	No Further Action	Not observed to be releasing in RFA Report	------
24	Chrome Recovery Sludge Box	TP	No Further Action	Not observed to be releasing in RFA Report	------
25	Chrome Recovery Piping	TP	No Further Action	Not observed to be releasing in RFA Report	------
26	Chrome Recovery Filtrate Sump Filtrate Sump	SD	No Further Action	Non-releasing unit, wastes managed within closed treatment system	------
27	Rod Mill Remediation Area	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
28	Northwest Pond	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
29	East Pond	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
30	Rod Mill Equalization Tanks	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
31	Cadmium Treatment Reactor A Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
32	Cadmium Treatment Treatment Alkalization Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
33	Cadmium Treatment Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	------
34	Cadmium Treatment Sand Filter	TP	No Further Action	Not observed to be releasing in RFA Report	------
35	Cadmium Treatment Piping	TP	No Further Action	Not observed to be releasing in RFA Report	------
36	Cadmium Treatment Filter Press	TP	No Further Action	Not observed to be releasing in RFA Report	------
37	Cadmium Treatment Sludge Collection Box	TP	No Further Action	Not observed to be releasing in RFA Report	------
38	Cadmium Treatment Trenches	SD	No Further Action	Manages groundwater treatment process overflow, re-enters system	------
39	Rod Mill Scale Pits	NH	No Further Action	No known releases, managed non-hazardous waste	------
40	Rod Mill Cleaning House Containment	NR	No Further Action	Not observed to be releasing in RFA Report	------
41	Rod Mill Former Waste TCE Storage	NR	No Further Action	Not observed to be releasing in RFA Report	------
42	Rod Mill Former Waste Oil Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
43	Rod Mill Chloroethane Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
44	Rod Mill Cooling Tower	NH	No Further Action	No known releases, managed non-hazardous waste	------
45	Rod Mill Trenches/Sumps	SD	Further Action	Potential for environmental release	Rod & Wire Mill
46	Pipe Mill Various 55-gallon Drums	I	No Further Action	Not observed to be releasing in RFA Report	------
47	Pipe Mill Oil/Water Separator	NR	No Further Action	Not observed to be releasing in RFA Report	------

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
48	Pipe Mill Former Zinc Ammonium Chloride Sludge Storage Area	SD	No Further Action	Inactive unit, one release with subsequent soil remediation	------
49	Pipe Mill Trenches/Sumps	SD	Further Action	Focused closure-oriented project	Rod & Wire Mill
50	Billet Prep Waste Oil Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
51	Billet Prep Rinsewater Collection Tanks	I	No Further Action	Not observed to be releasing in RFA Report	------
52	Billet Prep Baghouse Collectors	NR	No Further Action	Not observed to be releasing in RFA Report	------
53	Billet Prep Trenches and Blind Sumps	SD	No Further Action	Managed non-hazardous material	------
54	Coating Lines Blind Sumps	SD	Further Action	Include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
55	Cold Sheet Mill Quencher	I	No Further Action	Not observed to be releasing in RFA Report	------
56	Cold Sheet Mill Scrubber	I	No Further Action	Not observed to be releasing in RFA Report	------
57	Cold Sheet Mill Wet Well	I	No Further Action	Not observed to be releasing in RFA Report	------
58	Cold Sheet Mill Piping	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
59	Tandem Mill Trench System	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
60	Cold Sheet Mill Empty Drum Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
61	Cold Sheet Mill Waste Oil Staging Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
62	Hot Strip Mill Basins	SD	Further Action	Condition of basins	Hot Strip Mill Area
63	Hot Strip Mill Waste Oil Tank	SD	Further Action	Include in SWMU 62 evaluation	Hot Strip Mill Area
64	Hot Strip Mill Oil Skimmer System	SD	Further Action	Include in SWMU 62 evaluation	Hot Strip Mill Area
65	Hot Strip Mill Cooling Tower	NR	No Further Action	Not observed to be releasing in RFA Report	------
66	Hot Strip Mill Waste Oil Collection Point	NR	No Further Action	Not observed to be releasing in RFA Report	------
67	Hot Strip Mill Waste Oil Accumulation Area	I	No Further Action	Not observed to be releasing in RFA Report	------
68	Hot Strip Mill Pickling Area	I	No Further Action	Not observed to be releasing in RFA Report	------
69	Hot Strip Mill Satellite Accumulation Area	I	No Further Action	Not observed to be releasing in RFA Report	------
70	Hot Strip Mill Former SPL Tank Site	NR	No Further Action	Not observed to be releasing in RFA Report	------
71	PORI Oil/Water Separator	SD	Further Action	Include in SWMU 73 evaluation	Tin Mill Canal/Finishing Mills
72	PORI Holding Tank	SD	Further Action	Include in SWMU 73 evaluation	Tin Mill Canal/Finishing Mills
73	PORI Lagoon	SD	Further Action	Condition of lagoon	Tin Mill Canal/Finishing Mills
74	Green Pellet Plant Thickeners	NR	No Further Action	Not observed to be releasing in RFA Report	------
75	Scrubbers Open Hearth Furnace #4	NR	No Further Action	Not observed to be releasing in RFA Report	------
76	Caster Dust Baghouse Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
77	Desulfurizer Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
78	Desulfurizer Collection Dumpsters	NR	No Further Action	Not observed to be releasing in RFA Report	------
79	Skimmer Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
80	Skimmer Baghouse Collection Dumpsters	NR	No Further Action	Not observed to be releasing in RFA Report	------
81	Former Open Hearth #3 Site	NR	No Further Action	Not observed to be releasing in RFA Report	------
82	Former Open Hearth #1 Site	NR	No Further Action	Not observed to be releasing in RFA Report	------
83	Caster Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
84	Tin Mill Trenches/Sumps	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
85	Tin Mill Abatement System	NR	No Further Action	Not observed to be releasing in RFA Report	------
86	Tin Mill Sump (Acid Monitoring)	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
87	Tin Mill Waste Oil Satellite Accumulation Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
88	Halogen Lines Trenches/Sumps	SD	Further Action	Include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
89	Halogen Lines Oil Skimmer	NR	No Further Action	Not observed to be releasing in RFA Report	------
90	Halogen Lines Waste Pickle Liquor Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
91	Halogen Lines Waste Plating Solution Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
92	Rolling Plate Mill Scale Pit	NH	No Further Action	No known releases, managed non-hazardous waste	------
93	Greys Landfill	SD	Further Action	Consent Decree "Special Study Area"	Greys Landfill Area
94	Greys Tar Decanter Cell	SD	Further Action	Unit contained within SWMU 93	Greys Landfill Area
95	Greys Trash Transfer Station	NR	No Further Action	Not observed to be releasing in RFA Report	------

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
96	Sinter Plant Thickener	NR	No Further Action	Not observed to be releasing in RFA Report	------
97	Sinter Plant High Density Sludge (HDS) Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
98	Sinter Plant Centrifuge Waste Pile	NR	No Further Action	Not observed to be releasing in RFA Report	------
99	Sinter Plant Drum Separator	NR	No Further Action	Not observed to be releasing in RFA Report	------
100	Sinter Plant Lime Grit Box	NR	No Further Action	Not observed to be releasing in RFA Report	------
101	Sinter Plant SPL Tanks	NR	No Further Action	Not observed to be releasing in RFA Report	------
102	Battery 12 Trash Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
103	Battery 11 and 12 Quench Pit	NR	No Further Action	Not observed to be releasing in RFA Report	------
104	Battery A Trash Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
105	Battery A Waste Oil Accumulation	SD	Further Action	Field observation of 1991 VSI	Coke Oven Area
106	Former 1-10 Batteries	NR	No Further Action	Not observed to be releasing in RFA Report	------
107	Coke Oven Gas Main	NR	No Further Action	Not observed to be releasing in RFA Report	------
108	Mechanical Shop Waste Oil Accumulation Area	SD	Further Action	Field observation of 1991 VSI	Coke Oven Area
109	AKJ Tar Decanter Batch Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
110	AKJ Tar Decanter Buckets	NR	No Further Action	Not observed to be releasing in RFA Report	------
111	Battery A Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
112	B CCP Tar Storage Tank Containment Areas	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
113	B CCP Underground Weak Ammonia Pipeline	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
114	B CCP Acid Containment Pad	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
115	B CCP Acid Tanks	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
116	B CCP Ammonia Clarifier Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
117	B CCP Lime Collection Bin	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
118	B CCP Ammonia Stills	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
119	B CCP Ammonia Saturator	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
120	B CCP Acid Surge Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
121	B CCP Wash Oil Coolers (Spiral)	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
122	B CCP Wash Oil Coolers (Shell & Tube)	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
123	B CCP Wash Oil Decanters	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
124	B CCP Wastewater Holding Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
125	B CCP Wash Oil Circulating Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
126	B CCP Scrubbers	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
127	B CCP Waste Oil Bin	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
128	B CCP API Light Oil Separators	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
129	B CCP Muck Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
130	B CCP Million Gallon Weak Ammonia Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
131	Bio-Oxidation Plant Wastewater Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
132	Bio-Oxidation Plant 1 MMG Wastewater Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
133	Bio-Oxidation Plant Depurators	NR	No Further Action	Not observed to be releasing in RFA Report	------
134	Bio-Oxidation Plant Aeration Basins	NR	No Further Action	Not observed to be releasing in RFA Report	------
135	Bio-Oxidation Plant Clarifiers	NR	No Further Action	Not observed to be releasing in RFA Report	------
136	A CCP Sulfuric Acid Tank Containment	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
137	A CCP Cyanide Stripper/Stack	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
138	A CCP Oil/Water Separator	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
139	A CCP Former Tar Decanters	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
140	A CCP Acid Saturator Tanks	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
141	A CCP Overflow Skimmer Box	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
142	A CCP Wash Oil Decanters	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
143	A CCP Scrubbers	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
144	A CCP Wastewater Holding Tank	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
145	A CCP Wash Oil Holding Tank	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
146	A CCP Sump	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area

Table 1
Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
147	B/L Oil/Water Separator	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
148	B/L Tank Sludge Staging Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
149	B/L Tank Sludge Accumulation Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
150	B/L Litol Plant Catalyst Drum Station	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
151	B/L Waste Oil Accumulation Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
152	B/L Litol Drum Staging Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
153	B/L Benzene Truck Loading Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
154	H Furnace Dust Catcher	NR	No Further Action	Not observed to be releasing in RFA Report	------
155	H Furnace Wastewater Thickener	NR	No Further Action	Not observed to be releasing in RFA Report	------
156	J Furnace Precipitators	NR	No Further Action	Not observed to be releasing in RFA Report	------
157	J Furnace Gas Washer	NR	No Further Action	Not observed to be releasing in RFA Report	------
158	J Furnace Scrubber	NR	No Further Action	Not observed to be releasing in RFA Report	------
159	J Furnace Dust Catcher	NR	No Further Action	Not observed to be releasing in RFA Report	------
160	Former J Furnace Thickener	RS	No Further Action	Not observed to be releasing in RFA Report	------
161	A-G & K Former Furnaces	RS	No Further Action	Not observed to be releasing in RFA Report	------
162	L Furnace Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
163	L Furnace Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	------
164	L Furnace Gas Scrubbers	TP	No Further Action	Not observed to be releasing in RFA Report	------
165	L Furnace Slag Piles	NH	No Further Action	No known releases, managed non-hazardous waste	------
166	RIW Pipeline	TP	No Further Action	Not observed to be releasing in RFA Report	------
167	RIW Sumps (2)	TP	No Further Action	Not observed to be releasing in RFA Report	------
168	RIW Holding Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
169	RIW Clarifying Tank	TP	No Further Action	Not observed to be releasing in RFA Report	------
170	Pilot Plant Slurry Mixing Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
171	Pilot Plant Holding Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
172	Pilot Plant Hydrocyclone	NR	No Further Action	Not observed to be releasing in RFA Report	------
173	BOF Scrubbers	NR	No Further Action	Not observed to be releasing in RFA Report	------
174	BOF Thickeners	NR	No Further Action	Not observed to be releasing in RFA Report	------
175	BOF Sand Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
176	BOF Reclaimed Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
177	BOF Mixing Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
178	BOF Recycle Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
179	BOF Belt Press Station	NR	No Further Action	Not observed to be releasing in RFA Report	------
180	BOF Reladle Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
181	BOF Separator	NR	No Further Action	Not observed to be releasing in RFA Report	------
182	Former Tar Tanks at Fuel Station	NR	No Further Action	Not observed to be releasing in RFA Report	------
183	Ball Mill Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
184	Ball Mill Waste Oil/Tar Dumpster	NR	No Further Action	Not observed to be releasing in RFA Report	------
185	Tar Decanter Buggies	RS	No Further Action	Not observed to be releasing in RFA Report	------
186	Tar Storage Box Area	RS	No Further Action	Not observed to be releasing in RFA Report	------
187	Langenfelder Wastewater Treatment Tank	NR	No Further Action	Not observed to be releasing in RFA Report	------
188	Former Sulfur Recovery Plant	NR	No Further Action	Not observed to be releasing in RFA Report	------
189	Nail Mill Drum Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
190	Humphrey Impoundment Area	SD	Further Action	Consent Decree "Special Study Area"	Humphrey Impoundment
191	Coke Point Landfill	SD	Further Action	Consent Decree "Special Study Area"	Coke Point Landfill
192	Coke Oven Sweepings Pile	SD	Further Action	Contained within SWMU 191	Coke Point Landfill
193	Regulated Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	------
194	Waste Oil Stabilization/Packing Area	SD	Further Action	Field observation of 1991 VSI	Outlier (Primary Rolling Mills Area)
195	Former ERS Oily Wastewater Tank	AI	Further Action	Unknown impacts from previous activities	Outlier (Open Hearth Furnace Area)
196	Storm water Sewer System	SD	No Further Action	Storm water and industrial wastewater combined as NPDES permitted discharge	------
197	Mason's Garage Drums	NR	No Further Action	Not observed to be releasing in RFA Report	------
198	Spent Pickle Liquor Sump and Trench System	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Investigation	Tin Mill Canal/Finishing Mills
199	Bio-Oxidation Plant Oil/Water Separator	NR	No Further Action	Not observed to be releasing in RFA Report	------

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
200	Bio-Oxidation Plant Depurator Oil Storage Tanks	NR	No Further Action	Not observed to be releasing in RFA Report	------
201	Coke Battery Repair Shop Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	------
202	BOF Treatment Plant Pipeline	NR	No Further Action	Not observed to be releasing in RFA Report	------
203	Bio-Oxidation Plant Scum Collection Chamber	NR	No Further Action	Not observed to be releasing in RFA Report	------
A	Former 3/21/91 PCB Spill Area	AD	No Further Action	One time incident occurred indoors, low release potential	------
B	Former 1988 PCB Spill Area	AD	No Further Action	One time incident occurred indoors, low release potential	------
C	Former ERS PCB Spill Area	AD	No Further Action	One time incident, soil remediation met EPA guidelines for PCBs	------
D	Former PCB Spill Area (Sheet Mill)	AD	No Further Action	One time incident occurred indoors, and remediated, low release potential	------
E	6 PCB Transformers	AD	No Further Action	PCB oil replaced by mineral oil 7/27/95	------
F	Former Slab Cut Off Spill Area	AD	No Further Action	No current evidence of impact	------
G	Former Diesel Fuel Spill Area (Slab Haul Road)	AD	No Further Action	Soil remediation approved by MDE	------
H	Mason's Garage Area	AD	Further Action	UST closure/soil remediation completed but no confirmatory sampling	Outlier (Blast Furnace Area)
I	Former 1991 Acid Leak Area	AD	No Further Action	One time incident discharged to TMC	------
J	Acid Tanks	AD	Further Action	Condition of tanks, and known releases	Tin Mill Canal and Finishing Mill
K	Truck Dock # 9's Former Diesel Spill & Diesel Fuel UST Area	AD	No Further Action	One time incident, subsequent UST closure indicated no soil contamination	------
L	Benzene/Litol Process Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
M	A Coal Chemicals Plant Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
N	Bio-Oxidation Ferric Chloride Spill Site	AD	No Further Action	One time incident of non-hazardous constituent	------
O	Hydraulic Oil Storage Area	AD	No Further Action	Unit managed non-hazardous, water-based hydraulic oil	------
P	Former Naphthalene Plant Tank & Pit	AD	Further Action	Former unit with Consent Decree "Special Study Area"	Coke Oven Areas
Q	Former Diesel Fuel UST Area (Slab Haul Road)	AD	No Further Action	UST removal and closure approved by MDE	------
R	Underground Weak Ammonia Pipeline Spill Sites	AD	Further Action	History of spills, within Consent Decree "Special Study Area"	Coke Oven Areas
S	Former Chromic Acid Spill Area	AD	No Further Action	One time incident primarily indoors with limited discharge to the TMC	------
T	Former Diesel Fuel UST (Cold Sheet Mill)	AD	No Further Action	UST removed, confirmatory soil samples indicated no contamination	------
U	B CCP Process Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
V	Former Spent Pickle Liquor Tanks	AD	No Further Action	Area same as SWMU 70 (non-releasing unit)	------
W	Spent Pickle Liquor Tanks	AD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal and Finishing Mill
X	Unknown Aboveground Tank	AD	Further Action	Focused closure-oriented project	Rod & Wire Mill
Y	Pipe Mill Selenium Testing Area	AD	No Further Action	Former operations located indoors, low release potential	------
Z	Pipe Mill Acid Tanks	AD	Further Action	Focused closure-oriented project	Rod & Wire Mill
AA	Pipe Mill Process Area	AI	No Further Action	------	------
AB	Rod and Wire Process Area	AI	No Further Action	------	------
------	County Lands	------	Further Action	Per DCCR, added as an AOC for evaluation	Greys Landfill Area (County Lands Parcel 1A)
------	Central Supply Fuel Storage Tanks	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	No. 10 Fuel Oil Tank	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	Hot Strip Mill Drum Handling Area	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	Coke Oven Gas Drip Legs	------	Further Action	Per DCCR, added as an AOC for evaluation	Plant General
Notes:					
DCCR	Description of Current Conditions Report (January 1998)				

RCRA Facility Report (RFA) Code

SD = SWMU Description included in Section 4.0 of the RFA Report
AD= AOC Description included in Section 4.0 of the RFA Report in RFA Repon
I= Units located indoors and not observed to be releasing
TP = Treatment process units managing waste not observed to be releasing
NR = Units located outdoors but not observed to be releasing
NH = Unit managing non-hazardous waste
RS = Units that no longer exist and were removed from site
AI = Additional information needed to assess potential for release
CV = Units of concern, inability to assess which unit was releasing

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Remediation	Other/Description	
TIN MILL CANAL/FINISHING MILLS AREA	1	Tin Mill Canal (TMC)	NO	HIGH					Prevent potential future direct exposure to contaminated sediments located within Tin Mill Canal; • Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater by wastewater treatment facility
	2	TMC Discharge Pipes	NO	LOW				Limited Impact to Site Condition	
	3	TMC Oil Skimming Devices	NO	LOW	XX				
	5	TMC Waste Oil Storage Tanks	NO	LOW	XX				
	7	Recent TMC Embankment Dredgings	NO	LOW			XX		
	8	TMC Brill Skimmer Pits	NO	LOW			XX	Pits replaced by tank units	
	9	Former TMC Oil Collection Dumpster	NO	LOW	XX				
	14	HCWWTP Spent Pickle Liquor (SPL) Discharge Point	NO	LOW				Beneficial reuse of SPL as wastewater treatment chemical, discharge point is to TMC	
	26	Chrome Recovery Filtrate Sump	NO	LOW		XX	XX		
	54	Coating Lines Blind Sumps	NO	LOW		XX	XX		
	58	Cold Sheet Mill Piping	NO	LOW		XX	XX		
	59	Tandem Mill Trench System	NO	LOW		XX	XX		
	71	PORI Oil / Water Separator	NO	LOW	XX				
	72	PORI Holding Tank	NO	LOW	XX				
	73	PORI Lagoon	NO	HIGH					Prevent potential future direct exposure to contaminated sediments ; • Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater by wastewater treatment facility
	84	Tin Mill Trenches / Sumps	NO	LOW		XX	XX		
	86	Tin Mill Sump (Acid Area Monitoring)	NO	LOW		XX	XX		
	88	Halogen Lines Trenches / Sumps	NO	LOW		XX	XX		
	198	SPL Sump and Trench System	NO	LOW		XX	XX		
	- -	AOC B: Former 1988 PCB Spill Area	NO	LOW		XX	XX		
	- -	AOC D: Former PCB Spill Area (Sheet Mill)	NO	LOW		XX	XX		
	- -	AOC I: Former 1991 Acid Leak Area	NO	LOW		XX	XX		
	- -	AOC J: Acid Tanks	NO	LOW	XX				
	- -	AOC S: Former Chromic Acid Spill Area	NO	LOW		XX	XX		
	- -	AOC T: Former Diesel Fuel UST (Cold Sheet Mill)	NO	LOW			XX		
	- -	AOC W: Spent Pickle Liquor Tanks	NO	LOW	XX				

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
ROD AND WIRE AND PIPE MILLS AREA	27	Rod Mill Remediation Area	NO	HIGH					Prevent potential future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater; • Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure requiring pumping and treatment of groundwater
	28	Northwest Pond	NO	LOW				Investigated in 1986 - determined that no significant soil contamination was present in the former pond area.	
	29	East Pond	NO	HIGH					Prevent potential future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater; • Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure requiring pumping and treatment of groundwater
	30	Rod Mill Equalization Tanks	NO	LOW	XX				
	38	Cadmium Treatment Trenches	NO	LOW	XX				
	39	Rod Mill Scale Pits	NO	LOW	XX				
	44	Rod Mill Cooling Tower	NO	LOW	XX				
	45	Rod Mill Trenches/Sumps	NO	LOW	XX	XX			
	48	Pipe Mill Zinc Ammonium Chloride Sludge Storage Area	NO	LOW	XX				
	49	Pipe Mill Trenches / Sump	NO	LOW	XX	XX			
	53	Billet Prep Trenches and Blind Sumps	NO	LOW	XX	XX			
	- -	AOC O: Hydraulic Oil Storage Area	NO	LOW	XX				
	- -	AOC X: Unknown Aboveground Tank	NO	LOW	XX				
	- -	AOC Y: Pipe Mill Selenium Testing Area	NO	LOW	XX				
	- -	AOC Z: Pipe Mill Acid Tanks	NO	LOW	XX				
HOT MILL AREA	62	Hot Strip Mill Basins	NO	LOW	XX	XX	XX		
	63	Hot Strip Mill Waste Oil Tank	NO	LOW	XX	XX			
	64	Hot Strip Mill Oil Skimming System	NO	LOW	XX				
	- -	AOC A: Former 3/21/91 PCB Spill Area	NO	LOW		XX	XX		
	- -	AOC K: Truck Dock #9's Former Diesel Spill & Diesel Fuel UST Area	NO	LOW			XX	Spill at UST area, remediation completed in 1990	
	- -	AOC V: Former Spent Pickle Liquor Tanks (2)	NO	LOW	XX			Identified as non-releasing unit, removed inapproximately 1986.	
	- -	Hot Strip Mill Drum Handling Area	NO	LOW					
GREYS LANDFILL AREA	93	Greys Landfill	NO	LOW				compliance groundwater monitoring program in place	
	94	Greys Tar Decanter Cell	NO	MEDIUM					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	- -	County Land Parcel 1A--contractor area fuel and oil tanks	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--tank near Greys Landfill	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--former drum storage area	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--coal tar area	NO	MEDIUM					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
COKE POINT AREA	105	Battery A Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	108	Mechanical Shop Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	112	B CCP Tar Storage Tank Containment Areas	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	113	B CCP Underground Weak Ammonia Pipeline	NO	HIGH	XX		XX		Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	114	B CCP Acid Tank Containment Pad	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	115	B CCP Acid Tanks	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	116	B CCP Ammonia Clarifier Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	117	B CCP Lime Collection Bin	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	118	B CCP Ammonia Stills (2)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	119	B CCP Ammonia Saturator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	120	B CCP Acid Surge Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	121	B CCP Wash Oil Coolers (Spiral)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	122	B CCP Wash Oil Coolers (Shell and Tube)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	123	B CCP Wash Oil Decanters	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	124	B CCP Wastewater Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	125	B CCP Wash Oil Circulating Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	126	B CCP Scrubbers	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	127	B CCP Waste Oil Bin	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	128	B CCP API Light Oil Separators (2)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	129	B CCP Muck Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	130	B CCP Million Gallon Weak Ammonia Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	136	A CCP Sulfuric Acid Tank Containment	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	137	A CCP Cyanide Stripper / Stack	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	138	A CCP Oil / Water Separator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	139	A CCP Former Tar Decanters (3)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
COKE POINT AREA	140	A CCP Acid Saturator Tanks	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	141	A CCP Overflow Skimmer Box	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	142	A CCP Wash Oil Decanters	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	143	A CCP Scrubbers	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	144	A CCP Wastewater Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	145	A CCP Wash Oil Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	146	A CCP Sump	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	147	B / L Oil / Water Separator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	148	B / L Tank Sludge Staging Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	149	B / L Tank Sludge Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	150	B / L Litol Plant Catalyst Drum Station	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	151	B / L Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	152	B / L Litol Drum Staging Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	153	B / L Benzene Truck Loading Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	191	Coke Point Landfill	NO	MEDIUM					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	192	Coke Oven Sweepings Pile	NO	LOW				combine with Coke Point Landfill	
	- -	AOC L: Benzene / Litol Process Area (SWMUs 147-153)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	- -	AOC M: A Coal Chemical Plant Area (SWMUs 136-146)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	- -	AOC N: Bio-Oxidation Ferric Chloride Spill Site	NO	LOW	XX			Contaminated surface materials at spill site removed.	
	- -	AOC P: Former Naphthalene Plant Tank & Pit	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	- -	AOC R: Underground Weak Ammonia Pipeline Spill Sites (3)	NO	LOW	XX				
	- -	AOC U: B Coal Chemicals Plant Process Area (SWMUs 112-130)	NO	HIGH					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
FURNACE AREAS	165	L Furnace Slag Piles	NO	LOW	XX			slag by-product materials	
	- -	AOC H: Mason's Garage Area	NO	LOW	XX		XX	UST remediation.	
	195	Former ERS Oily Wastewater Tank	NO	LOW				Tank removed late 1980's	
	- -	AOC C: Former ERS PCB Spill Area	NO	LOW	XX			Materials excavated and disposed off-site. Area backfilled with slag.	
HUMPHREY IMPOUNDMENT	190	Humphrey Impoundment	NO	MEDIUM					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	4	TMC Dredging Containment Areas	NO	HIGH					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	6	TMC Impoundments	NO	HIGH					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
PRIMARY ROLLING MILLS AREA	92	Plate Mill Scale Pit	NO	LOW			XX		
	194	Waste Oil Stabilization/Packing Area	NO	LOW	XX		XX		
	- -	AOC F: Former Slab Cut Off Spill Area	NO	LOW			XX	No oil-stained soil observed during April 1997 site inspection	
	- -	AOC G: Former Diesel Fuel Spill Area (Slab Haul Road)	NO	LOW			XX		
	- -	AOC Q: Former Diesel Fuel UST Area (Slab Haul Road)	NO	LOW	XX		XX		
GENERAL	- -	County Land Parcel 1B	NO	LOW				BERA work	
	- -	County Land Parcel 2	NO	LOW				BERA work	
	- -	County Land Parcel 3A	NO	LOW				land use	
	- -	County Land Parcel 3B	NO	LOW				land use	
	- -	Central Supply Fuel Storage Tanks	NO	LOW	XX				
	- -	No. 10 Fuel Oil Tank	NO	LOW	XX		XX	UST remediation complete	
	- -	Coke Oven Gas Drip Legs	NO	MEDIUM					
	196	Stormwater Sewer System	NO	LOW				NPDES coverage	
	- -	AOC E: 6 PCB Transformers	NO	LOW				Transformers replaced in 1995.	

Table 3
REMEDIATION PLAN OUTLINE

FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Coke Oven Area	1. Contaminants of Concern (COCs) include benzene, naphthalene, and NAPL affecting primarily: a. Subsurface fill and deeper soil b. Groundwater 2. NAPL plume impacting several acres 3. Dissolved benzene/ napthalene plumes impacting shallow and intermediate GW 4. Potential off-site migration of impacted groundwater	1. Remove NAPL/source areas to mitigate continuing migration to GW 2. Mitigate benzene and naphthalene migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations 3. Mitigate potential off-site migration of benzene	Achieve closure of this Special Study Area (SSA) consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP Sparrows Point LLC (HRP), Sparrows Point LLC (SPLLC) and the Regulator(s).	Site Wide Investigation (SWI)/Interim Measure (IM) Upgrade Work Plan	• Site Investigation Work • Groundwater fate and transport modeling • Risk Assessment • IM Upgrade Workplan	Additional data collection required to scope final remedy; contemplated that groundwater modeling and risk assessment may be part of CMS.	12 to 24 Months from Closing: IM Upgrade Work Plans/CMS Completed and Submitted for Regulatory Approval. 12 to 36 Months from Approval: Corrective Measures Implementation Complete. ~120 Months from CMI Completion: Semi-Annual groundwater monitoring.
				IM Upgrade Work	• In-situ source area treatment • Removal/treatment of Cell 6 source materials • In-situ barrier/flow-thru treatment Cell 2 • Operate pump and treat system Cell 2 temporary basis • Decommission Cells 1,3, and 6 and cell 2 (future) • Modify cells 4/5 to incorporate source area treatment	Treat source areas with physical removal of NAPL materials followed by in-situ treatment of benzene and naphthalene; install an in-situ barrier (slurry wall ~60 ft. deep) for portion of area near Cell 2 to minimize migration of impacted groundwater to shoreline and shipyard area. Slurry wall may also incorporate funnel and gate features.	
				Corrective Measure Study (CMS)	• Additional data collection Cell 4/5 • Risk assessment • Alternative analysis • Engineering plans	See above.	
				Corrective Measure Implementation (CMI)	• In-situ source treatment Cell 4/5 area • Semi-annual groundwater monitoring 10 years	See above.	
Humphrey Impoundment	1. COCs likely to include metals, organics, or oil & grease affecting: a. Surface Material b. Groundwater	1. Mitigate unacceptable future exposure to surface material 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations	Achieve closure of this SSA consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	CMS	• BERA Results • Remedial action to be integrated with future development • Institutional controls to limit direct contact exposure pathway	Final BERA submitted to agency in 2011 (requires agency approval); surgical hot spot removal (possibly as part of development); further investigation work may be needed for risk assessment or TMC dredge spoil containment areas; use modeling and risk-based approach through BERA and risk assessment to confirm no additional action required.	12 to 24 Months from Closing: CMS Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval: Corrective Measures Implementation Complete. ~60 Months from CMI Completion: Semi-Annual groundwater monitoring .
				CMI	• Institutional controls, fencing, etc. • Regrading, establishment and delineation of permanent wetlands • Groundwater Monitoring	Depending on risk assessment, may require additional GW monitoring.	
Former Rod and Wire/Pipe Mill	1. Contaminants of Concern (COCs) include elevated cadmium and zinc affecting: a. Surface soil b. Subsurface soil c. Groundwater 2. Groundwater plume affects on the order of 3 to 10 acres	1. Mitigate future exposure to surface soil 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations 4. Eliminate remedial GW discharge requiring treatment	Achieve closure of this area through the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	SWI/IM Upgrade Work Plan	• IM Workplan • Site Investigation Work • Groundwater flow modeling (incl. fate & transport) • Risk Assessment • IM engineering plan	Define extent of area to be treated through additional sampling; sample for COCs and treatability parameters (grain size, etc.); update GW flow modeling and risk assessment to assist in development of remedial objectives and corrective measure.	12 to 24 Months from Closing and Regulatory Approval: Revised IM Work Plan and Construction Completion. ~120 Months from Construction Completion: Completion of Semi-Annual groundwater and performance monitoring.
				IM Upgrade Work	• IM Workplan • In-situ source area treatment • Excavation/removal of surface soil materials • Clean soil cover 5 acres • Decommission pump and treat system	Source Area: In-situ stabilization (pozzolanic cement material) of impacted zones (estimated at an aggregate of 2 acres from the ground surface to a depth of approximately 20' to 30' below grade); decommission pump and treat system. Downgradient/Shoreline Area: Possibly install continuous permeable reactive barrier (PRB) or funnel & gate PRB system using BOF slag, ZVI material (possibly in a replaceable "cassette" format); continuing groundwater monitoring.	
				CMS	• Review of adequacy of IM as final corrective action	Same as above	
				CMI	• Semi-annual groundwater monitoring for 10 years	Same as above; expect additional GW monitoring to confirm final remedy effective.	

Table 3
REMEDIATION PLAN OUTLINE

FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Tin Mill Canal (TMC)/Finishing Mills	1. COCs include elevated metals, organics or oil & grease affecting: a. Canal sediment and banks b. Stormwater conveyed by canal 2. Affected area appears to include entire length and width of the canal	1. Mitigate future exposure to sediment and banks 2. Eliminate potential future discharges from process outfalls to canal 3. Mitigate COC impact to stormwater conveyed by canal 4. Eliminate discharge of stormwater requiring treatment by HCWWTP	Achieve closure of this SSA consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	TMC Sediment Removal Work Plan	• Investigation Work • Engineering Plans	Additional data collection required to define area of sediments that require removal and to provide a waste characterization.	Timing somehwat dependent on ongoing demolition activities. Also timing may tie in with development activities. 12 to 24 Months from Closing: Investigative Work, Engineering Plans, CMS Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval and Completion of Nearby Demolition Activities: Sediment removal and channel stabilization complete.
				TMC Sediment Removal and Channel Stabilization	• Sediment Removal and Disposal • TMC stabilization with rip rap	Plan to remove and dispose of impacted sediments; assume approximately 50,000 - 60,000 cu yds. of material to be removed; assume approximately 75% non-hazardous and taken to Greys Landfill and approximately 25% hazardous and taken off-site for proper disposal; backfill will consist of rip rap from clean demo materials, slag aggregate, etc.	
				CMS	• Coordination with NPDES requirements, surface water discharge modeling	Conduct surfacewater modeling and risk assessment to demonstrate meet objectives at the point of compliance (outfall discharge point).	
				CMI	• Stormwater retention basin(s), possible constructed wetland treatment, gravity discharge to bypass HCWWTP (design dependent upon site development requirements)	Stormwater retention basin(s), or possibly constructed wetland treatment may be effective solutions (design dependent upon site development requirements).	
Greys Landfill Area (County Lands)	1. COCs include VOCs or SVOCs affecting: a. Surface soil b. Groundwater 2. Areas affected include Spare parts/ Contractor's Area; former County Lands; Small source of VOC impact	1. Mitigate future exposure to surface soil over a 5 to 10 acre area (to be further defined) 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations	Achieve closure of this area through the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s). Possibly through the Maryland Department of Environment (MDE) Voluntary Cleanup Program (VCP) or similar process.	CMS	• Additional data collection • Risk assessment • Alternative analysis	Additional data collection required to define area of GW impacts.	12 to 24 Months from Closing: Investigative Work, Risk Assessment, Alternatives Analysis Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval: In-Situ Source Treatment and Cover Completed. ~60 Months from Construction Completion: Semi-Annual Groundwater Monitoring.
				CMI	• In-situ source treatment • Cover materials placed over approximately 10 acres • Groundwater monitoring	Apply 1 to 2 applications of in-situ treatment followed by groundwater monitoring activities; anticipate that some cover material may be placed over 5 to 10 acres to mitigate contact exposure; use modeling and risk assessment to demonstrate compliance.	
Greys Landfill Operation, Closure and Post Closure Care	1. Operating landfill that will require closure by placement of final cover and post closure care 2. Limited occurrence(s) of elevated metals, benzene or naphthalene affecting local GW	1. Closure at end of operating life 2. Mitigation of migration to groundwater	Certification of Closure from the MDE and Certification that Post Closure Care requirements have been met	Active landfill operation	Anticipate landfill will operate for approximately 5 years accepting non-hazardous remediation waste, HCWWTP sludge, groundwater monitoring	Plan to keep active until reach closure elevation; anticipate that approximately 300,000 - 400,000 cu yds. remain available.	12 to 24 Months from Acceptance of Final Load of Waste (or as otherwise specified in the permit): Final closure of landfill complete. 60 Months from Final Closure: Post-Closure Monitoring complete as specified in permit/Consent Decree.
				Final Closure	Per the approved engineering design, continuation of closure cap from 85' bench	Will close in accordance with approved Landfill Closure Plan.	
				Post Closure Care	A minimum of 5 years.	Estimated that Post Closure Care will last a minimum of 5 years.	

Table 3
REMEDIATION PLAN OUTLINE

FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Coke Point Landfill Closure and Post Closure Care	1. Non-operating landfill requiring closure by placement of final cover and post closure care 2. Limited occurrence(s) of elevated metals, benzene or naphthalene affecting local GW	1. Closure of this non-operating landfill 2. Potential mitigation to groundwater; transport to shoreline point of compliance	Certification of Closure from the MDE and Certification that Post Closure Care requirements have been met	Final Closure	• Conceptual design • Final engineering design • Closure cap installation	Due to location in close proximity to shoreline and high profile nature, expect that acceptance for additional use of this landfill will be extremely difficult to achieve; In process of proposing to reduce footprint of landfill to 20 acres for closure obligation; anticipate closure plan to look similar to Greys with no interim closures and a 3-layer cap on level areas and 1-layer cap on side slopes.	Expect to finalize a Closure Plan during 2015. 12 to 24 Months from Closing: Closure Plan Submitted for Regulatory Approval. 12 to 24 Months from Approval: Closure Construction Complete. 120 Months from Closure Completion: Groundwater monitoring per approved Closure Plan complete.
				Post Closure Care	A minimum of 5 years.	Estimated that Post Closure Care will last a minimum of 5 years.	
Site Wide Work (outside of SSAs)	1. Unknown; Phase I ESA in process; RECs will be evaluated to assess whether further assessment is warranted. 2. COCs anticipated to be consistent with site-wide conditions and include hazardous substances and petroleum products.	Anticipate that drivers will be consistent with the process set forth by the MDE VCP.	Achieve closure of select areas parcel by parcel through the mechanism outlined within the Agreement between HRP, SPCCL, and the Regulator(s). Possibly through the MDE VCP or similar process.	Phase I ESA	• Complete Phase I ESA; identify RECs that fall outside of SSAs • Evaluate whether additional assessment is warranted	Risk-based remediation and closure approach anticipated to include institutional controls or engineered barriers; dependent on results of the Phase I ESA and Phase II ESA (if needed).	Phase I ESA to be completed as part of due diligence activities prior to Closing. Select Phase II ESA activities may be completed prior to Closing. 12 to 24 Months from Closing: Complete additional investigation as needed and evaluate need for remediation.
				Phase II ESA	• Perform Phase II ESA work in areas selected for further assessment • Evaluate human health risk pathways focused on worker exposure/future development • Develop plan to mitigate identified exposures • Evaluate risk-based closures through use of institutional controls and engineered barriers		
				Remediation Implementation (if needed)	• Implement remediation in areas unable to be closed through risk-based options • Prepare appropriate reports documenting compliance with remediation objectives		

Exhibit 4

COMMENTS ON SITE CONCEPTUAL CLEANUP PLAN

June 26, 2014

The U.S. Environmental Protection Agency Region III (EPA) and the Maryland Department of the Environment (MDE, collectively, agencies) have reviewed the May 22, 2014 Site Conceptual Cleanup Plan (SCCP) submitted by Sparrows Point LLC (SPLLC). As the agencies and SPLLC have previously discussed, the agencies understand that the SCCP is intended to be a conceptual path forward for work that would be required under the state Administrative Order on Consent (AOC) that is being negotiated between MDE and SPLLC, which work is also expected to fulfill EPA's RCRA corrective action requirements. This SCCP is not required by the agencies, and the following comments are not binding on the agencies. With this understanding, the agencies believe that SPLLC can move forward with the development of the site wide Response Action Plan, taking into account the following comments:

Tin Mill Canal – SPLLC proposes to clean out the Tin Mill Canal (TMC) and its tributary PORI lagoon by removing all accumulated sediments down to the slag base, retaining the TMC as a storm water drainage ditch. Although the TMC no longer receives waste water discharges from the closed steel mill, it continues to receive contaminated stormwater runoff and groundwater seepage from a large portion of the facility. The discharge from Tin Mill canal is presently treated by the Humphrey Sewage Treatment Plant (HSTP) to meet NPDES limits. The future status of the HSTP is unknown. The Agencies require that the HSTP continue operation until completion of the TMC cleanout. At that time, testing of the TMC water is required to determine whether treatment of the TMC discharge is needed to meet NPDES limits by either continued operation of the HSTP, or by installation of a new treatment unit.

Former Rod and Wire Mill – SPLLC proposes to evaluate a new approach to remediate the zinc and cadmium plume, ultimately replacing the decades-old Interim Measure (IM). The existing IM recovers contaminated groundwater by pumping and piping the discharge to the HSTP for treatment. The new approach calls for source removal and solidification, and construction of a permeable reactive barrier (PRB) or a funnel & gate PRB system for passive groundwater treatment to replace the existing IM and eliminate the ¾ mile long pipeline to the HSTP. Since the effectiveness of the PRB is unknown, the existing IM must continue to operate until pilot testing can demonstrate that the new approach will likely be effective.

Coke Oven Area

Cell 1 – No new work is projected for Cell 1, which currently recovers about 3000 lb of benzene a year by air sparging and vapor extraction.

Cell 2 – SPLLC proposes to install a ½ mile slurry wall near Cell 2 to reduce migration of contaminated groundwater to the shipyard shoreline. The response measures may include a combination of a slurry wall and a PRB as the next goal to replace active remediation with passive groundwater treatment. EPA supports the construction of a slurry wall to enhance the operation of Cell 2. However, complete elimination of active remediation and replacement with passive groundwater treatment may not be feasible in the short term due to high source concentrations. Active remediation by Cell 2 must continue until pilot testing can demonstrate that the PRB will likely be effective. Note that a PRB is not

strictly a passive remediation as it requires active monitoring and replenishment of PRB material should contaminant breakthrough appear imminent.

Cell 3 – SPLLC proposes to double or triple the size of the existing air sparging and vapor extraction IM, and replace existing catalytic oxidation with granulated activated carbon for off gas treatment. EPA supports the proposed expansion and treatment changes. Since the napthalene plume (exceeding 1 percent solubility limit) is intercepting the shoreline at Cell 3, SPLLC should evaluate groundwater pumping and/or installation of a deflection wall to enhance plume containment as the next goal.

Cell 4/5 –SPLLC has previously acknowledged that thus far Cell 4 anaerobic bio-treatment is not effective. With the agencies' approval, SPLLC is now addressing the areas covered by Cells 4 and 5 with a dual phase extraction system to remediate the napthalene plume. SPLLC proposes to evaluate surfactant and chemical oxidation enhancement as the next goal. EPA is awaiting startup of Cell 5 to evaluate its effectiveness before consideration of the next goal.

Cell 6 - SPLLC proposes to expand source removal in Cell 6 by exploring new recovery wells, specifically around the former LNAPL recovery area that has not been adequately characterized. SPLLC also proposes to evaluate surfactant/oxidation enhancement to accelerate source removal as the next goal. EPA is awaiting success of identifying new recovery wells before consideration of the next goal. EPA welcomes proposals to enhance remediation, provided that pilot testing can demonstrate that the proposed enhancements will likely be effective. Meanwhile the existing IMs must continue to be implemented. Furthermore, EPA disagrees with SPLLC proposal that product recovery can be terminated "when its rate of recovery during normal operation declines to less than two gallons per month." Product recovery must continue to the maximum extent practicable as determined by the Agencies; at which time, other source reduction measures may be required.

Humphrey Impoundment and Finishing Mill - No active remediation is proposed. EPA anticipates that institutional controls, monitoring and small hot spots removal will likely be the remedy.

Greys Landfill

As previously discussed with SPLLC and MCM, there are outstanding compliance issues and modifications to the operations manual that must be addressed to continue operating Greys Landfill as a solid waste landfill. Closure plans have been submitted for final closure.

The hazardous waste cell at Greys Landfill must be addressed as well. The plan should include a current inspection of the existing cap and compliance with the following:

1. A closure plan will need to be prepared and submitted to MDE for review and approval detailing how the closure requirements specified in COMAR 26.13.05.14J and 26.13.05.07 will be met. Closure will require design and installation of an engineered cap for the landfill and hazardous waste cell. Implementation of the closure plan will have to be certified by a professional engineer, and a notice will have to be attached to the deed.

2. A post-closure plan will need to be prepared and submitted to MDE for approval as part of a post-closure permitting process. Elements of the post-closure plan will include:

- An inspection plan specifying how the site will be evaluated on a regular schedule to determine whether the site is secure and the containment structures/features associated with the waste management unit are intact and performing as designed.
- Regular inspections in accordance with the inspection plan, and implementation of any actions necessary to address problems discovered in performing the inspections.
- Specification of routine maintenance that will be performed to assure the continued integrity of the containment structures/features associated with the waste management unit (mowing of a vegetative cover, removal of tree seedlings from the cover, repair of any erosion damage or damage from subsidence, etc.).
- Collection and management of any landfill leachate generated.
- Installation and maintenance of a groundwater monitoring network that meets the requirements of COMAR 26.13.05.06 - 26.13.05.06-7.
- A program of groundwater monitoring with at least semi-annual sampling.
- A program of statistical analysis of groundwater data to determine if there have been releases of hazardous waste constituents beyond a point of compliance.
- Preparation and submission of reports of the results of the groundwater monitoring.
- Regular maintenance of the groundwater monitoring network.
- If the containment features are failing to prevent releases, corrective measures will have to be implemented to address the situation.

The post-closure care period is a minimum of 30 years following closure, with MDE having authority to extend the post-closure care period beyond 30-years if the Department finds that doing so is necessary to protect human health and the environment. For a unit closed with waste left in place, the presumption is that risks will remain beyond the initial 30-year post-closure period, so it is likely that the post-closure obligations will continue beyond 30 years.

SPLLC will have to develop a cost estimate for the post-closure care activities during the initial post-closure period, and obtain financial assurance that serves as a sufficient source of funds to cover the costs of the post-closure care activities if SPLLC is not financially able to perform them. The financial assurance obligation will be for a 30-year period going forward from closure, with the cost estimate to be updated annually.

<u>Coke Point Landfill</u>

MDE cannot approve or comment on a plan to reduce the footprint of Coke Point Landfill to 20 acres until a further report is submitted. At this time assume monitoring period is a minimum of 30 years.

The cleanup plan should include the installation of additional wells to characterize the extent of the benzene “hot spot” at the eastern portion of the landfill as previously proposed by Sparrows Point LLC. Additional remedial measures may also be required at this location.

<u>Non-SSA areas</u>

The term "market ready" is not specifically defined. SPLLC must explain whether a particular parcel will require that all remedial work be completed prior to receiving a No Further Action (NFA) letter from MDE and proceeding with redevelopment, or if (as provided in the Voluntary Cleanup Program (VCP) under an approved Response Action Plan), site redevelopment activities are also proposed to be

considered a remedial measure (e.g. installation of hardscapes such as building slabs, parking lots etc. as a cap on contaminated soil).

In accord with MDE's October 4, 2013 Letter to SPLLC, all parcels will require an ASTM E 1527-13 compliant Phase I and Phase II study. Additional sampling parameters such as asbestos in soil, cyanide, metals etc. may be required in certain areas based on historical usage. Shallow groundwater samples may also be required to determine potential soil vapor intrusion impacts. Slag will require characterization as will any material from slag recycling proposed as fill material.

If during a Phase II investigation free phase petroleum product (LNAPL) is encountered in monitoring wells, i.e. potentially at machine shop #2, remedial measures will not be considered complete until all free phase product is eliminated, based on gauging data not recovery rates.

The cleanup plan should also note that based on proposed land use under the VCP (commercial and industrial) there may be different cleanup goals that will have to be met. Going forward, a more specific discussion on the risk assessment process should be included in required documents.

The cleanup plan must contain a provision for soil management regarding disposal of contaminated material and importation of clean fill that meets VCP clean fill requirements. The cleanup plan should also include provisions for ensuring parcels that have been remediated are not re-contaminated by on-going site activities.

The entire site will be subject to institutional controls prohibiting the use of any groundwater-(shallow, intermediate or deep) for any purpose other than monitoring or remedial activities and prohibiting any use of the site for residential and/or recreational purposes.

Based on the number and size of parcels proposed for review the 12-24 month evaluation period may be overly optimistic.

Additionally, EPA has several specific questions and comments on the following elements of the SCCP:

<u>Section 3.2.10</u> Wastewater Treatment Systems, last bullet on page 3-5: This bullet states that this plant (Chromium High Density Sludge (HDS) Plant) is not scheduled for demolition. Does this bullet mean the plant is not presently scheduled for demolition, but there is chance that it will be scheduled for demolition in the near future? Demolition of chromium plant requires special attention due to high toxicity of the chromium sludge.

<u>Section 4.2.1</u> Coke Point Area description - The third full paragraph on page 4-3 indicates the areal extent of the VOC and SVOC groundwater impacts is confined to the Coke Point fill portion of the Sparrows Point peninsula and has not migrated to the area north of the Coke Oven area. However, the first paragraph on page 4-3 indicates that groundwater pumping associated with the off-site shipyard located northwest of Coke Point directly affects the transport of impacted groundwater. The shipyard pumping in fact has been impacted by VOCs, so impacted groundwater has migrated to the area north of the Coke Oven area.

<u>Section 5.2</u>, Closure Approach - The text states that approximately 2400 acres of the Site will be carved out from the jurisdiction of the Consent Decree, referencing Figure 5. Note that EPA has provided SPLLC a revised map of the facility, showing the potential carve out area to be approximately 2200 acres.

Section 5.3.1.1 - Coke Point Area, page 5-3 - The text states that the groundwater has a radial flow pattern moving towards the shoreline. The text should also indicate in this section that off-site pumping at the Shipyard to the north also affects contaminant distribution in groundwater and may present other exposures that need to be evaluated.

Section 5.3.1.1 Coke Point Area, page 5-4 - The text indicates the output of the model will be used to estimate chemical concentrations in sediments, sediment pore water, and in the surface water column. Is the intent of this estimation to help calibrate the model relative to actual concentrations in these media, or is the estimation being proposed in lieu of data collection? The Agencies accept modeling as a design tool, not in lieu of collecting monitoring data to demonstrate compliance of standards.

Section 5.3.1.1 Coke Point Area, page 5-4 – "Location and rate of groundwater pumping in the Shipyard" should be added to the list of 10 key factors in groundwater modeling simulation.

Section 5.3.1.1 Coke Point Area, page 5-5 - The text describing evaluation of ecological and human health risks in the off-site near shore areas should also include risks associated with groundwater pumping at the Shipyard.

Section 5.3.1.1.3, Dissolved Groundwater Plumes (Cell 2). On page 5-6, the text states that a subsurface low permeability barrier is proposed to be installed, but on page 5-7 the text suggests that that it might not be when it states "Flow barrier design(s), if used… " Please reconcile the two inconsistent statements.

Section 5.3.1.4 last paragraph, Page -5-13 "This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring" On Page 5-3, second paragraph "Cleanup actions designed to address defined remedial objectives may be implemented as interim measures that would then be subject to monitoring and institutional controls identified as part of a subsequent corrective measures study and the associated corrective measures." It is unclear what "post remediation obligations" mean, or whether Respondent fails to recognize that interim measures is not the same as a final remedy because it has not been subject to public comment and evaluation in accordance with EPA's remedy selection criteria.

Exhibit 5

THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT	*	**LAND MANAGEMENT ADMINISTRATION 1800 Washington Blvd. Baltimore, Maryland 21230**
vs.	*	
SPARROWS POINT TERMINAL, LLC	*	**MDE Case No.**
	*	

* * * * * * * * * * * * *

ADMINISTRATIVE CONSENT ORDER

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I. STATEMENT OF PURPOSE

Sparrows Point Terminal, LLC ("SPT") and the Maryland Department of the Environment, through its Land Management Administration (the "Department" or "MDE"), through its counsel Douglas Gansler, Attorney General, and Matthew Zimmerman and Sari Levin, Assistant Attorneys General, (collectively the "Parties"), hereby represent and acknowledge that they agree and enter into this Administrative Consent Order ("Agreement") pursuant to the authority vested in the Secretary of the Department under applicable provisions of Sections 1-301, 7-201 through 7-268 and 9-301 et seq. of the Environment Article of the Annotated Code of Maryland ("Environment Article"), and the Code of Maryland Regulations ("COMAR") 26.14.01 and .02.

This Agreement was requested by SPT and is voluntarily entered into by and between the Parties. The Parties acknowledge that this Agreement has been negotiated in good faith. The purpose of this Agreement is to protect public health, welfare and the environment by providing a framework for prompt and effective remedial measures to address, treat, control, prevent or mitigate the presence and/or releases of contaminants of concern at the facility located at 5111 North Point Boulevard, Sparrows Point, Baltimore County, Maryland.

II. RECITALS

WHEREAS, SPT is a limited liability company with its principal place of business located at 7301 Parkway Drive Hanover, Maryland 21076;

WHEREAS, this Agreement concerns a facility commonly known as the "Sparrows Point Facility," with addresses of 1430 Sparrows Point Boulevard and 5111 North Point Boulevard, Sparrows Point, Baltimore County, Maryland and consisting of an approximately

3,100-acre peninsula generally bounded by the Back River, Bear Creek, and the Northwest Branch of the Patapsco River (hereinafter, "Site");

WHEREAS, the Site is depicted generally on the map attached as Exhibit A;

WHEREAS, the Site was originally owned and operated by Bethlehem Steel Company ("BSC") as an integrated iron and steel manufacturing operation from 1916 until approximately 2003;

WHEREAS, the Site is currently subject to a Multi-Media Consent Decree between the United States Environmental Protection Agency ("EPA"), the Maryland Department of the Environment ("MDE") and BSC, which was entered in 1997 in the U.S. District Court for the District of Maryland, Case Nos. JFM-97-558 and JFM-97-559, captioned *United States of America and State of Maryland, Maryland Department of the Environment v. Bethlehem Steel Corporation*, as amended ("BSC Consent Decree"), which sets forth, among other obligations, certain requirements for investigating contamination associated with historical iron and steelmaking operations and implementing interim measures to address such contamination;

WHEREAS, MDE and EPA have been overseeing the investigation of releases of Waste Materials from the Site conducted in accordance with the BSC Consent Decree and have received numerous reports regarding the Site-Wide Investigation efforts, including but not limited to the *BSC Site-Wide Investigation: Release Site Characterization Study (2002)* and the *Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater from the Special Study Area (2005)*;

WHEREAS, MDE and EPA have approved and overseen the implementation of remedial measures at the Site under the BSC Consent Decree, which include: groundwater

extraction at the former Rod and Wire Mill, stabilization of Grey's Landfill, and installation and operations of Cells 1 through 6 in the Coke Oven Area;

WHEREAS, SPT seeks to acquire the Site from its current owner, Sparrows Point LLC ("SPLLC") and remediate and redevelop the property into a transportation, manufacturing, and logistics industrial campus;

WHEREAS, SPT applied to Maryland's Voluntary Cleanup Program ("VCP") as an Inculpable Person, on June 26, 2014;

WHEREAS, under this Agreement, SPT agrees to cause to be performed certain investigations, response and remedial actions at the Site in accordance with Environment Article, Titles 7, 5, 9 and RCRA, as well as the terms of the BSC Consent Decree;

WHEREAS, in order to resolve uncertainty as to SPT's liability if any, for offshore contamination, MDE agreed to accept the sum of $3 million, which will be used for the specific and dedicated purpose of investigating, and to the extent necessary, remediating Existing Contamination which is located offshore of the Site. Recognizing that scarce resources must be efficiently allocated in order to swiftly achieve Site-wide remediation and redevelopment that is protective of human health and the environment, MDE, EPA and SPT have agreed that SPT will transfer the $3 million to EPA, to be used exclusively for the offshore work described above. EPA will assume primary responsibility for implementing work offshore, working closely with and acting in consultation and cooperation with MDE. The $3 million offshore contribution will be managed in accordance with the Prospective Purchaser Agreement ("PPA") to be entered into between SPT and EPA. MDE will assume primary responsibility for overseeing SPT's implementation of the onshore work, working closely with and acting in consultation and cooperation with EPA;

WHEREAS, it is expressly understood that this Agreement pertains to addressing known and unknown contamination on the Site, and that the Parties have made no promises or representations other than those contained in this Agreement and that no other promises or representations will be made unless in writing;

WHEREAS, as set forth in Section XIX (Reservation of Rights), nothing contained herein, nor SPT's admittance into the VCP, shall constitute a waiver of the rights of MDE to proceed in an administrative or judicial civil action for violations of the terms of this Agreement, or of applicable statutes or regulations. MDE may bring any action authorized by law to enforce this Agreement. Unlike the VCP, under this Agreement, SPT is voluntarily subjecting itself to the possibility of stipulated penalties, agreeing to pay for reasonable and necessary MDE oversight costs and consenting to the fact that it cannot withdraw from cleanup obligations as set forth in Environment Article § 7-512;

WHEREAS, the Parties intend that this Agreement is entered into without (i) any admission or finding of liability, fault, wrongdoing, or violation of any law, regulation, permit, order, requirement, or standard of care of any kind whatsoever; or (ii) any obligation or liability associated with work not consistent with Section VII of this Order (Work to be Performed);

NOW THEREFORE, in order to protect the public health and welfare and the environment by addressing, treating, controlling, preventing or mitigating releases or threatened releases of contaminants of concern at the Site and the mutual and valuable consideration exchanged in this Agreement, the following is hereby **AGREED TO** by MDE and SPT:

III. STATEMENT OF FACTS

1. Bethlehem Steel Corporation owned the Site from approximately 1916 until 2003. Following the BSC bankruptcy in 2001 until 2012, the Site was owned by a succession of owners operating under different names, the last of which, RG Steel Sparrows Point LLC, filed

for bankruptcy in 2012. On August 7, 2012, Sparrows Point LLC ("SPLLC") purchased the Site through the bankruptcy sale. Under the asset purchase agreement that governed the sale from RG Steel to SPLLC, SPLLC agreed to assume certain, but not all, environmental liabilities of RG Steel.

2. SPT has agreed to purchase the real property from SPLLC through a Purchase and Sale Agreement (the "PSA"). Pursuant to the PSA, SPT and SPLLC have allocated, among themselves, various liabilities and obligations associated with the Site. The transaction contemplated in the PSA is scheduled to close on or about September 18, 2014.

3. SPT requested that the Department provide an expedited "inculpable person" determination pursuant to Environment Article § 7-505(a) with respect to the Site. The Department found that SPT qualifies as an "inculpable person" with respect to the Site in accordance with Environment Article § 7-501(j).

4. On June 26, 2014, SPT submitted an application to place the Site into the VCP. The MDE is reviewing the application for completeness and accepting public comment. MDE's approval of the application shall not be unreasonably withheld.

5. On May 22, 2014, SPT submitted a Site Conceptual Cleanup Plan, attached as Exhibit B, regarding the Site to the MDE and the EPA for review. The Site Conceptual Cleanup Plan is intended to serve as a guide for future remediation work at the Site. MDE's review of or concurrence with any aspect of the Site Conceptual Cleanup Plan is not binding approval of the Site Conceptual Cleanup Plan or any portion thereof.

6. On May 19, 2014, pursuant to Section 33 of the BSC Consent Decree, SPLLC and SPT requested that EPA and MDE approve the removal of approximately 2,400 acres of the Site from the definition of "Facility or Site" for purposes of the BSC Consent Decree. If MDE

and EPA approve the carve-out, they each reserve all their rights under RCRA and Titles 7 and 9 of the Environment Article with respect to any areas removed.

IV. DEFINITIONS

7. Unless otherwise expressly provided herein, terms used in this Agreement, which are defined in the Maryland Code Annotated or in regulations promulgated thereunder, shall have the meaning assigned to them in said Code or in such regulations. Whenever terms listed below are used in this Agreement, the following definitions shall apply.

8. "BSC Consent Decree" shall mean the BSC Consent Decree, as it has been or may be amended from time to time.

9. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9601, et seq.

10. "Department" or "MDE" means the Maryland Department of the Environment, its successors, employees, assigns and agents.

11. "Environmental Law" shall mean any applicable foreign, federal, state or local law or order relating to pollution or the protection of the environment, including without limitation, CERCLA, RCRA, the Clean Water Act, the Clean Air Act, the Oil Pollution Act, the Environment Article of the Annotated Code of Maryland and its implementing regulations and any other law or order (including the common law) relating to the presence, use, production, generation, movement, handling, transportation, treatment, storage, disposal, distribution, labeling, testing, processing, discharge, release, threatened release, control or cleanup of any Waste Material, each as amended.

12. "EPA" means the United States Environmental Protection Agency, its successors, employees, assigns and agents.

13. "Existing Contamination" shall mean: (i) any Waste Material present or existing at, on or under the Site as of the Effective Date; (ii) any Waste Material that migrated from the Site before the Effective Date; and (iii) any Waste Material presently at the Site that migrates onto or under or from the Site after the Effective Date.

14. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 et seq. (also known as the Resource Conservation and Recovery Act), 42 U.S.C. § 6972 (a)(l)(B).

15. "VCP" shall mean Maryland's Voluntary Cleanup Program set forth in Title 7, subtitle 5 of the Environment Article of the Annotated Code of Maryland.

16. "Waste Material(s)" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14) or Environment Article § 7-201; (2) any "pollutant" or "contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33), or Environment Article § 9-101; and/or (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27) or Environment Article § 7-201.

17. The Parties recognize that other terms are defined throughout this Agreement in various sections.

V. PARTIES BOUND

18. This Agreement shall apply to and be binding upon MDE, and its officials, representatives, agents, and successors, and SPT, its authorized representatives, agents, officers, successors and assigns. No change in ownership or legal status of SPT and, other than provided for in Paragraph immediately below, no change in ownership of the Site or part of the Site will in any way alter SPT's obligations under this Agreement.

19. SPT shall notify MDE in writing of its intent to convey any interest in the Site through a sale of the majority of the assets or other transfer of a majority interest, filing a petition

for bankruptcy protection, or conveyance of fee simple title of any portion of the Site, at least thirty (30) days in advance of such transfer or petition. SPT shall also provide a copy of this Agreement to the successor(s) in interest prior to executing any agreement for transfer or bankruptcy filing. The agreement for transfer shall further require that the successor(s) comply with the provisions of this Agreement. No conveyance of fee simple title or other majority interest in the Site shall be executed by SPT without complete provision, acceptable to MDE, for the fulfillment of all requirements of this Agreement, including but not limited to, all work to be performed and access provisions. Such transfer shall not release SPT from its obligations under this Agreement. No conveyance shall require for the purchaser to assume any obligations under this Agreement, other than those set forth in any environmental covenant(s) recorded on the deed to the Site, without MDE's express written consent.

20. SPT may, through contract, lease, agreement of sale, or other instrument, transfer responsibility for performance of some or all of the work required under this Agreement to a third party; however, SPT remains responsible for the work to be performed under this Agreement in the event that the third party does not, to the satisfaction of MDE, fully comply with the terms of this Agreement. Except with respect to SPLLC, SPT must notify the MDE ten (10) days before entering into such an agreement with a third party. MDE may require that a third party doing substantial work shall agree to report directly to MDE. Except with respect to SPLLC, MDE shall approve the terms of any such transfer of responsibility to a third party, which approval shall not be unreasonably withheld. This paragraph is not intended to apply to SPT's retention of contractors or consultants to perform, or assist SPT in performing, the work.

21. The Parties recognize that SPLLC has assumed certain liabilities and responsibilities associated with the Site pursuant to various agreements and has agreed to retain

and/or be responsible for liabilities associated with portions of the Site pursuant to the PSA, including the performance of the work contemplated by this Agreement. Nothing in this Agreement shall impact any of SPLLC's existing or future liabilities or responsibilities under any agreement, the BSC Consent Decree or any Environmental Law.

VI. EFFECTIVE DATE

22. This Agreement becomes effective only upon and simultaneously with the actual closing of that transaction through which SPT acquires fee simple title to the Site ("Closing"). The "Effective Date" of this Agreement shall be the same as the Closing date.

VII. WORK TO BE PERFORMED

23. SPT agrees to investigate and remediate the entire 3100 acre Site, including areas currently covered by the BSC Consent Decree, which for these purposes include Site Wide Groundwater, the Coke Oven Area, Coke Point Landfill, Tin Mill Canal/Finishing Mills Area, Humphreys Impoundment, Rod and Wire Mill Area and Greys Landfill (collectively, the "BSC Consent Decree Areas"), as well as work at areas that are subsequently carved out of the definition of Facility or Site in the BSC Consent Decree ("Carved Out Areas"). The Parties agree that some of the investigatory and remedial work (e.g., Interim Measures) has previously been performed as part of the BSC Consent Decree and that further remediation work may not be required on certain parts of the Site.

24. SPT desires to designate a certain area of the Site for investigation, remediation and/or development on a priority basis, and accordingly the Department agrees that it may delineate by metes and bounds and plat, a contiguous area to be known as Area A (also known as the "Development Area"), and the remainder of the Site shall be known as Area B. An Area may include BSC Consent Decree Areas, Carved Out Areas or both. In order to delineate Area A from Area B, SPT shall submit Voluntary Cleanup Program ("VCP") application for Area A in

accordance with Environment Article § 7-506 by submitting an application identifying the Area by metes and bounds and plat, and paying the $2,000 application fee. SPT's VCP application for the entire 3,100 acre Site was submitted to the Department on June 26, 2014 shall satisfy the application for Area B.

25. At SPT's discretion, SPT may submit VCP applications for other portions of the Site for purposes of expedited remediation. The entire 3,100-acre Site and all VCP applications for various Areas must be for the same future property use, as defined in Section VII of the VCP application. A subsequent VCP application must include the metes and bounds and plat for the Area, any updates necessary to the Phase I report, a Phase II Plan and Phase II Report specific to that Area in accordance with this Section. SPT has been declared an Inculpable Person for the VCP application for the entire Site, and shall remain an Inculpable Person for all subsequent VCP applications submitted for Area A and any subsequent Areas.

26. Notwithstanding anything to the contrary in this Agreement or in the BSC Consent Decree, the Parties agree that the SPT shall take measures as part of the work to address ongoing migration of Waste Material that may be coming from the Site, but that this Agreement shall not require SPT to do any work off the Site associated with Existing Contamination or impacts from Existing Contamination. The Parties agree that SPT will provide $3,000,000 to EPA for the specific and dedicated purpose of investigating and, to the extent necessary, remediating Existing Contamination which is located offshore of the Site, as set forth above in this Agreement and the PPA In the event that the PPA between SPT and EPA is not executed, SPT will provide $3,000,000 to MDE to be used for the same purpose of investigating and, to the extent necessary, remediating Existing Contamination which is located offshore of the Site.

27. For each of the Areas, including Area A and Area B, the following work must be performed, but each Area may proceed on a separate schedule, as outlined below. SPT shall implement the investigation and remediation for the Coke Oven area, as defined in Exhibit ___, on a schedule equal to that of Area A.

Phase II Investigations:

28. SPT shall prepare and submit simultaneously to MDE and EPA a comprehensive Phase II investigation plan ("Phase II Plan") to complete any remaining investigation needed to fully characterize the nature and extent of contamination in an Area. SPT shall identify in the Phase II Plan any part of the Area for which further investigation is not required. This Phase II Plan shall include a comprehensive Phase II investigation for the Area in accordance with ASTM standards, and shall include: 1) planned sampling locations, sample depth intervals and sample laboratory analytical parameters; 2) planned laboratory analytical results evaluations, including risk assessment methodology to identify specific media and contaminants of concern in order to develop risk-based remedial objectives; 3) plans for any necessary supplemental investigation activities; 4) an outline for presentation of the information within a Phase II Report; and 5) an endpoint for completing the characterization work no longer than six (6) months from MDE and EPA's approval of the plan. In consultation with EPA as to BSC Consent Decree Areas, MDE shall review the Phase II Plan and provide SPT with comments, requests for changes, requests for supplemental investigations, and approval of the Phase II Plan.

29. After MDE and EPA approve the Phase II Plan, SPT shall execute the Phase II Plan in accordance with the schedule set forth in the approved document. MDE's approval of the Phase II Plan shall not be unreasonably withheld.

Phase II Report:

30. Within sixty (60) days of completing the investigatory work set forth in the Phase II Plan, SPT shall submit simultaneously to MDE and EPA a Phase II investigation report ("Phase II Report") summarizing the work performed and fully characterizing the Area. SPT may identify in the Phase II Reports sub parts of an Area SPT believes require no remediation or no further remediation, subject to MDE's review and concurrence.

31. In consultation with EPA as to BSC Consent Decree Areas, MDE shall review the Phase II Report and either (i) approve the report, or (ii) require SPT to conduct additional work, if necessary. MDE's approval of the Phase II Report shall not be unreasonably withheld.

Risk Assessments:

32. If an Area requires further remediation, upon approval of the Phase II Report for an Area, SPT will perform a risk assessment based on the land use selected in the VCP application, including risk assessment methodology approved by MDE in the Phase II Plan. The risk assessment must be conducted within 60 days of approval of the Phase II Report by MDE and EPA.

Work Plans:

33. Following MDE's approval of the Phase II Report and risk assessment, the Area shall be accepted into the VCP. MDE shall notify SPT of its acceptance into the VCP. After such notification and EPA's approval of the Phase II Report, SPT shall propose a comprehensive Work Plan ("Area Work Plan") to address the unacceptable risks for each entire Area.

34. SPT may divide an Area Work Plan further into focus areas, proceed in phases, utilize subparts or any other reasonable tool to organize the work. If SPT focuses on areas within the Area Work Plan, it must submit a Work Plan for that specific area or phase for MDE's

review and approval. Together, an Area Work Plan and any Work Plan for a sub-Area shall be termed a "Work Plan." A Work Plan may state that a sub-Area requires no further remediation.

35. Each Work Plan covering some, but not all, of the work in the Area Work Plan should be sequentially numbered to identify the portion of the Area and number of Work Plan to be reviewed and approved by MDE (i.e. A-1, A-2).

36. A Work Plan must include a schedule for completion of the work, and milestones for progressive implementation of the Plan. A Work Plan must meet all requirements of a Response Action Plan as set forth in Environment Article § 7-508 including a demonstration to the satisfaction of the Department that the Work Plan will achieve the appropriate criteria under Environment Article § 7-508(b) and will protect public health and the environment.

37. In addition, a Work Plan must provide for the completion of all work remaining to be accomplished under the BSC Consent Decree for the Area, to the extent applicable.

38. SPT shall submit an Area Work Plan to MDE and EPA. The Area Work Plan shall serve to support EPA's Statement of Basis. After EPA prepares its Statement of Basis, the Area Work Plan and Statement of Basis shall proceed with the public participation process, and in so doing shall comply with the requirements of Environment Article § 7-509 (Public Participation) and 40 C.F.R. Part 124.

39. In consultation with EPA, MDE will evaluate the Area Work Plan submitted by SPT and shall either (i) approve the Area Work Plan, or (ii) require SPT revise the Area Work Plan, as necessary. MDE's approval of the Area Work Plan shall not be unreasonably withheld.

40. Upon MDE's approval of a Work Plan, MDE shall provide SPT with an approval letter that shall serve as a Response Action Plan approval under Environment Article § 7-511 and shall include the terminology set forth in that Article.

41. After MDE's approval of a Work Plan and EPA's issuance of the Final Decision under RCRA adopting the Work Plan as the selected remedy, SPT shall conduct all work in accordance with the schedule for compliance set forth in the Work Plan. In Carved Out Areas, SPT may elect to implement the Work Plan prior to EPA's Final Decision under RCRA relating to that Work Plan. It is anticipated that EPA will adopt the Area Work Plan as the selected remedy under RCRA. If during Area Work Plan review, EPA identifies a portion of an Area as having to undergo the RCRA Corrective Measure Implementation process, SPT shall comply with those requirements, amend the Area Work Plan to address EPA's requirements, and implement the Work Plan in accordance with EPA's RCRA Corrective Measures Implementation process.

42. SPT and MDE shall review actions and accomplishments related to the Work Plan at regular technical meetings held at least quarterly from the date of approval of the Work Plan. If MDE determines that the Work Plan is not leading to adequate progress toward the remedial goal for the Area, MDE may require modifications to the work.

Compliance with the Voluntary Cleanup Program:

43. A Phase II Report shall serve as the Phase II Report for that Area under the Voluntary Cleanup Program.

44. An Area Work Plan shall serve as a Response Action Plan under the VCP for an entire Area. Individual Work Plans for sub-Areas shall serve as Response Action Plan amendments under the VCP for the portion of the Area addressed in the Plan.

45. Each Area will require a separate VCP application including a Phase II Report, and a separate Area Work Plan.

46. Participation in the VCP in no way affects SPT's enforceable obligations under this Agreement, including but not limited to its responsibility for oversight costs or its liability for stipulated penalties for delay or non-performance.

Compliance with the BSC Consent Decree:

47. All work must be performed in such a manner as to allow EPA to complete the RCRA process for the entire Site. With respect to remaining BSC Consent Decree work that requires EPA approval, MDE shall use best efforts to resolve quickly intra-agency disputes with EPA, if any, related to areas subject to the BSC Consent Decree.

48. The Parties agree and understand that Interim Remedial Measures will be ongoing during the work. The Parties understand that, in certain circumstances, SPT may rely upon the Interim Measures process to comply with the BSC Consent Decree.

Compliance with other MDE Programs:

49. This Work to be Performed Section addresses the investigation and cleanup of Waste Materials at the Site and migrating from the Site. Nothing in this ACO limits SPT's obligations to comply with all other Maryland laws and regulations including obtaining necessary permits to complete the work.

Dual Submission of Documents:

50. It is agreed that the following documents shall serve to simultaneously fulfill the requirements of this ACO, the VCP, and RCRA:

a. Phase II Plan: Where applicable, approved Phase II Plans shall serve to satisfy the Site Wide Investigation Work Plan requirements set forth in the BSC Consent Decree.

b. Phase II Reports: Phase II Reports shall serve to fulfill the requirements of this ACO and the VCP. Where applicable, approved Phase II Reports shall serve to satisfy the Site Wide Investigation Report requirements set forth in the BSC Consent Decree.

c. Risk Assessment: A risk assessment shall fulfill the requirements of the risk assessment of this ACO, the VCP, and the BSC Consent Decree.

d. Work Plans: An Area Work Plan shall serve as a Response Action Plan under the VCP and approval of each Work Plan for a sub-Area shall constitute a RAP amendment. Where applicable, an approved Area Work Plan shall also serve to satisfy the Corrective Measures Study requirements under the BSC Consent Decree.

Closure:

51. The remedial goal of the work is to achieve to a final remedy for the entire Site, leading to: 1) a series of No Further Action letters for each Work Plan; 2) a Final Comprehensive No Further Action Determination for an Area; and 3) a Certificate of Completion under the VCP for the entire Site.

52. When SPT believes that a Work Plan has been completed (except for long term monitoring or maintenance if required), SPT shall request a No Further Action letter from MDE. MDE shall review the request for compliance with the terms of the Work Plan. Upon MDE's agreement that the work at issue in the closure request has been satisfied, MDE shall issue a No Further Action letter (or equivalent) whereupon SPT's obligations and responsibilities to perform the work addressed by No Further Action letter shall terminate, subject to the terms of the No Further Action letter. No Further Action letters for a Work Plan shall clearly identify the metes

and bounds and plat of the portion of the Area seeking No Further Action. No Further Action letters may be issued for an Area or subpart of an Area. No Further Action letters may also be issued for separate media (i.e. soil, groundwater, soil vapors) rather than metes and bounds parcels.

53. Upon the completion of all the work for an Area, SPT shall request a Final Comprehensive No Further Action Determination for that Area. MDE shall review the request for compliance with the terms of the Area Work Plan, to determine whether all Work Plans for the Area have been completed to the satisfaction of the Department and no further work is required for the Area. Upon MDE's agreement that all work for the Area has been completed, MDE shall issue a Final Comprehensive No Further Action Determination whereupon SPT's obligations and responsibilities to perform work in an Area shall terminate, subject to the terms of the Final Comprehensive No Further Action letter.

54. A requirement for long-term monitoring and maintenance shall not delay the issuance of any No Further Action letter, including the Final Comprehensive No Further Action Letter. Nothing herein shall limit the recordation of an environmental covenant or other land use controls on the Site that addresses a metes and bounds portion of an Area seeking No Further Action. Upon completion of the requirements of the Work Plans for all Areas of the Site, SPT shall notify MDE in writing that all Work Plans have been completed. Within 30 days after receipt of the notice of completion, and in accordance with Environment Article § 7-513, the Department shall review the implementation and completion of all Work Plans at the Site and, if the Department determines that the requirements of all Work Plans have been completed to the satisfaction of the Department and the Work Plans have achieved the cleanup criteria, the Department shall issue a Certificate of Completion. The Certificate of Completion shall be

recorded on the deed for the Site and shall provide SPT the protections set forth in Environment Article § 7-513(b). The issuance of the Certificate of Completion by MDE shall satisfy the obligations owed to MDE pursuant to the BSC Consent Decree.

Undiscovered Contamination:

55. Upon the discovery of previously undiscovered contamination in an Area after a Work Plan is submitted and which is not otherwise addressed by ongoing work, SPT shall as soon as practical (within 48 hours) report the discovery to the Department. Within 15 days of the Department's written request, SPT shall prepare a Phase II Plan for the newly discovered contamination in accordance with Section VII, Paragraphs 28 and 29 above, and further comply with the terms of this Agreement to remediate the contamination to the satisfaction of MDE.

VIII. REVIEW AND MODIFICATION

56. The terms of this Agreement shall constitute the complete and entire agreement between the Parties concerning the implementation of the activities required by this Agreement.

57. No term, condition, understanding, or agreement purporting to modify any term of this Agreement shall be binding unless by mutual agreement of SPT and the Department. Any such modification shall be in writing and shall be effective only when executed by the Department and SPT.

58. The Parties acknowledge that modifications to Section VII (Work to be Performed) may be required as work is conducted over time. These modifications may include, but are not limited to, changes to the design or operation of one or more of the selected remedies; expanding treatment areas; changes to application rates or remedial technology; additions or reductions of injection points; and other changes to the Work Plans. SPT may propose one or more addendums or amendments to Work Plans, which shall be submitted to the Department for

its review and approval, and if approved by the Department in writing, shall be submitted as an addendum to the Work Plan and this Agreement.

59. Minor technical modifications in the studies, techniques, procedures or designs utilized in carrying out this Agreement ("Minor Technical Modifications"), which do not alter or affect in any way the substance of this Agreement, and which are consistent with the objectives of this Agreement and necessary to the completion of the project, may be made by mutual agreement of the Project Coordinators. Such Minor Technical Modifications shall be memorialized by letter by the Project Coordinators and shall have as an effective date the date on which the Parties sign the letter. Any Minor Technical Modifications approved by MDE shall be deemed incorporated into and part of this Agreement.

IX. PROJECT COORDINATORS

60. Within two (2) weeks after the Effective Date of this Agreement, SPT and MDE shall each designate a Project Coordinator. SPT and MDE shall each notify the other, in writing, of the Project Coordinator it has selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Agreement. The MDE Project Coordinator will be the primary designated contact for SPT and MDE and all documents, reports, approvals and other correspondence concerning the activities performed pursuant to the terms and conditions of this Agreement shall be directed through the Project Coordinators.

61. MDE's Project Coordinator is Barbara Brown, Geologist Supervisor, in the Land Management Admnistration.

62. The Parties agree to provide at least one week's written notice prior to changing Project Coordinators.

63. If the MDE Project Coordinator determines that activities undertaken pursuant to this Agreement have caused or may cause a release or threatened release of Waste Materials,

which threaten or may pose a threat to the public health or a significant threat to the environment, the MDE Project Coordinator may direct SPT to stop further implementation of the activity for such period of time as may be needed to abate any such release or threatened release or to undertake any action which MDE determines is necessary to abate such release or threatened release.

64. If any work is delayed by direction of the MDE Project Coordinator, the schedule for completion of the applicable work shall be extended by the time period of the delay; provided, however, if the MDE Project Coordinator suspends the work and the reasons are due to the negligent or willful acts or omissions of SPT, or its contractor(s), then any extension of the schedule of completion shall be at the discretion of MDE.

65. The physical presence of the MDE Project Coordinator at the Site may not be necessary for the work to continue.

X. SITE ACCESS

66. MDE and any authorized representatives of MDE, including contractors, are authorized to enter and freely move about the Site, subject to the rights of quiet enjoyment held by any owner or tenant on the Site, at all reasonable times for the purposes of, inter alia, interviewing each Party's personnel or contractors performing work under this Agreement, inspecting non-privileged and non-draft records related to work performed hereunder, reviewing the progress of SPT in carrying out the terms of this Agreement, conducting such tests, sampling or monitoring as MDE deems necessary, using a camera, sound recording or other documentary-type equipment, and verifying reports and data submitted to MDE by SPT. SPT shall permit such representatives of MDE to inspect and copy non-privileged and non-draft records, files, photographs, documents, other writings, and sampling and monitoring data that pertain to the

work undertaken pursuant to this Agreement. Nothing herein shall be interpreted as limiting the inspection authority of MDE under Maryland law.

67. To the extent that work required by this Agreement, or any plans submitted hereunder, must be conducted on property that is not owned by SPT, SPT shall use its reasonable best efforts to obtain access agreements from the present owner(s) and/or lessee(s), as appropriate, of such property within 60 days of receipt of notice of MDE approval of any plan submitted hereunder requiring such work. "Reasonable best efforts," as used in this Section shall include, at a minimum, but shall not be limited to, SPT sending a certified letter to the present owner(s) and/or lessees of such property requesting access agreements to permit SPT and MDE and their authorized representatives to enter such property. SPT shall, upon request, provide MDE with copies of all access agreements or such written request for property access for the purpose of performing sampling, monitoring, investigation or corrective actions.

68. In the event that access agreements cannot be obtained within the time period allowed, SPT shall promptly notify MDE in writing, indicating all efforts made to obtain such agreements, and MDE may, consistent with its legal authority, assist SPT in obtaining access. In the event that MDE obtains such access, SPT shall be obligated to reimburse MDE for any costs judicially awarded or reasonably incurred in the exercise of its authority. If MDE does not provide such access, the approved scope of work or plan shall be modified by mutual agreement.

XI. REIMBURSEMENT OF OVERSIGHT AND RESPONSE COSTS

69. SPT agrees to reimburse MDE for reasonable and necessary response and oversight costs incurred by MDE or its authorized representatives to the extent that: (a) such costs are incurred in direct oversight of SPT's performance of work and required monitoring under this Agreement from the date the Agreement is effective until completion of the work

thereunder; (b) such costs are not inconsistent with Maryland law; and (c) do not exceed $100,000.00 per year.

70. MDE will semiannually submit to SPT an accounting of all response and oversight costs incurred by MDE and its authorized representatives with respect to this Agreement. Failure to submit an accounting in one fiscal year does not prevent MDE from submitting an accounting for that year in a subsequent fiscal year. SPT shall, within seventy five (75) days of receipt of each accounting, remit payment to MDE for any undisputed costs, provided that MDE has submitted to SPT the necessary information.

71. SPT agrees to limit any disputes concerning MDE response and oversight costs to (i) accounting errors; (ii) the inclusion of costs outside the scope of this Agreement; or (iii) costs inconsistent with Maryland law. SPT shall identify any contested costs and the basis of their objections and shall submit the same in writing to MDE within one hundred eighty (180) days of receipt of any accounting from MDE. Upon MDE's receipt of notice of disputed costs, SPT and MDE shall engage in good faith negotiations for a period of one hundred eighty (180) days before SPT or MDE may invoke Section XVI (Dispute Resolution) of this Agreement.

XII. STIPULATED PENALTIES

72. Unless there has been a written modification of a requirement of this Agreement by MDE and SPT, SPT is liable to pay stipulated penalties for failure to meet any deadlines set forth in a Phase II Plan, a Work Plan, or otherwise in this Agreement in the following amounts: $1,000.00 per day for the first through seven days of noncompliance; $2,500.00 per day for days eight through fourteen of noncompliance, and $5,000.00 for each day of noncompliance thereafter. In no event shall SPT be liable to MDE for stipulated penalties assessed by EPA under either the BSC Consent Decree or any other agreement or order SPT enters into with the EPA. In no event shall SPT be liable to MDE under this Agreement for stipulated penalties if

SPLLC is assessed stipulated penalties under the BSC Consent Decree regarding the same failure to comply. Overall, the Department agrees that compliance with this Agreement shall serve as compliance with the BSC Consent Decree.

73. Except as otherwise expressly set forth in this Agreement, none of the stipulated penalties in this Agreement shall be construed as an election of remedy or other limitation on the Department's discretion to seek in lieu of stipulated penalties any other remedy or sanction available to it for violations of this Agreement or any other violation of State law or regulation not expressly made the subject of this Agreement.

74. Except as otherwise expressly set forth in this Agreement, payment of any stipulated penalty shall not relieve SPT from the obligations imposed by this Agreement, any permit that may be issued or any other statute or regulation, nor shall such payment limit the right of the Department to seek enforcement of the terms of this Agreement or any other statute or regulation.

75. The Department, may, in its discretion, reduce or waive any stipulated penalty if it determines that noncompliance is due to an event of Force Majeure as set forth in Section XV of this Agreement.

76. All penalties that MDE shall choose to assess shall begin to accrue on the date that complete performance was due or a violation occurs and shall continue to accrue through the final day of noncompliance, excluding any period of dispute resolution.

77. Nothing herein shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Agreement, except that SPT shall not be subject to stipulated penalties if the delay in submitting a deliverable is based on a lack of action by MDE

or EPA in response to a prior submission which requires MDE and/or EPA approval before SPT can proceed.

78. All penalties owed to MDE under this Section shall be due within sixty (60) days after receipt of a written demand from MDE. Such demand shall describe the noncompliance and shall indicate the amount of penalties due.

79. Any demand for stipulated penalties shall be mailed by certified First Class U.S. Mail to the addresses indicated in Section XIV (Notices).

80. Payment shall be paid by check made payable to the Controlled Hazardous Substances Fund c/o the Maryland Department of the Environment, P.O. Box 1417, Baltimore, Maryland 21203-2057, and shall reference the following MDE Case No. _____, PCA No. 13725, Object No. 7338, and Source/Suffix No. 613. A copy of the check shall be mailed to Sari Levin, Assistant Attorney General, Maryland Department of the Environment, 1800 Washington Boulevard, Suite 6048, Baltimore, Maryland 21230-1719.

XIII. FINANCIAL ASSURANCE

81. In order to secure the completion of the work by SPT, SPT shall provide MDE with financial assurance in two forms (i) a trust fund (the "Trust") of $43,000,000 administered by a trustee acceptable to MDE in all respects (the "Trustee") and (ii) a letter of credit of $5,000,000 from a banking institution acceptable to MDE in all respects. The form of trust agreement is attached as Exhibit C (the "Trust Agreement") and the form of letter of credit is attached as Exhibit D (the "Letter of Credit") and each is incorporated by reference herein. SPT shall establish and fund the trust and shall cause the Letter of Credit to be issued within 30 days after the Effective Date. For the purposes hereof references to the amount of "financial assurance" shall mean the amount on deposit under the Trust, the amount available under the

Letter of Credit as well as the amount of any other financial assurance provided by SPT hereunder.

82. If SPT fails to meet the schedule for implementation and completion of an Area Work Plan, MDE may: (1) reach agreement with SPT to revise the schedule of completion in the Area Work Plan or, (2) if agreement cannot be reached, then MDE shall provide SPT with notice of this failure. SPT shall have 30 days to commence a cure of any such failure to the reasonable satisfaction of MDE. If SPT fails to commence a cure of such failure within 30 days after its receipt of notice thereof, MDE may initiate a Work Takeover as described in the Trust Agreement for the subject Area Work Plan and either access the funds under the Trust Agreement or access the funds in the Letter of Credit.

83. SPT shall be paid from funds available under the Trust Agreement pursuant to its terms.

84. Within six months after the Effective Date and every six months thereafter, SPT shall cause its environmental consultant to prepare and certify a report to MDE setting forth, at a minimum (a) the amount of financial assurance remaining in both the Trust and Letter of Credit; (b) a summary of elements of the work performed to date and the cost thereof; (c) an estimate of the anticipated cost of completing the work (the "Budget"); and (d) a calculation evaluating the percentage that the Budget exceeds the amount of financial assurance then remaining (a "Six Month Report"). Such report shall be broken out to address such issues as to specific sub-Areas of the Site. The Environmental Consultant shall certify the accuracy of each Six Month Report by submitting the Environmental Consultant Certification, attached as Exhibit E.

85. As part of the Six Month Report, SPT shall evaluate whether the financial assurance limits should be changed because Budget is more than 10% above the amount of

financial assurance then remaining (a "Funding Shortfall"). If a Funding Shortfall has occurred, SPT shall notify MDE in the Six Month Report and, within 30 days of such notification, SPT shall fund the Trust in an amount necessary to increase the financial assurance to an amount no less than 95% of the Budget.

86. No more than once per any twelve (12) month period, SPT may reduce the face amount of the Letter of Credit, but at no time may it be reduced to an to an amount less than 10% of the financial assurance then remaining. In the event SPT elects to exercise this right, it shall provide MDE with notice of the amount to which the Letter of Credit is to be reduced. In connection with any reduction of the Letter of Credit, SPT shall fund the Trust in an amount equal to such reduction and shall provide MDE with evidence of such funding within thirty (30) days after the date of reduction of the Letter of Credit.. MDE shall cooperate with any such reduction, including executing documentation required by the issuer of the Letter of Credit to reduce and/or re-issue the Letter of Credit.

87. The Letter of Credit and Trust Agreement (or such other financial assurance instrument as may be provided hereunder) shall be maintained until MDE issues a Final Comprehensive No Further Action letter for all portions of the Site as provided for in Section VII or at an earlier time, if the MDE determines the instrument need no longer be maintained and notifies SPT in writing. SPT may thereafter release, cancel or discontinue the financial assurance instrument(s) provided pursuant to this Section. Upon the request of SPT, MDE will timely execute any documents confirming that the Trust Agreement or Letter of Credit (or any other financial assurance instrument provided hereunder) releasing, canceling and/or discontinuing such financial assurance instrument to the extent required or requested by the issuer of the financial assurance instrument.

88. In the event of a Work Takeover, MDE may, at its sole unreviewable discretion, access sufficient funds to secure and stabilize the Site pursuant to Environment Article §§ 7-508 and 7-512, and such decision shall not be subject to Dispute Resolution. After the Site is secured and stabilized in accordance with Environment Article §§ 7-508 and 7-512, further work or access to funds held in the Trust shall be subject to Dispute Resolution.

XIV. NOTICES

89. All notices, reports and writings required by this Agreement may be transmitted by first-class mail, facsimile, express delivery, hand delivery or electronically, and shall be submitted to the following representatives of the parties:

Sparrows Point Terminal, LLC
c/o Douglas Dorgan, Project Coordinator
Weaver Boos Consultants Inc.
Three First National Plaza
70 W. Madison Street, Suite 4250
Chicago, IL 60602
ddorgan@weaverboos.com
(312) 922-1030

Maryland Department of the Environment
Remedial Project Manager
Land Management Administration
Attention: Barbara Brown
1800 Washington Blvd.
Baltimore, Maryland 21230
Barbara.Brown@maryland.gov
(410) 537-3212

With a copy to:

Sparrows Point Terminal, LLC
Attn: Mike Pedone
7301 Parkway Drive
Hanover, Maryland 21076
mpedone@redwoodcapitalinvestments.com
(410) 579-4141

With a copy to:

Office of the Attorney General
Maryland Department of the Environment
Attention: Matthew Zimmerman
1800 Washington Blvd., Suite 6048
Baltimore, Maryland 21230
Matthew.zimmerman@maryland.gov
(410) 537-3452

90. Notice to Third Parties: SPT shall provide a copy of this Agreement to any party with which SPT enters into a contract to perform the remediation activities as set forth in Section VII of this Agreement. SPT shall condition all contracts or agreements with contractors, subcontractors, and/or consultants in connection with this Agreement on compliance with the

terms of this Agreement. SPT shall ensure that its contractors, subcontractors, and consultants comply with this Agreement.

91. Notice of Field Activities: SPT shall notify the Department's Project Coordinator, as identified in Section IX by telephone or voicemail message as well as by e-mail at least five (5) business days prior to conducting any field activities required under the terms of this Agreement, unless an alternative notification schedule is agreed to by SPT and the Department.

XV. FORCE MAJEURE AND EXCUSABLE DELAYS

92. SPT shall perform the requirements of this Agreement in the manner and within the time limits set forth herein, unless the performance is delayed by events or circumstances arising from causes not reasonably foreseeable or causes beyond the reasonable control of SPT, which cannot be avoided or overcome by due diligence and which delays or prevents performance in the manner or by a date required by this Agreement (collectively, "Excused Delays").

93. Circumstances beyond the reasonable control of SPT include, without limitation, earthquake, flood, hurricane, severe weather or other act of God; war; riot; injunction; fire; labor stoppage; freight embargo; material shortages; appropriation of funding by the Maryland General Assembly, and compliance with any law, rule, or Decree of any governmental body, either existing now or hereafter created, that conflicts with the requirements or obligations of this Agreement.

94. Failure to obtain required dual agency approvals that causes a delay in performance of the work shall be an Excused Delay under this Agreement until such time as SPT receives both MDE and EPA approvals.

95. Such circumstances do not include increased costs of performance, changed economic circumstances, normal inclement weather, or failure to obtain federal, state, or local permits, unless SPT has made timely and complete application for such permits.

96. Within ten (10) working days after becoming aware that an event that SPT believe constitutes an unforeseeable event or circumstance beyond their reasonable control that may prevent or delay performance of an obligation under this Agreement, SPT shall notify MDE of such event.

97. If MDE determines that the event or anticipated event which has caused or will cause the delay constitutes an unforeseeable event or circumstance beyond the control of SPT, the time for performance hereunder shall be extended for an appropriate period of time as determined by MDE, but not less than a period of time substantially equal to the length of the necessary delay, and any stipulated penalty shall not accrue. MDE shall inform SPT in writing of its approval. If the work is delayed by direction of the MDE Project Coordinator or the failure of MDE to approve work timely submitted, the schedule for completion of the work shall be extended by the time period of the delay and stipulated penalties shall not accrue during this time frame, provided, however, if the MDE Project Coordinator suspends the work and the reasons are due to the negligent or willful acts or omissions of SPT, or its contractor(s), then any extension of the schedule of completion shall be at the discretion of MDE.

98. In the event that SPT and MDE cannot agree that any delay or failure has been or will be caused by unforeseeable events or circumstances beyond the control of SPT, or if there is no agreement on the length of the extension, the dispute shall be resolved in accordance with Section XVI herein.

XVI. DISPUTE RESOLUTION

99. The dispute resolution procedures of this Section shall be the exclusive mechanism for SPT to raise and resolve disputes arising under or with respect to this Agreement. Except as expressly provided in Section XIII (Financial Assurance), any dispute between the parties regarding the work shall be subject to these dispute resolution procedures.

100. Any dispute shall, in the first instance, be the subject of informal negotiations between MDE and SPT in an attempt to resolve the dispute in a good faith and expeditious manner. A dispute shall be considered to have arisen when one party sends all other parties a written Notice of Dispute. The parties shall have thirty (30) days following receipt of a Notice of Dispute to reach agreement. SPT shall be entitled to meet with the Director of MDE's Land Management Administration during this thirty (30) day period. If the Parties cannot reach agreement on the disputed issue, the Parties shall serve on one another a written statement setting forth its proposed resolution of the dispute ("Statement of Position") within fifteen (15) days after the expiration of the thirty (30) day period. Within 15 days following receipt of SPT's Statement of Position, the Department will serve on SPT a written statement of decision ("Statement of Decision"), signed by the Director of the Land Management Administration, and the reasons therefore.

101. Following resolution of the dispute, SPT shall comply with the agreement reached or the Department's decision as set forth in the Department's Statement of Decision or SPT may appeal the Department's decision by initiating a judicial proceeding in the Maryland Circuit Court.

102. The existence of a dispute, as defined in this Section, and the Department's consideration of matters placed into dispute, shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Agreement during the pendency of the dispute

resolution process. Thus, in the event SPT does not prevail in the dispute, the task must be completed in the remaining amount of time originally specified in the Agreement unless the time frame is formally modified through the dispute resolution process.

103. The Department, in its discretion, may extend schedules directly related to a dispute. In the event the filing of a Statement of Decision is delayed, any applicable schedule(s) shall be deemed extended by the period of days that exceeds the 15-day deadline for filing the Statement of Decision as set forth in Paragraph 100.

104. Subject to the procedures in this Section, nothing in this Section shall be construed to prohibit MDE from exercising any other remedy available at law or in equity to enforce the terms of this Agreement.

XVII. NO THIRD PARTY BENEFICIARIES

105. This Agreement does not and is not intended to create any rights or benefits for any third party. No third party shall have any legally enforceable rights or benefits under this Agreement, nor shall any third party have any rights to enforce the terms of this Agreement.

XVIII. DEPARTMENT'S COVENANT NOT TO SUE

106. In consideration of the actions that SPT will perform under the terms of this Agreement, subject to Section XIX (Department's Reservation of Rights) of this Agreement, and as of the date of Closing, the Department covenants not to sue or take any other administrative or civil action against SPT through or pursuant to any Environmental Law for any civil liability, for any injunctive relief or for reimbursement of response costs with respect to or relating to Existing Contamination. This covenant not to sue extends to SPT, its parents, members, affiliates, designees, tenants, successors and assigns, and does not extend to any other person.

107. This Covenant Not to Sue shall survive the termination of this Agreement and shall remain in effect during the term of this Agreement to the extent SPT completes or is in the process of completing the work.

XIX. DEPARTMENT'S RESERVATION OF RIGHTS

108. The signing of this Agreement and SPT's consent to comply shall not limit or otherwise preclude MDE from taking additional action pursuant to the powers granted to it under the Environment Article of the Maryland Code and the Code of Maryland Regulations or the Department's authority to enforce its hazardous waste program in lieu of federal enforcement under RCRA (a) to address violations of law or regulations not otherwise addressed by this Agreement, or (b) to reduce or eliminate risks to public health or the environment that were not known to MDE at the time of approval of this Agreement or at the time of approval of the work to be performed hereunder, and which are not otherwise addressed by this Agreement.

109. This Agreement shall not be interpreted to relieve SPT of any obligation to comply with any federal or State environmental statute, the regulations promulgated thereunder, or any applicable permits issued thereunder. This Agreement shall not be interpreted to be a permit or a modification of any existing permit.

110. This Section shall survive the termination of the Agreement.

XX. SPT'S COVENANT NOT TO SUE

111. SPT hereby covenants not to sue and agrees not to assert any claims or causes of action against the State of Maryland with respect to the Site or this Agreement, provided, however, that this covenant shall not preclude, where the State of Maryland has waived its sovereign immunity, any action by SPT to address a breach of MDE's obligations under this Agreement or damages for negligence or willful misconduct pursuant to any statute other than the Environment Article, Annotated Code of Maryland.

112. This Section shall survive the termination of the Agreement.

XXI. CONTRIBUTION PROTECTION

113. Upon issuance of a No Further Action letter for a portion of the Site, SPT shall be entitled to contribution protection as set forth in Environment Article § 7-221(d) for matters addressed in this Agreement relating to that portion of the Site covered by the No Further Action letter. With the exception of any matters described in Section XIX (Reservation of Rights), the matters addressed in this Agreement include, but are not limited to, Existing Contamination; oversight costs under this Agreement; work under this Agreement and all investigation, response, remediation, removal, cleanup or corrective actions taken by the State or another party relating to the Site or Existing Contamination. This Contribution Protection extends to SPT and its parents, members, affiliates, designees, tenants, successors and assigns, and does not extend to any other person. This contribution protection shall survive the termination of this Agreement, subject to the terms of any No Further Action letter or Certificate of Completion issued for the Site.

XXII. INDEMNIFICATION

114. Except for claims or causes of action derived from negligent acts or omissions of the State of Maryland or its agencies, departments, agents and employees, SPT agrees to indemnify and save and hold harmless the State of Maryland, its agencies, departments, agents, and employees, from any and all third party claims or causes of action to the extent arising from or on account of negligent acts or omissions of SPT or its agents, employees, representatives, independent contractors, receivers, trustees and assigns in implementing this Agreement.

115. Neither the State of Maryland, nor its agencies, departments, agencies or employees, shall be liable for any injuries or damages to persons or property to the extent arising from acts or omissions of SPT, its employees, agents, representatives, contractors, consultants,

receivers, trustees, or assigns in implementing this Agreement, neither shall the State of Maryland, nor any of its agencies, departments, agents or employees be held as a party to any contract entered into by SPT in implementing the terms and conditions of this Agreement.

116. This Section shall survive the termination of the Agreement.

XXIII. DOCUMENT PRESERVATION

117. SPT agrees to preserve during the pendency of this Agreement and for a minimum of 10 years following receipt of all No Further Action Letters, the original or one legible copy of all final documents in its possession or in the possession of any of its divisions, officers, directors, and employees created in implementation of this Agreement, or in the investigation by SPT, or any other person within SPT's control and supervision, of hazardous substance contamination and/or geological or hydrogeological conditions at the Site after the Effective Date of this Agreement. SPT shall instruct its agents, accountants, contractors, consultants or attorneys to retain for the period of time stated above a copy of all such documents which are in their possession, of which SPT does not possess the original or a copy. At the Department's specific request, SPT shall permit the Department to obtain copies of the necessary documents. Following the 10-year period, SPT shall notify the Department at least sixty (60) calendar days prior to the destruction of any document(s) so preserved. The Department shall have the option of taking possession of any such documents except for privileged material subject to the requirements of Section X (Site Access), designated for destruction and shall notify SPT in writing of its decision to take, or decline to take, possession of any such documents.

118. This Section shall survive the termination of the Agreement.

XXIV. TERMINATION

119. All obligations under this Agreement, other than those expressly reserved, shall terminate upon the recordation of a Certificate of Completion on the entire Site, subject to the requirements of the Certificate of Completion.

XXV. TERMS AND CONDITIONS

120. This Agreement shall become effective as a contract and final administrative order upon execution by the Department and SPT.

121. Each person signing this Agreement certifies that he or she is duly authorized by the party on behalf of which each signs to execute this agreement and to bind that party to the terms of this Agreement.

122. In performing responsibilities, exercising discretion, and making determinations under this Agreement, SPT and the Department shall each act reasonably and in good faith.

123. SPT agrees to undertake and complete all actions required by the terms and conditions of this Agreement. In any action by the Department to enforce the terms of this Agreement, SPT consents to and agrees not to contest the authority or jurisdiction of the Department to enforce this Agreement, and agrees not to contest the validity of this Agreement or its terms and conditions. SPT, however, retains its rights to challenge, inter alia, decisions made by MDE pursuant to this Agreement as well as MDE's interpretation of this Agreement. SPT agrees this Agreement is a contract and final order enforceable in a judicial forum.

124. In the event of a conflict between the terms of this Agreement and any Work Plan, the terms of this Agreement shall control.

125. Nothing in this Agreement is intended to require duplication of work that has already been implemented (with the oversight and approval of the Department) prior to the entry of this Agreement. All prior work plans that have been implemented and effectuated are

incorporated by reference as if submitted, approved, and implemented in accordance with this Agreement.

126. This Agreement is not intended to be nor shall it be construed to be a permit. SPT acknowledges and agrees that the Department's approval does not constitute a warranty or representation that the work performed will achieve a particular cleanup or performance standards. Compliance by SPT with the terms of this Agreement shall not relieve SPT of its obligations to comply with any other applicable local, state, or federal laws and regulations, except as set forth in this Agreement.

127. If a court issues an order that invalidates any provision of this Agreement or finds that SPT or the Department have sufficient cause not to comply with one or more provisions of this Agreement, the parties hereto shall remain bound to comply with all provisions of this Agreement not invalidated by the court's order.

128. This agreement may be signed in counterparts.

129. This Agreement shall be governed by and construed in accordance with Maryland law.

This Agreement is AGREED to and its terms and conditions CONSENTED to:

SPARROWS POINT TERMINAL LLC

BY: Michael T. Pedone, President

DATE: September 12, 2014

MARYLAND DEPARTMENT OF THE ENVIRONMENT

BY: Horacio Tablada, Director,
Land Management Administration

DATE: 9/12/14

Approved as to form and legal sufficiency

this 12 day of September 2014

Assistant Attorney General

EXHIBIT A
SITE MAP

Special Study Areas

Tin Mill Canal and Finishing Mills Area
Humphrey Impoundment
Greys Landfill Area
Coke Point Landfill
Coke Oven Area

Other Areas

Rod and Wire Mill Area
Greys Landfill Area "County Lands Parcel 1A"

▲ Areas Of Concern (AOC)

● Solid Waste Management Units (SWMU)

SPECIAL STUDY AREAS WITH AOCs & SWMUs FORMER RG STEEL SPARROWS POINT, MARYLAND	WEAVER BOOS CONSULTANTS	DRAWN BY: RD REVIEWED BY: CF DATE: 3/3/2014 FILE: 2570-306-01 CAD: SITELOC.DWG
REUSE OF DOCUMENTS THIS DOCUMENT, AND THE DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WEAVER BOOS CONSULTANTS, LLC, AND IS NOT TO BE USED IN WHOLE OR IN PART, WITHOUT THE WRITTEN AUTHORIZATION OF WEAVER BOOS CONSULTANTS, LLC.	CHICAGO, ILLINOIS (312) 922-1030 www.weaverboos.com	FIGURE SS

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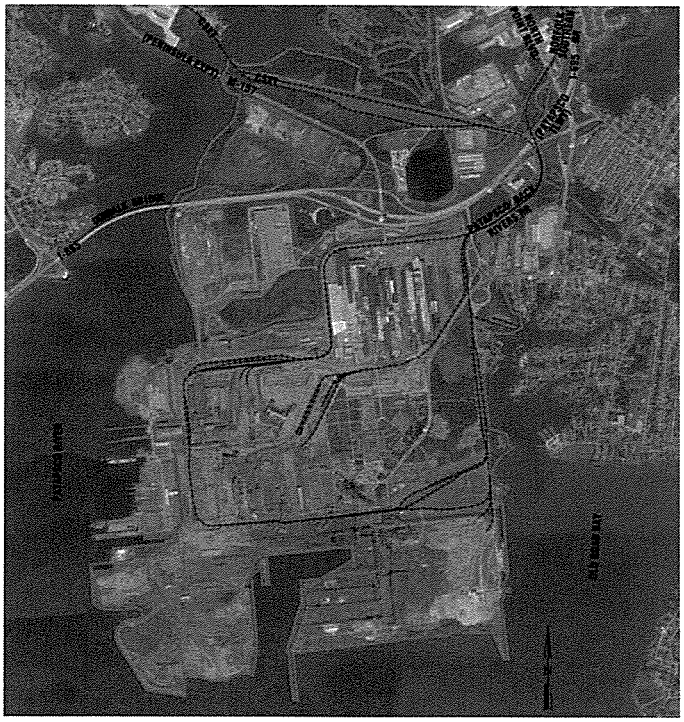
EXHIBIT B
SITE CONCEPTUAL CLEANUP PLAN

Site Conceptual Cleanup Plan
Draft

Former RG Steel Facility



Prepared for:

Sparrows Point LLC
1430 Sparrows Point Boulevard
Sparrows Point Maryland 21219

May 22, 2014

EnviroAnalytics
Group

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1 INTRODUCTION

1.1 General Information

This Site Conceptual Cleanup Plan (SCCP) was prepared by EnviroAnalytics Group on behalf of Sparrows Point LLC, the Seller (and current owner) of the approximately 3,100-acres of land on the historically industrial Sparrows Point Site (Site or Facility).

1.2 Purpose and Objective

The SCCP is intended to provide concepts for remediation, closure and pathway exclusion of applicable areas for the Site as may be defined in a Prospective Purchaser Agreement with the US EPA Region III (EPA) (Conceptual Cleanup Plan) and an Administrative Order on Consent and Covenant Not To Sue with the State of Maryland (MDE) as contemplated between HRP Sparrows Point, LLC (HRP) as the prospective purchaser (Purchaser) and the respective agencies. Summaries are included of past and current Site conditions and for prior environmental investigations including the identification of significant environmental conditions.

Guidance for future remediation work at the Site is outlined, including;

1) remaining obligations and corrective actions for the Site required under the Multi-Media Consent Decree between the EPA, MDE and Bethlehem Steel Corporation, which was entered in 1997 in the U.S. District Court for the District of Maryland, Case Nos. JFM-97-558 and JFM-97-559, as qualified by the RG Steel/SPLLC Sale Order and the Prospective Purchaser Agreement and,

2) obligations for parcels of land that are intended to be removed from the definition of Facility or Site under the Consent Decree and transferred to and subject to the process for obtaining closure (including financial assurance and public comment) in the contemplated Administrative Order on Consent to be entered into between the State and HRP.

The SCCP also outlines the objectives, approach, and methods to complete remediation and achieve 'closure' of environmental obligations of the Site as provided in Article 5 of the Purchase and Sale Agreement executed by and between Sparrows Point, LLC and HRP Sparrows Point, LLC on December 14, 2013, specifically including;

- A general investigation and remediation plan for the completion of Seller's Environmental Obligations (the "Seller Remediation Plan"); and,
- The types, scope and nature of environmental controls and restrictions (including the geographical footprint thereof) which are mutually acceptable to both Seller and Purchaser.

1.3 Background Information

The Sparrows Point Site is located in Baltimore County, Maryland at the southeast corner of the Baltimore metropolitan area, approximately nine miles from the downtown area. The Site encompasses approximately 3,100 acres located on a peninsula situated on the Patapsco River near its confluence with the Chesapeake Bay physically positioned in the mouth of the heavily industrialized and urbanized Baltimore Harbor / Patapsco River region. A land connection to the northeast links the peninsula with the adjacent community of Edgemere.

From the late 1800s until 2012, the Site was used for the production and manufacturing of steel. Iron and steel production operations and processes at the Site included raw material handling, coke production, sinter production, iron production, steel production, and semi-finished and finished product preparation. In 1970, Sparrows Point was the largest steel facility in the United States, producing hot and cold rolled sheets, coated materials, pipes, plates, and rod and wire. The steelmaking operations at the Facility ceased in fall 2012, and plans for the Site include demolition and redevelopment over the next several years.

The original topography of the peninsula was flat with elevations not exceeding 15 feet North American Vertical Datum 1988 (NAVD88). The peninsula has been drastically altered since the inception of the steel manufacturing activities. Creeks have been filled in and new land has been added to various areas of the Site by building up near-shore areas of the river.

Potential sources of releases to the environment from the Site were identified in a final RCRA Facility Assessment Phase II Report (RFA Report) prepared for EPA by A.T. Kearney dated August 12, 1993. The RFA Report provided an updated report for the Facility from an initial draft RFA Report prepared by PRC Environmental Management on April 12, 1988.

On October 10, 1997, the United States Environmental Protection (USEPA) and the Maryland Department of the Environment (MDE) filed a multimedia Consent Decree through the U.S District Court for the Court of Maryland seeking relief from alleged endangerment to public health, welfare, or the environment from contamination at and around the Sparrows Point Facility in Sparrows Point, Maryland. Pursuant to the requirements of the 1997 Consent Decree, Site-Wide Investigation activities and associated environmental assessments have been performed at the site focused on characterizing the nature and extent of releases to on-site areas of the Facility. Work has been completed to implement an investigation and screening process to evaluate potential source areas of releases to the environment and define if further action (or no further action) is necessary. Major submittals completed to date as part of the Site-Wide Investigation include:

- Description of Current Conditions, January 1998 (Rust 1998);
- Site-Wide Investigation Work Plan – Groundwater Study, June 2000 (CH2M Hill 2000);
- Site-Wide Investigation Groundwater Study Report, July 2001 (CH2M Hill 2001);
- Site-Wide Investigation Release Site Characterization Study, June 2002 (CH2M Hill 2002a);

- Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater From the Special Study Areas, International Steel Group, ISG Sparrows Point, Inc. Facility, Sparrows Point, Maryland, January 2005 (URS 2005a), revised 2007;
- CA725 Facility Investigation and Human Health Risk Evaluation (HHRE) Findings, ISG Sparrows Point, June 2005 (URS 2005b);
- Ecological Risk Assessment Strategy Document; ISG Sparrows Point Facility (URS 2006a);
- Final Ecological Risk Assessment Work Plan for On-Site Areas (URS 2007).
- Screening Level Ecological Risk Assessment For On-Site Areas Final (April 2009, URS)
- Supplemental Report County Lands Parcel 1B Ponds Final (May 2009, URS)
- Final Baseline Ecological Risk Assessment for On-Site Areas (BERA) Report (URS, October 7, 2011)

1.4 SCCP Organization

Section 2 of the SCCP presents information on the Facility setting, Section 3 presents information on the Site use and history, Section 4 presents environmental information associated with assessment and investigation work and operation of interim measures, Section 5 presents conceptual cleanup and response plans and Section 6 presents the compliance plan for the solid waste landfills.

Specific information is presented including a general approach for response actions to support renewal of the Site, approach for closure of regulatory obligations for the Site and area-specific response actions that are anticipated to satisfy identified environmental conditions. The SCCP addresses recognized environmental conditions identified during the all appropriate inquiry process undertaken by Weaver Boos Consultants on behalf of the Purchaser to the extent practicable based on currently available information. The compliance plan for the landfills includes actions to be undertaken to provide operational compliance, closure and post-closure care for the two on-site landfills.

2 FACILITY SETTING

2.1 Location and Surrounding Land Use

The Sparrows Point Site is located in Baltimore County, Maryland at the southeast corner of the Baltimore metropolitan area. The Site is approximately 3100 acres and occupies all of a peninsula bounded to the west by Bear Creek; to the south by the Patapsco River; and to the east by Jones Creek, Old Road Bay, and residential areas of the City of Edgemere. The Site is also bounded to the north by the Sparrows Point Country Club.

Zoning maps indicate that the Sparrows Point Site is zoned Manufacturing Heavy - Industrial, Major (MH-IM). Surrounding property zoning classifications include the following: Manufacturing Light (ML), Resource Conservation (RC), Density Residential (DR), Business Roadside (BR), Business Major (BM), Business Local (BL), and Residential Office (RO). The Sparrows Point Country Club is located north of the Sparrows Point Site on the other side of the Peninsula Expressway. Light industrial and commercial properties are located northeast of the Site and northwest of the Site on the other side of Bear Creek. Residential areas of Edgemere and Fort Howard are located northeast of the Site and east of the Site on the other side of Jones Creek and Old Road Bay. Residential areas of Dundalk are located northwest of the Site on the other side of Bear Creek.

2.2 Physiography, Topography and Surface Drainage

The Baltimore area is situated within the Atlantic Slope physiographic region which is further subdivided into the Piedmont Plateau and Coastal Plain provinces. The Sparrows Point Site is wholly located in the Coastal Plain Province. The Coastal Plain is the relatively low part of the Atlantic Slope and is bounded on the east by the edge of the Continental Shelf in the Atlantic Ocean and on the west by the Piedmont Plateau.

The topographic development of the Atlantic Slope region is directly related to the regional geology. Topographic elevations in the Coastal Plain are generally less than 300 feet above mean sea level (msl). The Coastal Plain is underlain by relatively soft, generally unindurated, easily eroded sediments of the Cretaceous, Tertiary, and Quaternary Systems. These Coastal Plain sediments are underlain by the crystalline Pre-Cambrian and early Paleozoic rocks which extend from the Piedmont Plateau.

The Sparrows Point Site is bordered by water on three sides with land connection predominantly to the north and northeast. The peninsula is bounded to the east by Old Road Bay and Jones Creek; to the south by the Patapsco River; and to the west by Bear Creek, all of which directly or indirectly drain to the Chesapeake Bay located southeast of the Site.

The current ground surface at the Sparrows Point Site is relatively flat. All major topographic features (such as buildings, landfills, and material stockpiles) are manmade. Throughout most of the peninsula, the elevation of the ground surface is between 0 and 20 feet mean sea level (msl). The average elevation is about 15 feet msl. In the southern portion of the Site, there are several

man- made landforms (raw and byproduct material stockpiles) that exceed 20 feet msl in elevation. Greys Landfill, located near the northwestern corner of the property, is approximately 110 feet msl in elevation at its highest point.

Surface water runoff is diverted and collected by a network of culverts, underground pipes, and drainage ditches within the Site. The stormwater is then discharged to Bear Creek, Jones Creek/Old Road Bay, and the Patapsco River. Prior to 1970, much of the stormwater from the northern part of the Site was discharged to Humphrey Creek and subsequently to Bear Creek. Between 1950 and 1970, the Tin Mill Canal was constructed within portions of Humphrey Creek which continued to receive stormwater from the northern part of the Site. Since about 1970, stormwater runoff from the northern part of the Site has discharged to the Tin Mill Canal, and then conveyed to the Humphrey Creek Wastewater Treatment Plant (HCWWTP) for treatment.

2.3 Fill Placement

Slag, a byproduct of iron- and steel-making, has been used as an on-site fill material since operations began at the Sparrows Point Facility. Prior evaluations have been completed to assess the extent of made land activities for the Site. A land plat, dated August 1916 and January 1917 was used as the basis for this land reclamation evaluation. In January 1917, the Site consisted of approximately 2166 acres of land. Humphrey Creek was a northeast trending embayment in the northern portion of the Site. It drained to Bear Creek and was reported to have contained fresh water. A tributary to Humphrey Creek called Blockhouse Cove extended well into the central part of the Site from the southern side of Humphrey Creek. Greys Creek, an embayment oriented east-southeast, was present to the north of Humphrey Creek. The Town of Sparrows Point was present in the south central portion of the Site.

By April 1938, steel manufacturing operations were well established, particularly on the eastern side of Sparrows Point. Blockhouse Cove had been completely reclaimed, and a bridge partially dammed the opening to Bear Creek. A significant portion of the southern end of the Site had been reclaimed. A small amount of land along the southern edge of the Site was reclaimed between the late 1930's and the late 1 950's. The northeast end of Humphrey Creek, two small tributaries to Jones Creek, and some land north of the current Shipyard were also reclaimed by that time. By 1971, all of Humphrey Creek estuary had been reclaimed, and the Tin Mill Canal had been constructed within the slag fill. In addition, Greys Creek and an additional area along the southern boundary of the Site had been completely reclaimed. Currently, the surveyed acreage of the Site is 3100 acres.

2.4 Regional Geology

The general geologic stratigraphy of the Baltimore area includes crystalline Pre-Cambrian and early Paleozoic basement rocks that are unconformably overlain by the Patuxent Formation which is conformably overlain by the Arundel Formation. The Arundel Formation is unconformably overlain by the Patapsco Formation which represents the uppermost Cretaceous

sediments. Pleistocene sediments unconformably overlie the Cretaceous sediments. In places, recent deposits of natural and anthropogenic origin overlie the Pleistocene sediments.

In general, the Coastal Plain sediments thicken to the southeast and comprise a wedge-shaped mass lapping over the east-sloping crystalline-rock floor.

The Patuxent Formation is the lowermost unit of the Potomac Group. The Patuxent sediments consist primarily of quartzose gravel and sand interbedded with silty clay lenses. The thickness ranges from 50 to 250 feet.

The Arundel Formation, or Arundel Clay, is the middle unit of the Potomac Group. In the Baltimore area it is a red to red-yellow, dense, plastic clay with thin lenses of silt. The composition of the clay is predominantly kaolinite and illite. The Arundel Clay ranges in thickness from 25 to 200 feet and thickens to the east and south.

The Patapsco Formation is the upper-most unit in the Potomac Group. In the Baltimore area, the Patapsco is comprised of interbedded sands, silts, and clays, and its thickness ranges from 0 to 200 feet.

Quaternary sediments of Pleistocene age are present directly above the Cretaceous sediments of the Potomac Group at thicknesses from 0 to 150 feet. The sand, gravel, and clay that comprise the Pleistocene sediments are divided into two generalized formations: upland deposits and lowland deposits.

2.5 Regional Hydrogeology

Aquifers in the Patuxent and Patapsco Formations are the primary groundwater sources in the Baltimore area. Local water supplies can be produced from the Talbot (i.e., Pleistocene) Formation. In areas close to estuaries, water supply wells in any of these formations are susceptible to chloride contamination.

2.5.1 Patuxent Aquifer

The aquifer in the Patuxent Formation is a significant source of groundwater for the Baltimore area. Both current and historic discharge from the Patuxent aquifer is primarily through water-well withdrawals. Historic use of the Patuxent aquifer dates back to the 1850's. Elevated chloride concentrations caused by saltwater encroachment have been documented in the Patuxent aquifer since the 1930's.

2.5.2 Patapsco Aquifer

The aquifer in the Patapsco Formation is also a source of groundwater for the Baltimore area. A sand facies in the lower part of the Patapsco Formation is considered the principal source of water in the Patapsco aquifer. Groundwater within the Patapsco Formation is confined at Sparrows Point with the overlying Pleistocene sediments serving as the upper confining bed and the Arundel Formation as the lower confining bed. In some parts of the Baltimore area,

including the Sparrows Point Site, the Patapsco Formation contains a well-defined "middle clay bed" that separates the lower sand facies from the upper part of the formation.

The Patapsco aquifer was used as a source of groundwater prior to 1900 and during the early part of the 20th century. Because the Patapsco aquifer widely subcrops beneath the brackish Patapsco River, elevated chloride concentrations became a major problem in areas near the Patapsco River estuary. By 1945, almost all water production from the Patapsco aquifer had ended due to excessive chloride in the Harbor, Canton, and Dundalk areas. The Sparrows Point Site was the only major user of the Patapsco aquifer in 1945. Water production totaled about 3 Mgal/d; however, by the late 1940's and 1950's, many of the Sparrows Point wells were affected by elevated chlorides as well and were therefore abandoned. As of 1985, there was no major use of the Patapsco aquifer in the immediate vicinity of the Patapsco River estuary.

2.5.3 Pleistocene Groundwater

Although not common, local supplies of groundwater can be developed in the Pleistocene lowland deposits of the Talbot Formation in the Baltimore area. Wide variations have been reported for the transmissivity of water-bearing zones in the Talbot Formation in the Sparrows Point area. Elevated chloride concentrations in the Talbot Formation are wide-spread along the Patapsco River and its estuaries, and salt-water encroachment is a significant factor limiting development of water supplies in the Talbot Formation. Wells completed in the Talbot Formation at Sparrows Point have been abandoned and are not suitable for potable supply.

3 FACILITY USE AND HISTORY

3.1 Overview

Pennsylvania Steel built the first blast furnace at Sparrows Point in 1887. The first iron was cast in 1889. Bethlehem Steel Corporation (BSC) purchased the Sparrows Point Facility in 1916 and enlarged it by building mills to produce hot rolled sheet, cold rolled sheet, galvanized sheet, tin mill products, and steel plate. During peak production in 1959, the Facility operated 12 coke oven batteries, 10 blast furnaces, and four open hearth furnaces. The coke ovens ceased operations in December 1991 and have been demolished and removed from the Site. The remaining operations at the Site ceased operations in 2012 and the related structures are currently being demolished and removed from the Site. The Site had been continually used for the production of iron and steel from 1887 until 2012; the following sections provide a historical description of Site use.

3.2 Steel Manufacturing Operations

Steel manufacturing involved the handling of vast amounts of raw materials including coke, iron ore, limestone, and scrap steel, as well as recovering byproducts and managing waste materials. The following operations and/or processes were performed during the manufacturing lifespan at the Sparrows Point Facility:

- Iron and Steel Production
    - Raw Material Handling
    - Coke Production
    - Sinter Production
    - Iron Production
    - Steel Production and Semi-Finished Product Preparation
- Finished Product Preparation
- Coal Chemical Recovery System
    - Coal Chemical Plants
    - Benzene and Litol Plants
    - Hydrogen Cyanide Strippers
    - Desulfurization Plant and Sulfur Recovery
- Other Byproducts Recovery Systems
    - Ammonia Removal Plant
    - Green Pellet Plant Ball Mill

  - Palm Oil Recovery
  - Slag Processing
  - Wastewater Treatment Systems
  - Bio-Oxidation Plant
  - Blast Furnace/Sinter Plant Water Treatment System
  - Basic Oxygen Furnace Water Treatment System
  - Chromium High Density Sludge (HDS) Plant
  - Tin Mill Canal and Humphrey Creek Wastewater Treatment Plant
- Solid Waste Management
  - Greys Landfill
  - Coke Point Landfill
- Air Pollution Control

The following sections present brief descriptions of these operations and/or processes.

3.2.1 Iron and Steel Production

Iron- and steel-making involves raw material handling, coke production, sinter production, iron production, steel production, semi-finished product preparation, and finished product preparation.

3.2.2 Raw Material Handling

Most of the raw materials used in the production of iron and steel were stockpiled in the ore pier area located in the south-central portion of the Site. The raw materials include iron ore, coke, crushed limestone, quartz gravel, sand, mill scale, and pellet fines.

3.2.3 Coke Production

Coke was produced on Site for use as a fuel in the iron-to-steel making process. A total of 13 coke oven batteries were used between the 1930's and 1991 at which time the coke ovens ceased operations. During the period of active coke production, coal was stored in an area located north of Coke Point Landfill and southwest of the Benzene\Litol Plant.

3.2.4 Sinter Production

Sinter was produced on Site for use as a raw material for iron production. Sinter is an agglomerated and fused mixture of fine-sized materials such as iron ore, coke breeze, fluxstone, mill scale, and flue dust used to charge the blast furnaces. After fusing, the sinter product was

crushed and screened. Undersized sinter fragments were recycled and acceptably sized sinter fragments were air cooled, screened again, and then sent to charge the blast furnaces.

3.2.5 Iron Production

Iron was produced in blast furnaces where iron ore (or iron-bearing pellets), sinter, coke, and limestone were continuously fed into the top of the furnace. Solid materials were ultimately heated by the hot air and fuel injected in the lower section of the furnace and from coke burning. Molten iron forms from the heating and reaction with these gases. The limestone reacts with the ore impurities to form slag, which floats atop the molten iron. The slag was separated and transferred directly to the granulated Slag Plant and then taken to an on-Site processing area. The iron was drawn from the furnace bottom to hot metal cars for transport to the steel making furnaces.

3.2.6 Steel Production and Semi-Finished Product Preparation

Molten iron and ferrous scrap metal were refined by oxidation in the steel-making process. Once refined, alloys were added to the molten iron for the desired grade of steel. Slag was also generated in this process and was taken to the reprocessing area on-site. The steel was continuously cast and semi-finished steel slabs were cut to proper lengths at two strands of the Continuous Caster for further processing at either the Plate Mill or Hot Strip Mill.

3.2.7 Finished Product Preparation

Finished steel was produced in various portions of the Site at the Plate Mill and two Finishing Mills (the Cold Sheet Mill, and the Tin Mill). These mills generate various steel products, all to customer specifications, including hot-rolled sheets and strips, cold-rolled sheets, and flat plates. Some of the products were galvanized, coated with corrosion-resistant alloys (i.e., galvalume or chrome), or tin- plated at the Coating Lines located in the Cold Sheet Mill and the Tin Mill.

Two other mills in the northwestern portion of the Site, the Rod and Wire Mill and the Pipe Mill operated between the 1940's and early 1980's producing rods, wire products, and pipes.

3.2.8 Coal Chemical Recovery System

During the coke production years, the coal chemical recovery system consisted of several individual plants that operated for raw coke gas treatment. These plants were located in the southwest portion of the Site, and included the A and B Coal Chemicals Plants (CCP), the Benzene and Litol Plants, two Hydrogen Cyanide Strippers, and the Desulfurization Plant and Sulfur Recovery. The history and current status of these plants are discussed below.

- Coal Chemical Plants - Raw coke oven gas was initially treated at the A or B CCP. The A CCP (which served coke oven batteries 1-6 and battery A beginning in the 1930's) and B CCP (which served batteries 11and 12 beginning in the 1950's) both ceased operations in

1991. These plants contained various oil/water separators, scrubbers, saturators, cooling towers, tar decanters, and numerous tanks.

- Benzene and Litol Plants - The Benzene and Litol Plants were distillation and cracking plants used for the purification of light oil into benzene, toluene, and xylene and operated from the late l 940's through 1986. These plants contained numerous tanks, coolers, absorbers, and scrubbers. All plant units have been removed.
- Hydrogen Cyanide Strippers - Two Hydrogen Cyanide Strippers were used for the removal of hydrogen cyanide from gas generated at the A and B CCPs, and from wastewaters generated in the treatment of this gas. One stripper removed the cyanide from the final cooler condensate. The other stripper removed the cyanide from the coke oven gas before distribution of the gas to the plant. All plant units have been removed.
- Desulfurization Plant and Sulfur Recovery - The original Sulfur Recovery Plant operated from the late 1960s through the late 1980s, and it removed about one-third of the sulfur produced from the A and B CCP coke oven gas. This unit was torn down and replaced with a new unit that would have fully desulfurized the gas. The new unit was never operated prior to the shutdown of the coke ovens in 1991.

3.2.9 Other Byproducts Recovery Systems

Byproduct recovery systems that were formerly operated at the Site include the Ammonia Recovery Plant, the Green Pellet Plant, the Ball Mill, Palm Oil Recovery and Slag Reprocessing.

- Ammonia Removal Plant - Excess weak ammonia liquor from the A and B CCP coking operations was temporarily stored in a one-million gallon tank prior to pumping it to the Ammonia Removal Plant. At the Ammonia Removal Plant, the liquor was added to lime slurry and then sent to a clarifier to remove suspended solids. The pre-limer clarifier sludge was beneficially re-used at the Humphrey Creek Wastewater Treatment Plant for pH adjustment. The clarified liquor went to the Bio-Oxidation Plant for phenol treatment.
- Green Pellet Plant - The Green Pellet Plant, located in the open-hearth furnace shop area near the south-central portion of the Site, operated from the early 1970's to approximately 1980. Here, unfired (green) iron ore pellets were manufactured from open hearth and basic oxygen furnace fume dust. The pellets were then charged back into the furnaces. The plant was demolished in 1990.
- Ball Mill - The Ball Mill was located west of the coke ovens. There are no reported startup dates, but the mill ceased operations in the 1980's. Coal tar and material from the tar decanter, which formed from the quenching of coke oven gases, was recovered here and processed to a liquid for beneficial use as fuel at the Pennwood Power Station or at the Open Hearths.
- Palm Oil Recovery - The Palm Oil Recovery (PORI) received and processed waste oils generated throughout the Sparrows Point Facility. PORI operations began around 1950. Waste oil was received by an oil/water separator and discharged to a holding tank.

Wastewaters were then piped to an earthen lagoon where the waste oil is skimmed and recovered. Wastewaters were discharged to the Tin Mill Canal, and further treated at the HCWWTP.

- Slag Reprocessing - Slag generated at the Blast Furnace and the BOF was processed on Site. At the Blast Furnace, hot slag is dumped in holding bins and sprayed with water to cool and solidify the material. Molten slag from the BOF was tapped from the steel-making vessel into containers (thimbles) for transport to the slag-processing Facility where it was dumped and sprayed with water. Cooled, solidified slag was dug from the Blast Furnace slag bins or from piles at the slag Facility and separated by crushing and screening into various sizes suitable for sale. Some of the BOF slag was recycled to the iron-making operation.

3.2.10 Wastewater Treatment Systems

The generation of a variety of wastewaters, waste pickling liquors, and other aqueous wastes was part of the routine procedures for steel making and steel processing. Some of the more important plants/systems that were located on-site are briefly discussed below.

- Bio-Oxidation Plant - Most of the wastewater treated at the Bio-Oxidation Plant came from the Ammonia Removal Plant, the Benzene and Litol Plants, and from the A CCP Hydrogen Cyanide Stripper. The treatment system consisted of various tanks, skimmers, oil/water separators, mixing chambers, aeration basins, and thickeners.
- Blast Furnace/Sinter Plant Water Treatment System - The Blast Furnace/Sinter Plant Water Treatment System processed water from the Sinter Plant scrubbers and treats slurry from the Blast Furnace recycled water system for soluble zinc and cyanide. The treatment system consisted of a thickener, a belt press filter, and two spent pickle liquor tanks. Dewatered sludge (non-hazardous) was disposed in Greys Landfill and water was discharged through NPDES permitted outfall 101.
- BOF Water Treatment System - The BOF gas cleaning water treatment system was a recycle system that treated water from four (4) BOF scrubbers used to remove suspended particulates from BOF process gas generated during the production of steel. The treatment system consisted of various tanks and settling equipment. Solids were removed and disposed at Greys Landfill. Excess water (blowdown) was sent to the HCWWTP for final discharge through NPDES outfall 014.
- Chromium High Density Sludge (HDS) Plant - In 1987 the Chromium High Density Sludge (HDS) was installed to process chromium-bearing wastewater generated during chromium plating and passivating operations at the Tin Mill. The wastewater treatment system includes several tanks (i.e., reduction, neutralization, and flocculation), pH adjustment, thickening, and filtering of solids. Sludge from the treatment process is sent off-site for proper disposal. Treated wastewater is sent to the Humphrey Creek Wastewater Treatment Plant (HCWWTP). This plant is not scheduled for demolition.

- Tin Mill Canal and Humphrey Creek Wastewater Treatment Plant - The Tin Mill Canal (TMC) is a man-made canal constructed in slag fill and located in the northern half of the Site. The TMC primarily serves as a conveyance for industrial wastewater discharged from several Site facilities. The canal also receives stormwater runoff. The TMC is approximately 7300 feet long, 30 to 50 feet wide, and averages approximately 15 feet in depth below surface grade. Wastewater flows generally east to west toward the Humphrey Creek Waste Water Treatment Plant (HCWWTP). The eastern portion of the TMC began operating in the early 1950's. The western (remaining) portions of the canal and HCWWTP were completed and began operating in approximately 1969. Treated wastewaters discharge through NPDES outfall 014 to Bear Creek. The HCWWTP was reconfigured and improved by incorporating the ACTIFLO® microsand ballasted clarification process in 2004. The TMC and HCWWTP are still in use.

3.2.11 Solid Waste Management

Solid wastes have been disposed of and managed primarily at two areas within the Sparrows Point Site: Greys Landfill and Coke Point Landfill.

- Greys Landfill - Greys Landfill is located at the northwestern portion of the Sparrows Point property. The landfill is situated adjacent to Interstate Route 695 that provides a boundary to the south of the landfill and Peninsula Highway that is north of the landfill. The existing landfill area is approximately 40 acres in size and is characterized by waste deposits and graded side slopes developed during many years of waste and miscellaneous slag filling operations. Current surface elevations of the waste materials generally range from 90 to 110 feet in elevation. Filling operations in this area began in approximately 1970 as determined by aerial photograph records. The landfill is in use today. In the northeast corner of Greys Landfill is the Tar Decanter Cell, also known as the Closed CHS Cell. This unit is a 1.5-acre RCRA-regulated disposal cell that received various coal tar sludge, slag, dusts, filter cakes, and miscellaneous debris. The unit was closed and capped in 1983 under a closure plan submitted to MOE in April 1983 and approved in August 1983.
- Coke Point Landfill - Coke Point Landfill is a solid waste disposal area located within the boundary limits of the Sparrows Point Site located at the southwestern edge of the Facility adjacent to the Patapsco River. The potential landfill area defined by horizontal boundary limit is approximately 46 acres. Approximately 25 to 30 acres have been used historically for waste disposal. The landfill currently exhibits irregular side slopes and vertical topographic elevations ranging up to approximately 70 feet. The area is characterized by surface materials of slag and miscellaneous fill that were placed during filling operations to provide made land at Coke Point. The area apparently received discarded materials during that time; but there is no clear starting date for the operation. Since 1971 until 2012, the area had been used as a landfill and waste disposal area. The

landfill received a variety of non-hazardous waste that generally included foundry dust, waste sand, slag, refractories, and various other dusts.

4 SITE ASSESSMENTS, INVESTIGATIONS AND INTERIM MEASURES

The property operated for many years solely as an integrated iron and steel complex. Environmental obligations exist as a result of this operation, chiefly related to the investigation and cleanup of former waste disposal locations. Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) that are potential sources of releases to the environment at the Site were initially identified as part of the RCRA Facility Assessment process completed by EPA in the 1980's and further refined during Visual Site Inspections conducted in 1991 as described in the Final RFA Report (Kearney, 1993). A total of 203 SWMUs and 28 AOCs were identified; descriptions for 41 of the SWMUs and 26 of the AOCs were provided in the report. More recently, the property has been the subject of a Phase I Environmental Site Assessment (Weaver Boos, 2014) undertaken in support the all appropriate inquiry and due diligence process of its prospective Purchaser.

4.1 Site-Wide Investigation Work

The former owner, Bethlehem Steel, agreed with the EPA and MDE to a comprehensive multimedia Consent Decree. The Consent Decree requires site wide investigation and associated corrective action for the property and compliance, closure and post closure care matters associated with two on-site landfills (Greys Landfill and the Coke Point Landfill). The initial effort for the planning of site wide investigation tasks associated with the Consent Decree provided a description of the current conditions of the Site. This work included the development of the *Description of Current Conditions Report*, (DCCR) Rust 1998.

Screening analyses of the SWMUs, AOCs and non-RFA areas were completed in the DCCR to define further investigation requirements and associated chemicals of potential interest (COPIs) for SWMUs and AOCs requiring further investigation and to screen out SWMUs and AOCs that were not observed to be releasing and requiring no further action. This analysis included review and analysis of the RFA Report, environmental files of Bethlehem Steel Corporation (including correspondence, analytical data summaries, permit information, site investigation reports, closure reports, monitoring/sampling reports and remediation reports) and on-site inspections. A total of 74 SWMUs and 10 AOCs remained for further consideration after completion of the screening analysis in the DCCR. In addition, 5 non-RFA areas were identified that required further investigation. An inventory of SWMUs, AOCs and other non-RFA areas of the Site identified and described in the DCCR and associated results of the screening analysis is presented in Table 1.

Subsequent investigations have focused on five "Special Study Areas" of the Site that encompass the significant majority of the SWMUs, AOCs and non-RFA areas identified as requiring further investigation. The special study areas include Coke Point Landfill, former Coke Oven Area, Tin Mill Canal/Finishing Mills Area, Humphrey Impoundment and Greys Landfill. Table 1 identifies the relationship between the special study areas and associated SWMUs, AOCs and non-RFA areas. Investigations have also been completed to assess on-site ecological risk on a

site-wide basis. Work has been completed including characterization of release areas, groundwater nature and extent investigations, human health risk evaluation, and screening and baseline ecological risk assessments. Data and results associated with the site-wide investigative work contained within these reports are summarized in the following sections:

- Site-Wide Investigation Release Site Characterization Study, June 2002 (CH2M Hill 2002a);
- Site-Wide Investigation: Report of Nature & Extent of Releases to Groundwater From the Special Study Areas, International Steel Group, ISG Sparrows Point, Inc. Facility, Sparrows Point, Maryland, January 2005 (URS 2005a), revised 2007;
- CA725 Facility Investigation and Human Health Risk Evaluation (HHRE) Findings, ISG Sparrows Point, June 2005 (URS 2005b);
- Ecological Risk Assessment Strategy Document; ISG Sparrows Point Facility (URS 2006a);
- Final Ecological Risk Assessment Work Plan for On-Site Areas (URS 2007).
- Screening Level Ecological Risk Assessment For On-Site Areas Final (April 2009, URS)
- Supplemental Report County Lands Parcel 1B Ponds Final (May 2009, URS)
- Final Baseline Ecological Risk Assessment for On-Site Areas (BERA) Report (URS, October 7, 2011)

More recently, Weaver Boos Consultants, LLC (Weaver Boos) performed a Phase I Environmental Site Assessment (Phase I) on behalf of the Purchaser's counsel in general compliance with the scope and limitations of American Society for Testing Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E 1527-13). The purpose of this Phase I is to identify and report, to the extent feasible, recognized environmental conditions with respect to the Property. ASTM E 1527-13 defines a recognized environmental condition as:

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

Based upon the assessments completed thus far, the Phase I revealed evidence of recognized environmental conditions and historical recognized environmental conditions in connection with the Site.

4.2 Descriptions of Site Areas

4.2.1 Coke Point Area

The Coke Point Area is approximately 300 acres in size located on the southwest portion of the Site. The area is a man-made peninsula comprised of slag from the ground surface to

approximately 15-30 feet below grade where the native sediments (silts, sands and clays) are then encountered. This area includes the former Coke Oven Area and Coke Point Landfill special study areas.

The natural groundwater hydraulic gradient is fairly flat, with a radial flow pattern moving towards the shoreline. Groundwater data suggests that an artificial hydraulic gradient is being created by groundwater pumping associated with an off-site shipyard Facility located to the northwest of Coke Point (separate ownership). This pumping appears to directly affect the fate and transport of impacted groundwater in portions of Coke Point, creating artificial groundwater movement in both lateral and vertical downward directions in response to pumping activity.

Analytical results obtained from groundwater samples collected during site investigation activities indicate that VOCs and SVOCs (predominately benzene and naphthalene) have impacted the shallow and intermediate groundwater zone at the Coke Point Area. Groundwater plumes containing dissolved VOCs and to a certain extent SVOCs exist in the slag fill in an unconfined groundwater zone occurring roughly 5 to 15 feet below the ground surface and an intermediate native material groundwater zone occurring 20 to 40 feet below the ground surface. Non aqueous phase liquid (NAPL) source areas containing benzene and naphthalene respectively are present in two distinct locations as shown on Figure 1. The benzene NAPL source area encompasses approximately 54,500 ft^2; the naphthalene source area is approximately 31,300 ft^2.

The extent of the groundwater plumes for benzene and naphthalene are shown on Figure 1. Areas in excess of 10 mg/L for benzene and 1 mg/L for naphthalene are shown which roughly approximate 1% of the respective solubility limits. The areal extent of the VOC and SVOC groundwater impacts is confined to the Coke Point fill portion of the Sparrows Point peninsula and has not migrated to the area north of the Coke Oven area. The maximum VOC concentrations (predominately benzene) are located at the northwest portion of the Coke Oven SSA. Groundwater with elevated COPI VOCs has migrated towards the southwest and northwest of the Coke Oven SSA and is present at the shoreline. The SVOC concentrations (predominately naphthalene) are more evenly distributed, and the maximum concentrations are located on the eastern half of the Coke Oven SSA. The nature of the plumes is further described as follows:

<u>Dissolved Benzene Plumes</u>:

- Shallow Depth (~ 5-20 ft. bgs)

  The northwest quadrant of Coke Point contains a plume greater than 10 mg/L currently encompassing ~ 2,450,072 ft^2 (56 acres)

  The central southern portion of the Point contains a relatively small plume greater than 10 mg/L currently encompassing ~ 67,800 ft^2 (1.6 acres)

  The northeastern quadrant contains two small benzene plumes greater than 10 mg/L

  - The northeast corner, currently encompassing ~75,000 ft^2

  - The central eastern area, currently encompassing ~75,000 ft^2

- Intermediate Depth (~30-45 ft. bgs)

  The northwest quadrant of Coke Point contains a plume greater than 10 mg/L currently encompassing ~1,820,200 ft^2 (42 acres)

Dissolved Naphthalene Plume:

- Shallow Depth (~5-15 ft. bgs)

  Upper mid-eastern portion of Coke Point, plume greater than 1 mg/L currently encompassing ~ 2,586,500 ft^2 (59 acres)

Based on monitoring data, there is no indication that significant concentrations of VOCs or SVOCs are present deeper than 75 feet below the ground surface. VOC and the SVOC concentrations decrease to below their respective reporting limits or exhibit a significant decreasing trend toward the laboratory reporting limits in all samples collected from the lower groundwater zone piezometers.

A sporadic presence of metals, including arsenic, lead and vanadium, was detected in the shallow and intermediate groundwater zones. The total metal concentrations show a general decrease throughout Coke Point in the intermediate and lower groundwater zones as native materials are encountered. The measured concentrations in the lower zone are all within the low μg/L ranges. The presence of metals in groundwater in this area at these concentrations may be related to baseline levels of metals that are present in the fill and natural soils at the Facility and not associated with historic site activities.

4.2.2 Tin Mill Canal/Finishing Mills Area

The Tin Mill Canal/Finishing Mills Area includes the Tin Mill Canal (TMC) and adjacent finishing mills area that included operations for steel plating and coating operations as shown on Figure 2. The TMC is constructed of slag materials and is approximately 7300 feet long and 30-50 feet wide at the bottom. The finishing mill area is approximately 200 acres of mill structures that discharged contact wastewaters and stormwater through sewer pipe systems to the TMC. The finishing mills are shut down and in the process of being razed and are no longer a source of contact wastewater discharges to the TMC. This work will eliminate potential future sewer discharges from the finishing mills that would be of concern.

The canal has been used historically for the conveyance of both stormwater and wastewater to a central wastewater treatment plant (HCWWTP) prior to discharge to surface water through a NPDES permitted discharge outfall. Materials that contain metals and oil/grease have been deposited in the Tin Mill Canal over time from process sewer discharges associated with the steel finishing operations. These materials are located within the entire length and width of the canal and affect water currently being controlled and discharged through the canal. The canal still receives and controls stormwater runoff from the Site; the HCWWTP remains operational to

treat stormwater runoff prior to discharge. Hydrogeologic studies have shown that the canal also controls and receives groundwater inflow from Site areas adjacent to the canal.

Impacts to groundwater at the Tin Mill Canal/Finishing Mill area are generally confined to areas adjacent to the canal and do not show impacts in piezometers located along the eastern or western shoreline downgradient from these areas. Analytical results obtained from samples collected during site investigation activities indicate that impact to the groundwater by VOCs and SVOCs are generally confined to the area adjacent to the Tin Mill Canal within the shallow and intermediate groundwater zones. Investigations did not identify issues in the groundwater surrounding the finishing mills that were of significant concern.

4.2.3 Humphrey Impoundment

Humphrey Impoundment is located in the northwest portion of the Site along the northern side of the downstream section of the Tin Mill Canal (Figure 2). The area was originally open water that was closed off when the canal construction was completed around 1970. The impoundment was subsequently filled with various materials that included in part non-hazardous wastes until the mid-1980s. The area is now predominantly characterized by dense surface vegetation (Phragmites reed beds). Existing habitat is not conducive to large wildlife populations and this characteristic is likely to be considered in assessing the potential need for corrective action.

Specific areas of the impoundment were used for the storage/placement of TMC dredge materials in areas historically noted as containment areas or TMC impoundments. The containment areas/impoundments have been identified as previously located on the southern edge of Humphrey Impoundment. Collectively these areas are approximately 4 acres in size (Figure 2).

Analytical results obtained from samples collected during site investigation and ecological risk assessment activities for the Humphrey Impoundment indicate limited potential for off-site groundwater impacts and low to negligible risk to on-site ecological receptors. Impacts to groundwater by the VOCs and SVOCs are confined to the area adjacent to the Tin Mill Canal within the shallow and intermediate groundwater zones. Concentrations of VOCs and SVOCs along the shoreline west of Humphrey Impoundment were below or approaching their respective laboratory reporting limits in the shallow intermediate and lower groundwater zones.

A limited presence of metals including lead, vanadium, thallium and chromium are present in the shallow and intermediate groundwater associated with the Humphrey Impoundment. Diffuse metals are also present in the shallow surface materials. The chromium, lead, thallium and vanadium concentrations in groundwater decrease with depth to the lower zone. The presence of metals detected in the lower groundwater zones in this area may be related to baseline levels of metals that are present in the natural soils at the Facility and not associated with Site activities.

4.2.4 Greys Landfill Area

The Greys Landfill Area includes the area occupied by Greys Landfill and areas to the north and east of Greys Landfill bounded by the Peninsula Expressway that include approximately 80 acres (area identified as County Lands Parcel 1A, Figure 3). These areas have been shown to have impacts from historical waste management practices. Volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) are present in surface soil, subsurface soil and in groundwater. Analytical results obtained from samples collected during site investigation activities indicate that impact to the groundwater by VOCs and SVOCs is confined to the shallow groundwater zone near the northern portion of the Greys Landfill. Concentrations of VOC and SVOC analytes in the shallow zone show a decreasing horizontal trend away from the source area and have been defined to be below or approaching laboratory limits in all directions. In vertical extent, VOC and SVOC analytes in the intermediate groundwater zone were not detected or were detected at values approaching the laboratory limits. A limited presence of metals including arsenic and thallium are present in the shallow and intermediate groundwater. These analytes appear to be confined to the area along the northern border of the Greys Landfill. The measured concentrations are within low μg/L ranges.

4.3 Interim Measures

4.3.1 Rod and Wire Mill Area

Interim Measures are currently underway at the former Rod and Wire Mill Area as described below and shown on Figure 4:

- Institutional controls for soils have been established to provide a "Restricted Work Area" to control the exposure of on-site workers to soils in the Former Sludge Bin Storage Area.
- A groundwater monitoring network has been installed including the use of 31 wells for monitoring the performance of the groundwater pump and treat system. This monitoring network is used to collect water level and groundwater quality data.
- A groundwater pump and treat system is operated and maintained consisting of two intermediate depth zone recovery wells (RW10-PZM020 and RW15-PZM020) that operate at a rate of between 5.0 and 12.0 gallons per minute (gpm). The expected normal operating rate for the treatment plant was set at a combined rate of 8.0 to 12.0 gpm with a maximum design flow of 25 gpm. Recovered groundwater is transported via a pipeline to the Humphreys Creek Wastewater Treatment Plant (HCWWTP) for subsequent treatment and discharge in accordance with the NPDES permit requirements for the Facility.
- Average cadmium and zinc concentrations measured in the groundwater recovery wells in 2012:
  <u>RW10</u>
  Cd = 12 ppm (~142 lbs for the year mass recovered)

Zn = 470 ppm (~5,805 lbs for the year mass recovered)
RW15
Cd = 3.3 ppm (~41 lbs for the year mass recovered)
Zn = 51 ppm (~637 lbs for the year mass recovered)

4.3.2 Coke Oven Area

Interim measures (IMs) have been developed to address identified environmental conditions at the Coke Oven Area (COA). Six IM "Cells" have been identified at the COA as described below and shown on Figure 1:

- Cell 1: Prototype Air-Sparge/Soil Vapor Extraction (AS/SVE) System in the Former Benzol Processing Area
- Cell 2: AS/SVE and Groundwater Extraction System in Former Coal Storage Area
- Cell 3: AS/SVE System in "Cove" Area
- Cell 4: In-Situ Anaerobic Bio-treatment Area in Coal Tar Area
- Cell 5: Groundwater Extraction at the Turning Basin Area
- Cell 6: LNAPL Recovery at the Former Benzol Processing Area

As of December 31, 2013, Cells 1, 3, and 6 are operational. Design work was completed on the IM remediation systems for Cell 2 and Cell 5 and submitted for approval on August 6, 2013. Approval for both systems was received from EPA on September 10, 2013. As part of this approval, the bio-treatment process at Cell 4 has been discontinued and a combined Cell4/Cell5 remediation design has been approved. Further details of the IM systems are as follows:

4.3.2.1 Cell 1: Prototype AS/SVE System in the Former Benzol Processing Area

Cell 1 consists of an AS/SVE system coupled with vapor destruction via an electric catalytic oxidation (CATOX) unit. In total, Cell 1 has destroyed approximately 11,903 pounds of recovered hydrocarbons since operational startup in August 2010. A decreasing total volatile organic compound (VOC) concentration trend is documented at the groundwater wells monitored for system performance in this location.

4.3.2.2 Cell 2: AS/SVE and Groundwater System in Former Coal Storage Area

Design work was completed in 2013 on the IM remediation systems for Cell 2 and submitted for approval on August 6, 2013. Approval for the Cell 2 system was received from EPA on September 10, 2013. The Cell 2 system includes: 1) groundwater extraction from selected wells installed into the semi-confined intermediate sand unit below the slag groundwater zone, 2) treatment of that recovered groundwater, 3) re-injection of the treated groundwater, and 4) AS/SVE in the slag groundwater zone. The intermediate groundwater sand unit ranges from approximately 20 feet below ground surface to approximately 40 to 45 feet below ground surface. The remediation design for this zone is to operate a pump and treat groundwater system that utilizes a low profile air stripper and a CATOX unit to destroy all VOC vapors generated

prior to exhausting to the atmosphere. The remediation design for the shallow groundwater zone is to operate an AS/SVE system, recover stripped VOCs, and destroy those captured VOCs in a CATOX unit prior to the air stream being released to the atmosphere.

4.3.2.3 Cell 3: AS/SVE System in the "Cove" Area

Cell 3 consists of an AS/SVE system coupled with vapor destruction via an electric CATOX unit. In total, Cell 3 has destroyed approximately 1,352.4 pounds of recovered hydrocarbons since system startup on June 24, 2011. Since system startup, a generally decreasing VOC concentration trend in groundwater is documented for some of the monitoring wells. The trends for these monitoring wells will continue to be monitored and assessed during system operation in future months.

4.3.2.4 Cell 4: In-Situ Anaerobic Bio-treatment Area

The in-situ anaerobic bio-treatment system at Cell 4 has been discontinued as of the end of third quarter 2013. The treatment area at Cell 4 has been incorporated into the design of Cell 5, which will be installed in the first quarter 2014.

4.3.2.5 Cell 4/5: Groundwater Extraction at the Turning Basin Area

Design work was completed in 2013 on the IM remediation systems for Cell 4/5 and submitted for approval on August 6, 2013. Approval for the Cell 4/5 system was received from EPA on September 10, 2013. The Cell 4/5 system includes a remediation design that addresses a shallow groundwater contamination source area (Cell 4) and the area between the source and the shoreline (Cell 5) at the Turning Basin area. The remediation system involves using high vacuum extraction points from which both soil vapor and groundwater will be recovered and sent through a low profile air stripper in an effort to promote the volatilization of naphthalene and other dissolved volatile organic compounds (VOCs). All recovered soil vapor and generated off-gas would be sent through VGAC vessels prior to being discharged to the atmosphere. The treated groundwater would be sent to re-injection trenches located up-gradient of the plume. In addition to providing a "flushing" effect across the source area, the introduction of treated water will eventually help alter the water chemistry inside the source area to a point where bio-augmentation efforts may be a viable in-situ treatment option in the future.

4.3.2.6 Cell 6: LNAPL Extraction at the Former Benzol Processing Area

The Cell 6 LNAPL monitoring and recovery system operated during 2013. An estimated 1971 gallons (14,450 pounds) of LNAPL were recovered during 2013, bringing the total recovered LNAPL to 10,346 gallons (75,802 pounds) as of December 31, 2013. The existing LNAPL recovery systems will be operated in 2014 with periodic adjustments to the pumps and other components to maximize product recovery.

5 CONCEPTUAL CLEANUP AND RESPONSE PLAN

5.1 General Approach

This section presents conceptual cleanup and response actions that are anticipated to support the renewal of the Sparrows Point Site with redevelopment comprised solely of commercial/industrial activity. The Site has been previously used for steel manufacturing further regulated as a single parcel by a 1997 Consent Decree that covers the entire Site. Efforts will be completed to return the entire Site to "market ready" conditions and to complete response actions for select areas of the Site in an effort to return these areas to productive use.

Site-wide institutional and legal controls will be established and integrated within the response actions. These controls are anticipated to include, but will not necessarily be limited to, the following:

- Deed restriction for commercial/industrial site use only, no portion of the Site will be used for agricultural, recreational or residential purposes
- Deed restriction on groundwater use, no subsurface water or groundwater will be extracted from aquifers for any purpose
- Development and implementation of soil/materials management plans for remedial and redevelopment activities
- Where necessary, restriction on development/reuse or use of vapor intrusion control technologies for occupied buildings

5.2 Closure Approach

Significant environmental work has been conducted by former owner/operators under the Consent Decree and the data reveals that the majority of the Site is not subject to future remedial efforts under the Consent Decree. Regulatory obligations for remediation, closure and pathway exclusion of applicable areas of the Site that will also support market ready redevelopment are currently being clarified with the EPA and the MDE. These obligations have been defined as *market ready closure.* It is contemplated that approximately 2400 acres of the Site will be removed from the jurisdiction of the Consent Decree and be transferred to and subject to the process for obtaining closure (including financial assurance and public comment) for parcels in the Administrative Order on Consent entered into between the State and HRP. As such, separate remediation plans will be developed based upon the concepts outlined in this SCCP that will be intended to address regulatory obligations remaining under the Consent Decree and Prospective Purchaser Agreement (Special Study Areas) and regulatory obligations for areas of the Site removed from the Consent Decree (State Administrative Order Areas) to obtain a market ready closure.

The contemplated Special Study Areas and State Administrative Order Areas are shown on Figure 5 and described further as follows:

- **Special Study Areas** - Areas of Facility that include SWMUs and AOCs listed in EPA's August 12, 1993 RFA and as further clarified in the DCCR, including recognized environmental conditions identified in the Phase I report. Regulatory obligations and closure will be conducted in accordance with the terms of the Consent Decree. The Special Study Areas include work associated with site-wide groundwater closure obligations;

- **State Administrative Order Areas** - Areas of the Facility that include nominal SWMUs or AOCs listed in EPA's August 12, 1993 RCRA Facility Assessment (RFA) as further clarified in the DCCR, and may include recognized environmental conditions identified as part of the Phase I process. This area is proposed to be removed from the definition of Facility or Site under the Consent Decree and regulatory obligations and closure will be conducted in accordance with the contemplated Administrative Order on Consent to be entered into between the State and HRP. It is understood, however, that although market ready closure will be achieved through the Administrative Order on Consent, a final closure must occur through EPA's RCRA Statement of Basis process, through which a Certificate of Completeness will be issued.

Area specific conceptual cleanup actions will be implemented to complete the closure process required by the Consent Decree and the Prospective Purchaser Agreement and to complete a closure process that will be defined in the State Administrative Order. Corrective measures studies will be completed for areas that require response actions in accordance with the Consent Decree. The corrective measures study will define current conditions, completed remedial measures, and remaining environmental efforts such as monitoring and reporting for the Site such that closure approvals can be obtained for these areas. The State Administrative Order is anticipated to provide the framework for completion of response actions in general conformance with the Maryland Voluntary Cleanup Program (VCP).

5.3 Area-Specific Conceptual Cleanup Actions

An inventory of SWMUs, AOCs and other non-RFA areas of the Site identified and described in the DCCR is presented in Table 1. Further analysis and segregation of this inventory by geographical location, previous operations and likelihood of further remediation required is shown in Table 2. Analysis is provided to define the likelihood of further remediation (or likelihood for no further action) and the associated rationale for further remediation (no further action). Recognized environmental conditions identified in the Phase I will also be considered and incorporated as appropriate.. An outline of the conceptual cleanup plans including the information provided to the MDE and EPA on April 7, 2014 is shown on Table 3 and further described as follows.

5.3.1 Special Study Areas

Environmental Investigation Work Plans (EIWPs) will be developed for the Special Study Areas that will define the path forward for environmental investigations, remediation, pathway exclusion and closure. As necessary and appropriate, the EIWPs will be specifically integrated with proposed development plans for parcels within the Special Study Areas. Approval from the Agencies will be required to initiate work for the EIWP. This effort will include interactions with the Agencies including presentation of the proposed environmental work and the proposed site development plan.

Cleanup actions designed to address defined remedial objectives may be implemented as interim measures that would then be subject to monitoring and institutional controls identified as part of a subsequent corrective measures study and the associated corrective measures implementation. The conceptual cleanup actions planned for Special Study Areas are further described as follows:

5.3.1.1 Coke Point Area

Contaminants of concern include dissolved benzene, naphthalene, and non-aqueous phase liquid (NAPL). The primary exposure pathway for the Coke Point Area, which includes the COA and Coke Point Landfill, is the release of groundwater to surface water of the Patapsco River. Off-site migration of benzene through groundwater within the shallow or intermediate aquifers is also of concern. The natural groundwater hydraulic grade is fairly flat, with a radial flow pattern moving towards the shoreline. Potential risks may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Corrective actions will mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface WQS for VOCs and SVOCs. Remediation criteria also include the removal of NAPL sources to mitigate continuing groundwater sources of contamination and actions to mitigate the potential for migration of contaminated groundwater to offsite areas as follows:

<u>Groundwater</u>

- Remove NAPL sources to mitigate ongoing contribution to groundwater contamination
- Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
- Mitigate potential off-site migration of contaminated groundwater

<u>Soil Vapor</u>

- Prevent migration of soil vapor for occupied structures

Response actions for the Coke Point Area are anticipated to include: in-situ source area removal and treatment, mitigation of migration to adjoining surface water above acceptable

concentration(s), and mitigation of potential off-site migration. These actions will initially include the implementation or continued operations of currently approved interim measures as previously and recently agreed by the Seller. Additional response action(s) that might be found necessary to meet the remediation criteria or to allow for the termination of currently approved remediation measures will be undertaken in accordance with an EIWP subject to the approval of the Agencies. The EIWP will include details regarding necessary plans, investigative studies, or risk assessments to assist in developing the remediation objectives, compliance requirements, and define future monitoring obligations.

Elements of the EIWP for the Coke Point Area are anticipated to include delineation of contaminated areas through additional surface and subsurface investigations; evaluation of in-situ treatability parameters such as grain size and design hydrogeochemical data including pH and other aspects; groundwater flow modeling including fate and transport analysis; and ecological and human health risk assessments to assist in the development of remedial compliance requirements. A numerical model will be developed using the U.S. Geological Survey's SEAWAT, or equivalent, to evaluate groundwater flow and solute transport under current and future conditions. SEAWAT is a computer program capable of simulating three-dimensional, variable-density groundwater flow and solute transport and is well suited for applications involving coastal discharge conditions. The model will be used to simulate mass transport over time to predict the extent of contaminant discharge along the peninsula's boundary and to evaluate the influence of remediation measures. Biodegradation and attenuation will be considered and incorporated into the solute transport model, if appropriate. The output of the model will be used to estimate chemical concentrations associated with groundwater discharge in sediments, sediment pore water and in the surface water column in the near-shore area surrounding the Coke Point Area. It is anticipated that groundwater simulation(s) will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Simulation Objective(s)
2. Scope and extent – horizontal and vertical
3. Data Collection – existing and new
4. Data Evaluation – existing and new
5. Hydraulic Properties of the System
6. Boundary Conditions
7. Initial Conditions
8. Transient or Steady-State
9. Code Selection and Implementation
10. Calibration

11. Execution and Presentation
12. Evaluation of Uncertainty

Key aspects of the groundwater simulation such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

Supplemental human health and ecological risk assessments will be conducted to evaluate potential exposures on-site and in the near-shore areas where groundwater discharges. The on-site evaluation will assess risks to workers under current and future conditions. The off-site evaluation will focus on ecological and human health risks associated with the discharge of chemicals from groundwater to nearshore areas. The risk assessments will follow EPA guidance for human health and ecological risk assessment. Measured data for Site materials will be used to assess risks to future workers at the Site. Model-predicted concentrations of chemicals in sediment, sediment pore water, and the surface water column will be used as exposure concentrations in the risk assessment for the off-site nearshore areas. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges based in part on surface water quality standards for VOCs and SVOCs including benzene (0.51 mg/L) and others to be determined. It is anticipated that risk assessment(s) will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Applicable Guidance and Framework
2. Data Collection – existing and new
3. Data Evaluation – existing and new
4. Exposure Assessment – exposure assumptions
5. Toxicity Assessment – hierarchy of information sources
6. Risk Characterization – methods, individual substances, aggregate risks

Key aspects of risk assessment(s) such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

Figure 1 presents a schematic plan for the Coke Point Area. Details of response actions anticipated for Coke Point are as follows:

5.3.1.1.1 NAPL Benzene Source Area (Cell 6)

Mechanical/physical recovery methods are planned to remove LNAPL occurring within the benzene NAPL source area. This will initially be provided by continued operation of the approved Cell 6 Interim Measure. The impacted area is estimated at 54,500 square feet based on the physical occurrence of LNAPL measured in monitoring wells from data taken in 2013.

Additional information will be provided to address the agency's concern that a separate area of LNAPL may be present as expressed on April 7, 2014. The existing recovery system will be expanded to address additional LNAPL-affected areas (if any) and include recovery trenches and additional fluid withdrawal systems to recover LNAPL that can be physically removed from the subsurface. A secondary in-situ polishing effort will then be implemented for this area that will likely involve the use of chemical additives such as oxidants to further mitigate the ongoing presence of LNAPL source materials. It is proposed that LNAPL recovery be terminated at a specific recovery Facility such as a recovery well when its rate of recovery during normal operation declines to less than two (2) gallons per month.

5.3.1.1.2 NAPL Naphthalene Source Area (Cell 4/5)

Mechanical/physical recovery methods are planned to remove NAPL occurring within the naphthalene NAPL source area. This will be provided initially by implementation of the recently approved Interim Measure design for this area. The impacted area is estimated at 31,000 square feet based on the physical occurrence of NAPL measured in monitoring wells from data taken in 2013. The recently approved Interim Measure system will be implemented, operated, and possibly expanded to include extraction with localized surfactant application to recover NAPL that can be physically removed from the subsurface. A secondary in-situ polishing effort will then be proposed for this area that will likely involve the use of chemical additives such as oxidants to further mitigate the ongoing presence of NAPL source materials.

It is anticipated that upgrades of approved Interim Measures such as this will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Remedial Objectives
2. Data Collection and Evaluation
3. Bench Studies or Pilot Studies
4. Design Methodology

Key aspects of proposed upgrade(s) or change(s) such as those listed above will be listed in the EIWP for review and approval by the agency following resolution of comments that may be received.

5.3.1.1.3 Dissolved Groundwater Plumes (Cell 2)

Groundwater extraction, ex-situ treatment, reinjection, and AS/SVE is planned in this area. These elements will initially be provided by implementation of the recently approved Interim Measure design for this area. Later, a subsurface low permeability barrier is proposed to be installed along the northwest shoreline of Coke Point within which groundwater flow is being artificially influenced by off-site pumping. The barrier is anticipated to be constructed using slurry wall techniques approximately 2100 feet long and keyed into a silty clay horizon that occurs at a depth of 60 feet below the ground surface. Flow-through treatment is also being

considered. Recognizing the agency's April 7, 2014 comment regarding the use of flow barriers, design of such a barrier will consider the results of groundwater simulation studies as earlier discussed in Section 5.3.1.1. Several alignment locations are possible parallel to the shoreline as shown on Figure 1. The subsurface barrier will be designed to reduce the hydraulic gradient imposed by the offsite pumping activity and prevent offsite migration of the dissolved plume in the unconfined groundwater zone in the slag and the intermediate groundwater zone.

Flow barrier design(s), if used, or other remediation efforts will be preceded by an early coordination meeting with the Agencies to provide input on key considerations such as:

1. Objectives
2. Material of construction
3. Method(s) of construction
4. Proposed permeability
5. Long-term compatibility
6. Data needs
7. Design methods
8. Testing and construction QA/QC
9. Long-term performance monitoring

5.3.1.1.4 Dissolved Groundwater Plumes (Cell 3)

Initial response action in this area will include continued operation and maintenance of the approved Interim Measure. Expanded corrective measures are anticipated to be proposed in the Cell 3 shoreline location to mitigate groundwater discharges from this shoreline area for which the design will be finalized subsequent to groundwater modeling and risk assessment work to be completed as part of the EIWP. Corrective actions are planned that will double or triple the size of the treatment area of the current Air Sparge/Soil Vapor Extraction system in this area.

5.3.1.1.5 Dissolved Groundwater Plumes (Cell 4/5)

The Cell 4/5 treatment system will be operated to mitigate shoreline impacts on the eastern side of Coke Point. Further investigation is anticipated outside and to the northeast of the remediation system at Cell 4/5 subsequent to startup of the system to define shoreline impacts, if any. In-situ treatment may be implemented in this area and will likely be a chemical oxidation application. The agency's comment relative to in-situ treatment under elevated pH conditions will be addressed as part of the bench or pilot study process as earlier discussed.

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Institutional controls may include the

requirement for vapor mitigation systems for occupied buildings in certain areas. Closure tasks for this area may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. Timeframe for completion of this work is estimated at 24 to 36 months as shown on Table 3.

5.3.1.2 Tin Mill Canal/Finishing Mills Area

Contaminants of concern in this area include metals, organics, or oil & grease affecting the sediment and banks of the Tin Mill Canal (TMC), and thus potentially the stormwater that continues to be conveyed by the TMC. Remediation will focus on the mitigation of future exposure pathways from contaminated sediment, impacts to stormwater conveyed by the canal, and elimination of contaminants from the aggregate TMC discharge requiring treatment at the HCWWTP as follows:

Sediment

- Prevent potential future direct exposure to contaminated sediments located within Tin Mill Canal

Surface Water

- Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater at the HCWWTP

Figure 2 presents a schematic plan for the Tin Mill Canal/Finishing Mill Area. Response actions being considered for the Tin Mill Canal/Finishing Mills Area are anticipated to include either removal and disposal of impacted sediments associated with the canal or isolation techniques with sediments remaining in place and the subsequent installation of acceptable isolation and channel stabilization materials. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans and investigative studies to define the area and volume of sediments to be removed, provide waste characterization of the materials for proper disposal and complete the channel stabilization design. Early coordination and agency input on considerations specific to this area will be solicited as discussed earlier.

Response actions being considered are further described as follows:

- Dredging and removal of sediment from the TMC – estimated amount to be removed - 7300' x 40' x 5' (the 5' being the thickness of sediment to be removed) = ~54,000 cu yds of material
- Disposal will require TCLP waste determinations
- Non-hazardous materials are planned to be acceptable for disposal at Greys Landfill
- Isolation of the sediments by covering the sediments with an engineered barrier that will allow the sediments to remain in-situ and mitigate future exposure of stormwater conveyed through the TMC;

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area may include future NPDES surface water discharge requirements. Surface water discharge modeling may be appropriate and will necessarily be integrated with site development plans. Continuing stormwater discharges from the TMC will need to meet current and potential future surface water quality criteria associated with NPDES discharge permits for the Site to eliminate the need for ongoing treatment at HCWWTP. These criteria are anticipated to be focused on surface water quality standards for metals such as, but not limited to, copper (0.0061 mg/L), nickel (0.0082 mg/L) and zinc (0.081 mg/L). The quality of shallow groundwater discharging to the TMC is a consideration as commented by the agency on April 7, 2014 and will be specifically addressed in the EIWP. Timeframe for completion of this work is estimated at 18 to 24 months as shown on Table 3. Completion is anticipated to be documented in the Corrective Measures Implementation report.

5.3.1.3 Rod and Wire Mill Area

Contaminants of concern include primarily cadmium and zinc affecting surface soil, subsurface soil, and groundwater. The primary exposure pathways for the Rod and Wire Mill area include potential exposure to surface soil and the potential discharge of groundwater to surface water of Bear Creek. Groundwater, when the pump and treat system is not operating, has been shown to flow west-southwesterly across the impacted areas towards Bear Creek adjacent to the former Rod and Wire Mill. Potential risks may be present for this exposure pathway from direct toxicity of dissolved metals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Response actions will be implemented to mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface water quality standards (WQS) for cadmium and zinc. Corrective actions will be completed to mitigate impacts and eliminate the requirement to operate and maintain existing interim measures (i.e. the pump and treat system). Remediation will focus on the mitigation of future exposure pathways from contaminated soil and groundwater as follows:

<u>Soil</u>

- Prevent potential future direct exposure to contaminated surface soil
- Mitigate future leaching to groundwater

<u>Groundwater</u>

- Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure currently consisting of pumping and treatment of groundwater in this area

Response actions for the former Rod and Wire Mill Area are anticipated as follows:

- Removal of contaminated surface soils and installation of clean fill;
- In-situ soil stabilization if technically viable and necessary for the selected mitigation approach; and,
- Potential installation of a passive downgradient groundwater treatment system.

An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies, and risk assessments to assist in developing the remediation objectives, compliance requirements, and future monitoring obligations. The agency's comments relative to the implementation of in-situ stabilization on April 7, 2014 will also be addressed.

Site investigation and design work will include delineation of contaminated areas through additional surface and subsurface investigations, evaluation of in-situ treatability parameters such as grain size and design geochemical data, groundwater flow modeling including fate and transport analysis, and ecological and human health risk assessments to assist in the development of remedial compliance requirements. A numerical model based on the U.S. Geological Survey's SEAWAT, or equivalent, is anticipated to evaluate groundwater flow and solute transport under current and future conditions. The model is anticipated to simulate mass transport over time to predict the extent of contaminant discharge along the peninsula's boundary and to evaluate the influence of remediation measures. Biodegradation and attenuation will be considered and incorporated into the solute transport model, if appropriate. The output of the model is anticipated to estimate chemical concentrations associated with groundwater discharge in sediments, sediment pore water and in the surface water column in the near-shore area surrounding the former Rod and Wire Mill area. Early coordination and agency input on considerations such as bench or pilot studies and groundwater flow simulation will be solicited as previously discussed.

Supplemental human health and ecological risk assessments are anticipated to be conducted to evaluate potential exposures on-site and in the near-shore areas where groundwater discharges. The on-site evaluation will assess risks to workers under current and future conditions. The off-site evaluation will focus on ecological and human health risks associated with the discharge of chemicals from groundwater to near-shore areas. The risk assessments will follow EPA guidance for human health and ecological risk assessment to be agreed in advance. Measured data for Site materials will be used to assess risks to future workers at the Site. Model-predicted concentrations of chemicals in sediment, sediment pore water, and the surface water column will be used as exposure concentrations in the risk assessment for the off-site near-shore areas. The results of the risk assessment will be used to refine necessary corrective measures and define compliance concentrations for non-point groundwater discharges. This work will be focused on mitigating the potential for groundwater discharges to Bear Creek containing cadmium and zinc that exceed acceptable risk based concentrations based in part on surface water quality standards for cadmium (0.008 mg/L) and zinc (0.0081 mg/L). Early coordination and agency input on

considerations specific to risk assessment implementation will be solicited as previously discussed.

Figure 4 presents a schematic plan for the Rod and Wire Mill Area. In-situ soil stabilization is under consideration for areas associated with the former sludge bin storage area and the east pond. In addition to consideration of the in-situ treatment process, it is anticipated that contaminated surface soils from depths of less than 3 feet at the former sludge bin storage will be removed and replaced with clean fill. Once soil remediation is complete, an area of approximately 3 acres will be protected with an engineered barrier, possibly comprised of a clean soil cover or approved equivalent.

An in-situ continuous permeable reactive barrier (PRB) or funnel and gate PRB system using BOF slag or zero valent iron (ZVI) material is under consideration to be installed downgradient and in parallel with the shoreline to mitigate the potential for non-point source discharge of groundwater above acceptable risk-based concentrations. Reactive media selection and PRB design are to be based on pilot testing and/or small-scale bench studies. These remedial options are included as a contingency to be finalized subsequent to groundwater modeling and risk assessment work to be completed as part of the remediation plan. Conceptual downgradient remedial options are also shown in plan view on Figure 4 and further described as follows:

OPTION #1: Continuous PRB

- ~ 600 ft long, ~ 3 ft wide, ~ 30 (to 40) ft deep approx. volume: 2,000CY @30' depth
- Comprised of BOF Slag and/or a ZVI material
- ~100 ft long, 3 ft wide, ~30 ft deep grout wall wings on each end, angled to ensure collection of impacted groundwater and force it through the PRB

OPTION 2: Funnel & Gate PRB System

- ~ 800 ft long, ~ 3 ft wide, ~ 40 to 50 feet deep
- Funnel sections to be impermeable grout
- Gate sections to be replaceable BOF Slag and/or a ZVI material

OPTION 3: Contractor-suggested alternative

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area are anticipated to include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. The Corrective Measures Implementation report is anticipated to document completion of this response action. Timeframe for completion of this work is estimated at 12 to 24 months.

5.3.1.4 Greys Landfill Area (County Lands)

Contaminants of concern in this area include VOCs or SVOCs affecting surface soil or groundwater. The primary exposure pathways for the Greys Landfill area are direct exposure to surface soil and the potential release of affected groundwater to surface water of Bear Creek. Groundwater has been shown to flow west-southwesterly across the impacted areas towards Bear Creek adjacent to Greys Landfill. Potential risks may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Final corrective action will utilize groundwater compliance concentrations derived from risk assessment work to be completed using in part surface water quality standards (WQS) for VOCs and SVOCs. Remediation will also include mitigation of potential future exposure to contaminated media as follows:

Soil

- Prevent future direct exposure to contaminated surface soil
- Mitigate future leaching to groundwater

Groundwater

- Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Soil Vapor

- Prevent migration of soil vapor into occupied structures

Response actions for the Greys Landfill area are anticipated to include in-situ source treatment for VOCs and SVOCs involving either chemical and/or biological methods as necessary to mitigate groundwater discharge concerns and placement of cover material. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies and risk assessments to assist in developing the remediation objectives, compliance requirements and future monitoring obligations. Site investigation and design work will include delineation of contaminated areas through additional surface and subsurface investigations, evaluation of in-situ treatability parameters such as grain size and design geochemical data, groundwater flow modeling including fate and transport analysis, and ecological and human health risk assessments to assist in the development of remedial compliance requirements to be implemented as previously discussed.

Information is not yet available to define areas requiring in-situ source treatment. Cover material is anticipated to be placed over an area approximately 5 to 10 acres in size to mitigate potential future exposure to surface soil. Work is anticipated to refine data associated with the current conditions of this area and utilize modeling and risk assessment methods to demonstrate compliance.

This area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. The Corrective Measures Implementation report is anticipated to document completion of this response action. Timeframe for completion of this work is estimated at 12 to 24 months.

5.3.1.5 Humphrey Impoundment Area

Contaminants of concern are anticipated to include metals, organics, or oil & grease affecting surface material or groundwater. Potential exposure pathways and associated requirements for corrective action at the Humphrey Impoundment Area are planned to be evaluated through the preparation of a risk assessment. A Baseline Ecological Risk Assessment has been completed and submitted for the area that concluded low to negligible risk to on-site ecological receptors. Based on this work, response action associated with current ecological conditions is not anticipated to be required. Development for occupied use is not expected in this area which will minimize future exposure pathways. Potential risks may be present from direct toxicity of surface metals to wildlife receptors, accumulation in foodwebs, surface water aquatic life, and human health. Remedial alternatives for Humphrey Impoundment will include an evaluation as to whether the existing vegetative cover (Phragmites) is adequate for the future, or whether a soil or other cover will be needed long-term to mitigate future leaching to groundwater and the potential for non-point source discharge of groundwater above acceptable risk-based concentrations.

Response actions for the Humphrey Impoundment Area are anticipated to include integrated activities associated with completion and approval of a risk assessment for the area and site development plans. Institutional controls are planned to limit future direct contact exposure pathways. An EIWP will be necessary to support this work which will be submitted for approval by the Agencies. The EIWP will include details regarding necessary plans, investigative studies and risk assessments to assist in developing the remediation objectives, compliance requirements and future monitoring obligations as previously discussed.

Exploration, delineation, and possible corrective action for the former TMC containment areas may also be required. These areas are approximately 4 acres in size and located approximately as shown on Figure 2. Information is not yet available to assess the remedial requirements for these areas. Work is planned to refine data associated with the current conditions of the impoundment and investigate the potential presence of conditions requiring response action associated with the former TMC containment areas.

The Humphrey Impoundment Area will be subject to post-remediation obligations including the completion of a Corrective Measure Study that is expected to define implementation requirements for institutional controls and groundwater monitoring. Closure tasks for this area

may include future groundwater monitoring requirements to confirm the adequacy of the remedial measures. Timeframe for completion of this work is estimated at 12 to 18 months.

5.3.1.6 Site Wide Groundwater

Information will be submitted to the Agencies to evaluate groundwater conditions and potential groundwater impacts on a site-wide basis. The work will include data, assessments, and corrective actions completed for Special Study Areas of the Site as well as sufficient information to assess potential groundwater impacts from areas planned to be removed from the Consent Decree.

The primary exposure pathway of the Site is the release of impacted groundwater to surrounding surface waters. Deed restrictions are planned to be put in place to restrict the extraction of shallow groundwater for any purposes other than remedial activities. Because of several natural and site specific factors such as brackish and other Site related conditions, shallow groundwater is not an actual or reasonably expected source of drinking water. The Sparrows Point peninsula exists downgradient from other land areas and potential users of shallow groundwater. The natural groundwater hydraulic grade of the peninsula is fairly flat, with a radial flow pattern moving towards the shoreline. Potential risks in surface water may be present for this exposure pathway from direct toxicity of chemicals to benthic organisms, accumulation in foodwebs, surface water aquatic life and human health. Corrective actions for specific areas described previously will be designed to mitigate this exposure and utilize groundwater compliance concentrations derived from risk assessment work to be completed based in part on surface water quality standards (WQS).

It is anticipated that the assessment of site-wide groundwater will be preceded by an early coordination meeting with the agencies to provide input on key considerations such as:

1. Applicable Guidance and Framework
2. Groundwater Remedy Decision Framework, point of compliance and cleanup goals
3. Technical impracticability of groundwater restoration
4. Alternate Remedy Selection
5. Data Collection Requirements – Phase I and II Areas and Consent Decree Areas
6. Data Evaluation Requirements

5.3.2 State Administrative Order Area

Isolated SWMUs, AOCs, and non-RFAs concerns have been identified in State Administrative Order Area including the Hot Mill Area, Primary Rolling Mills Area, Furnace Areas and in general areas of the Site as shown in Table 2. The Phase I also documented the presence of recognized environmental conditions that require further investigation. Work is planned to

refine data associated with the current conditions of these SWMUs, AOCs non-RFA areas and recognized environmental conditions and investigate the potential presence of unacceptable conditions.

Information will be submitted to the Agencies to request certifications for completion of work for a parcel with no further action. Additional investigation, including equivalent updated Phase I and/or focused Phase II investigations will be conducted as required for specific parcels to be developed to provide supporting information to evaluate the potential of environmental impacts. This information will include:

- A specific description of the size and location of the parcel to be removed
- The name of the prospective purchaser/tenant and intended use of parcel (if applicable)
- A summary of the parcel history and current conditions. The summary will include applicable elements of ASTM E 1527-13 Standard Practice for Environmental Site Assessments (Phase I)
- Results of Phase II activities characterizing the parcel and its specific recognized environmental conditions (if any)

Additional data will be submitted specific to SWMUs, AOCs, non-RFA areas, or recognized environmental conditions that have been identified in the parcel. The path forward for certification for completion of work with no further action or remediation and continuing regulation including a defined closure process will be determined based on review of the submitted information.

As discussed with the agencies on April 7, 2014. assessment, further investigation, or response action(s) in the State Administrative Order Area is proposed to be undertaken consistent with the general and technical requirements of the Maryland VCP as set forth at Section 7-506 of the Environment Article of the Maryland Code, as may be supplemented or modified by the Administrative Order on Consent and Covenant Not To Sue As site wide groundwater will be considered as a Special Study Area, investigations and subsequent response actions, if necessary, are anticipated to be focused on soil conditions of the parcel. Work is planned to refine data associated with the current soil conditions of the parcel and investigate the potential presence of unacceptable conditions. Response actions, if required, will be supported by necessary plans, investigative studies and risk assessments.

Technical and other requirements of the VCP are understood to include but not be limited to the following:

1. Allowable Land Use Controls
2. Environmental Site Assessments
3. Cleanup Criteria Selection
4. No Further Requirements Determination(s)

5. Response Action Plan(s)
6. Issuance of Certificate of Completion
7. Oil Contaminated Sites

The time frame for completing the investigation of parcels within State Administrative Areas is anticipated to reflect the incremental renewal of the overall site and is therefore proposed to allow for flexibility. The eligibility for certifications for completion of work is anticipated to include parcels that demonstrate the absence of recognized environmental conditions that will be sufficiently defined by the Phase I process. Timeframe to complete the request for no further action for these areas is estimated at three to six months.

If MDE determines that development of a response action plan (RAP) is necessary, a proposed RAP will be submitted for approval, including a schedule for implementation and completion of the plan. Following completion of the RAP to the satisfaction of MDE, a No Further Requirements Determination (NFRD) or Certificate of Completion (COC) will be issued. Once initiated for a specific parcel, it is proposed that the investigative and remedial work (if necessary) will generally be completed within 12 to 24 months.

Submittal of specific parcel(s) for consideration under this process will include designation of its planned future use. A NFRD or COC issued for the parcel will be contingent upon its future use. Currently anticipated future use of parcels at the site includes:

- Tier 2B (Commercial Restricted); or,
- Tier 3B (Industrial Restricted).

6 COMPLIANCE PLAN FOR SOLID WASTE LANDFILLS

6.1 Compliance Actions

Actions will be undertaken to provide operational compliance, implement closure in accordance with applicable closure plans developed for the landfills and provide post-closure care requirements for Coke Point and Greys Landfills. Plans are not to operate Coke Point Landfill. Specific objectives include the following:

Coke Point Landfill

- Complete closure and post-closure care compliance obligations, including the development of closure plans to be approved by the Maryland Department of the Environment (MDE);

Greys Landfill

- Complete operational, closure and post-closure care compliance obligations, including the completion of closure plans that have been approved by MDE;

6.2 Coke Point Landfill

Coke Point Landfill is not planned to be used including further management of non-hazardous waste materials. Waste materials have not been received at this landfill since the change in ownership from RG Steel Sparrows Point LLC to Sparrows Point LLC. Sparrows Point LLC does not intend to use the Coke Point Landfill Facility to manage waste materials and has also further informed other entities operating at the Sparrows Point Site that waste materials are not to be managed at this landfill.

Coke Point Landfill will continue to be used for slag storage and tenant scrap metal recycling and iron bearing material recovery operations until mid-year 2014. The future use of Coke Point Landfill, including the schedule for closure, will also be contingent upon the ongoing interest by the Maryland Port Administration to acquire the parcel for potential dredged material containment Facility use.

Work will be completed to develop final grading and closure plans for the Facility for submittal to the appropriate regulatory authorities. Once approved, the landfill will be closed in accordance with the closure plan requirements.

The requirements for post-closure care include the following obligations: 1) semi-annual groundwater monitoring, analysis and reporting, 2) semi-annual landfill inspection and reporting, and 3) landfill surface and closure cap maintenance. The post-closure care period has been estimated at ten years.

6.3 Greys Landfill

Greys Landfill is planned to be operated for the management of non-hazardous waste materials generated at Sparrows Point associated with the operation of the wastewater treatment plant, demolition activities and response actions until the remaining capacity has been utilized. Greys Landfill has an approved operating and closure plan that defines the closure elevation of the landfill which limits the remaining capacity.

Compliance obligations including semi-annual groundwater monitoring and reporting and operating practices will continue during this time period. Once final elevations are achieved at the landfill, the landfill will be closed in accordance with the approved closure plan requirements.

The requirements for post-closure care include the following obligations: 1) semi-annual groundwater monitoring, analysis and reporting, 2) semi-annual landfill inspection and reporting, and 3) landfill surface and closure cap maintenance. The post-closure care period has been estimated at ten years.

Coke Point Area

EnviroAnalytics Group

0 300 600 1,200 1,800 2,400 Feet

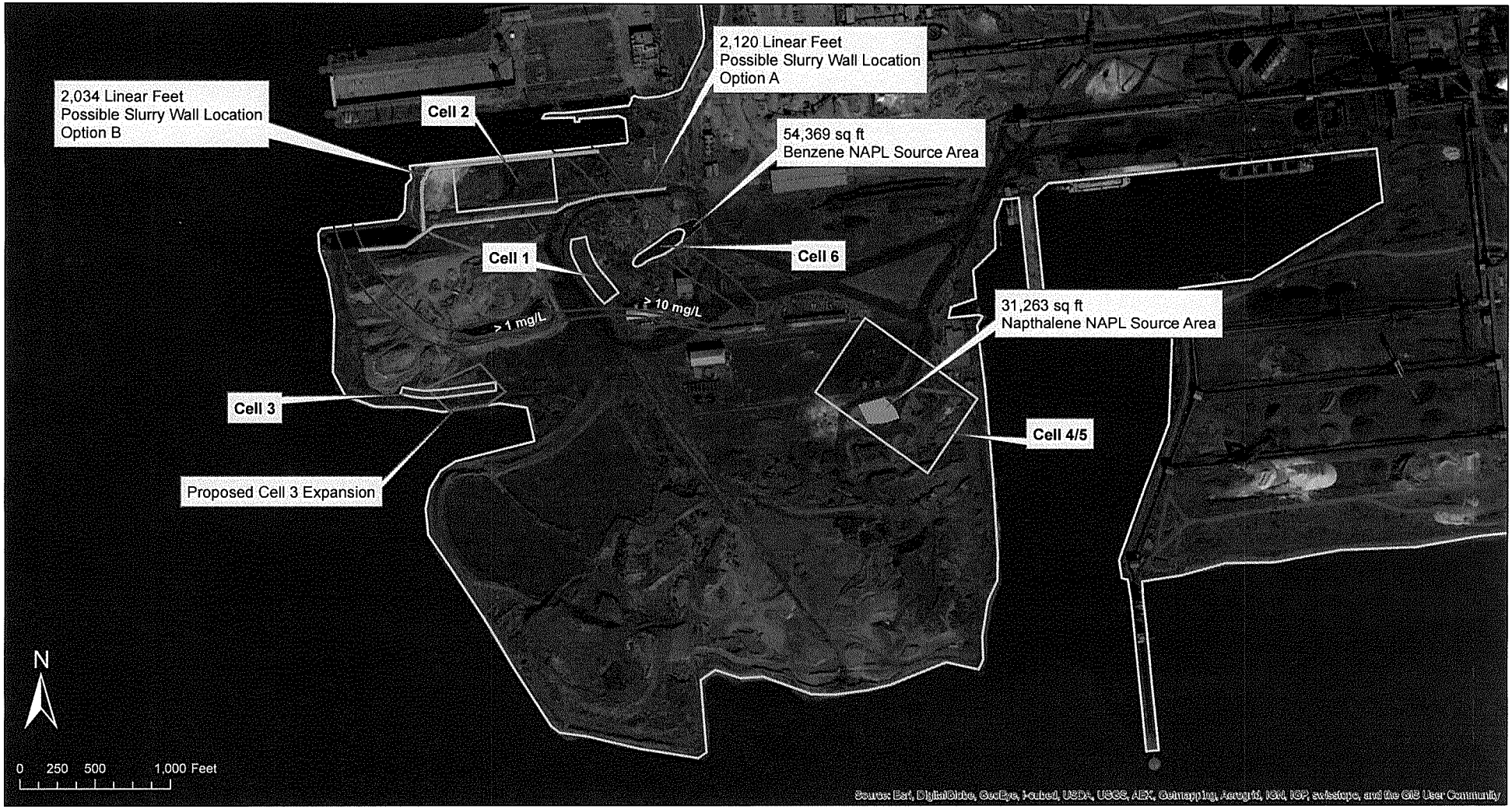
1 inch = 500 feet

Legend

- COA IM Cells
- Possible Cell 3 Expansion
- Possible Slurry Wall
- Property Boundary

Figure 1

Former Coke Oven Area Remedial Plan - Intermediate Groundwater Zone

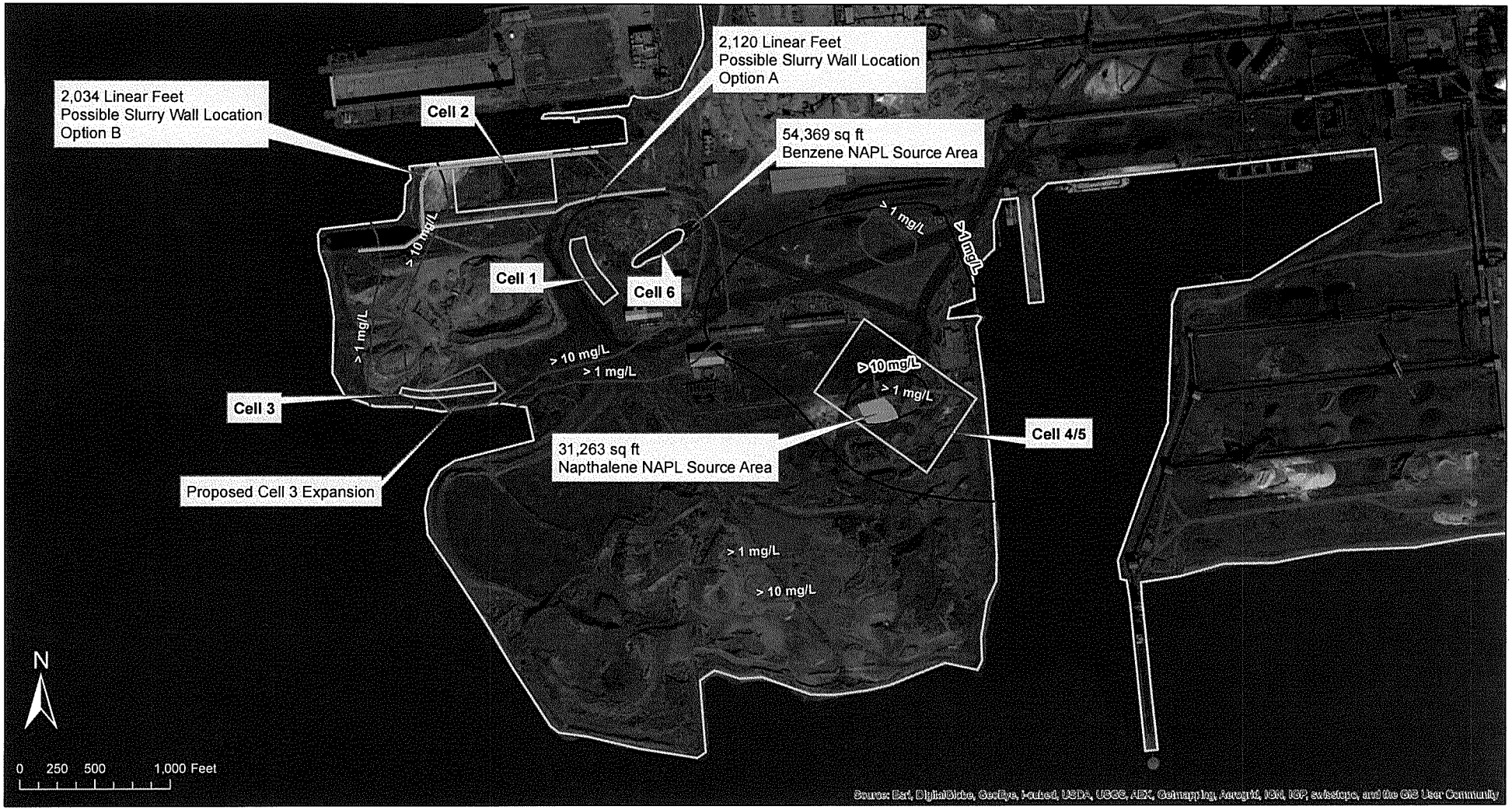


EnviroAnalytics Group

Legend

- COA IM Cells
- Possible Slurry Wall
- Proposed Cell 3 Expansion
- Napthalene NAPL Area
- Benzene NAPL Area
- Benzene Iso Concentration Intermediate Zone (mg/L)

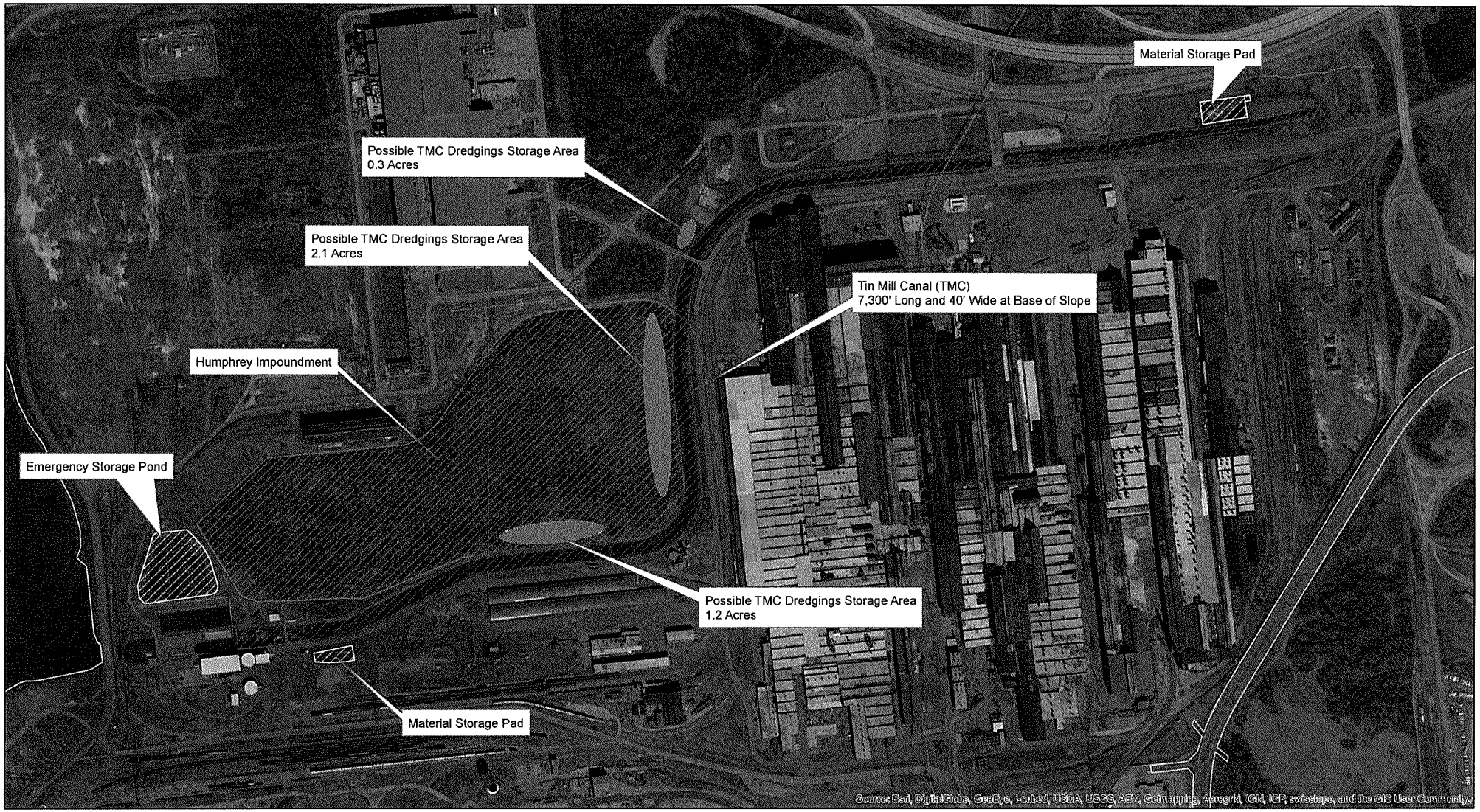
Former Coke Oven Area Remedial Plan - Shallow Groundwater Zone



EnviroAnalytics Group

Legend

- COA IM Cells
- Possible Slurry Wall
- Proposed Cell 3 Expansion
- Benzene NAPL Area
- Napthalene NAPL Area
- Benzene Iso Concentration Shallow Zone (mg/L)
- Naphthalene Iso Concentration Shallow (mg/L)



Tin Mill Canal/Finishing Mills and Humphrey Impoundment Areas

EnviroAnalytics Group

0 300 600 1,200 1,800 2,400 Feet

1 inch = 500 feet

Legend

- Tin Mill Canal
- Humphrey Impoundment
- Possible TMC Dredgings Storage Area
- Possible Material Storage Areas
- HCWWTP
- Property Boundary

Figure 2

Greys Landfill Area

0 240 480 960 1,440 1,920 Feet

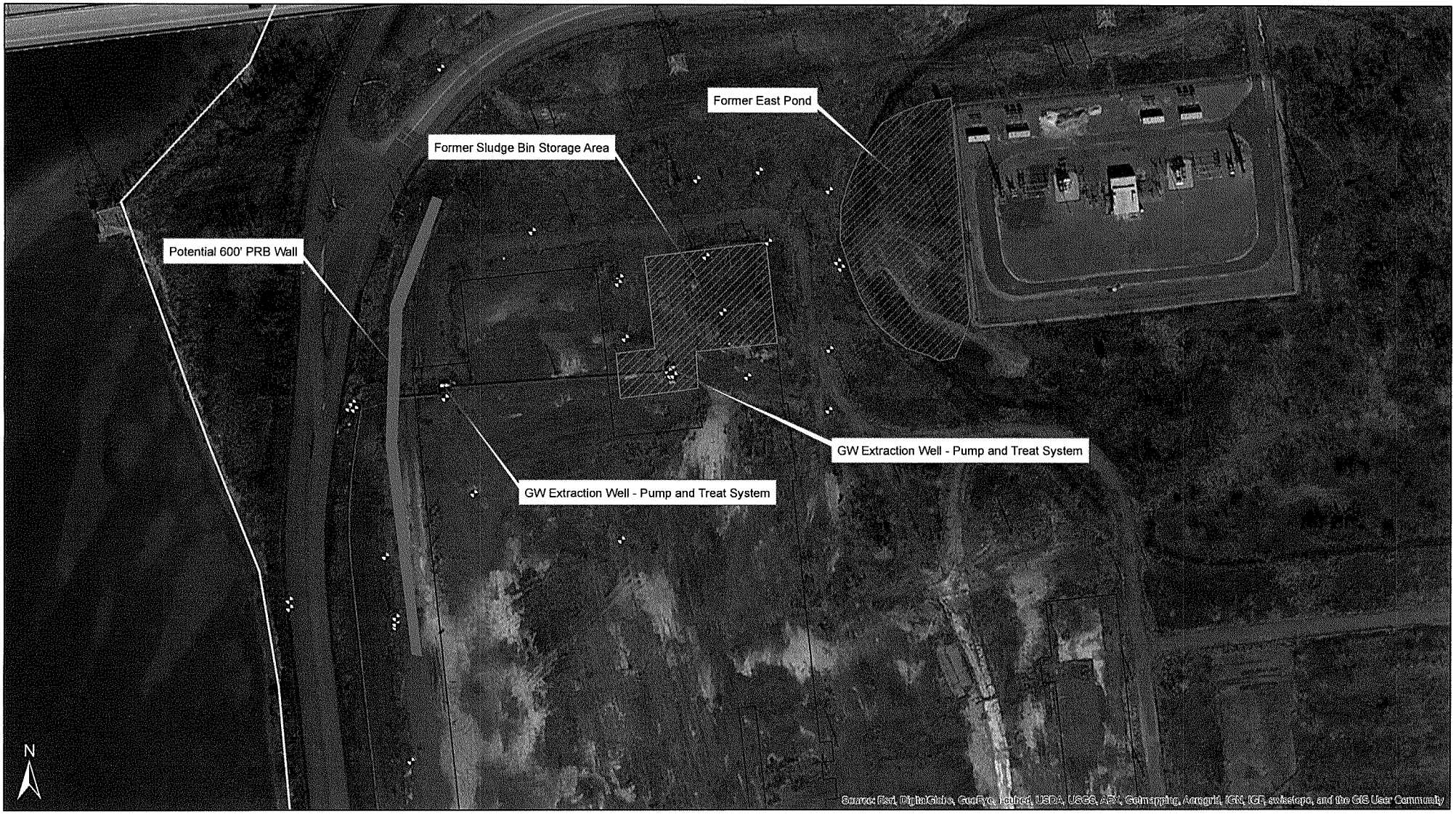
1 inch = 400 feet

Legend

- County Lands 1A
- Landfill Boundary
- Property Boundary

EnviroAnalytics Group

Figure 3



Rod and Wire Mill Area

0 50 100 200 300 400 Feet

1 inch = 115 feet

Legend

- RWM Monitoring Wells
- Former Sludge Bin Storage Area
- Former Building Footprint
- Former East Pond
- PRB Wall
- Property Boundary

EnviroAnalytics Group

Figure 4

Site Conceptual Cleanup Plan Areas

Legend

- Special Study Areas
- Contemplated State Administrative Order Areas
- Property Boundary

0 625 1,250 2,500 3,750 5,000 Feet

1 inch = 1,500 feet

EnviroAnalytics Group

Figure 5

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
1	Tin Mill Canal	SD	Further Action	Consent Decree "Special Study Area"	Tin Mill Canal/Finishing Mills
2	TMC Discharge Pipes	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
3	TMC Oil Skimming Devices	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
4	TMC Dredging Containment Areas	SD	Further Action	Undifferentiated with SWMU 6, include in SWMU 1 Evaluation	Humphrey Impoundment
5	TMC Waste Oil Storage Tanks	SD	Further Action	Include in SWMU 1 Investigation	Tin Mill Canal/Finishing Mills
6	TMC Impoundments	SD	Further Action	Undifferentiated with SWMU 4, include in SWMU 1 Evaluation	Humphrey Impoundment
7	Recent TMC Embankment Dredgings	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
8	TMC Brill Skimmer Pits	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
9	Former TMC Oil Collection Dumpster	SD	Further Action	Include in SWMU I Evaluation	Tin Mill Canal/Finishing Mills
10	HCWWTP Settling Basins	TP	No Further Action	Not observed to be releasing in RFA Report	----
11	HCWWTP Thickeners	TP	No Further Action	Not observed to be releasing in RFA Report	----
12	HCWWTP Aerators	TP	No Further Action	Not observed to be releasing in RFA Report	----
13	HCWWTP Wastewater Chemical Treating Buildings	TP	No Further Action	Not observed to be releasing in RFA Report	----
14	HCWWTP Spent Pickle Liquor (SPL) Discharge Point	AI	No Further Action	Part of treatment process, discharge is beneficially reused	----
15	HCWWTP Centrifuges	TP	No Further Action	Not observed to be releasing in RFA Report	----
16	HCWWTP Sludge Collection Box	TP	No Further Action	Not observed to be releasing in RFA Report	----
17	HCWWTP Old Alum Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
18	Chrome Recovery Reduction Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
19	Chrome Recovery Neutralization Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
20	Chrome Recovery Floc Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
21	Chrome Recovery Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	----
22	Chrome Recovery Sand Filters/Clarifier	TP	No Further Action	Not observed to be releasing in RFA Report	----
23	Chrome Recovery Rotary Filter Press	TP	No Further Action	Not observed to be releasing in RFA Report	----
24	Chrome Recovery Sludge Box	TP	No Further Action	Not observed to be releasing in RFA Report	----
25	Chrome Recovery Piping	TP	No Further Action	Not observed to be releasing in RFA Report	----
26	Chrome Recovery Filtrate Sump Filtrate Sump	SD	No Further Action	Non-releasing unit, wastes managed within closed treatment system	----
27	Rod Mill Remediation Area	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
28	Northwest Pond	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
29	East Pond	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
30	Rod Mill Equalization Tanks	SD	Continued Operation of IM System	IM groundwater remediation	Rod and Wire Mill Area
31	Cadmium Treatment Reactor A Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
32	Cadmium Treatment Treatment Alkalization Tank	TP	No Further Action	Not observed to be releasing in RFA Report	----
33	Cadmium Treatment Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	----
34	Cadmium Treatment Sand Filter	TP	No Further Action	Not observed to be releasing in RFA Report	----
35	Cadmium Treatment Piping	TP	No Further Action	Not observed to be releasing in RFA Report	----
36	Cadmium Treatment Filter Press	TP	No Further Action	Not observed to be releasing in RFA Report	----
37	Cadmium Treatment Sludge Collection Box	TP	No Further Action	Not observed to be releasing in RFA Report	----
38	Cadmium Treatment Trenches	SD	No Further Action	Manages groundwater treatment process overflow, re-enters system	----
39	Rod Mill Scale Pits	NH	No Further Action	No known releases, managed non-hazardous waste	----
40	Rod Mill Cleaning House Containment	NR	No Further Action	Not observed to be releasing in RFA Report	----
41	Rod Mill Former Waste TCE Storage	NR	No Further Action	Not observed to be releasing in RFA Report	----
42	Rod Mill Former Waste Oil Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	----
43	Rod Mill Chloroethane Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	----
44	Rod Mill Cooling Tower	NH	No Further Action	No known releases, managed non-hazardous waste	----
45	Rod Mill Trenches/Sumps	SD	Further Action	Potential for environmental release	Rod & Wire Mill
46	Pipe Mill Various 55-gallon Drums	I	No Further Action	Not observed to be releasing in RFA Report	----
47	Pipe Mill Oil/Water Separator	NR	No Further Action	Not observed to be releasing in RFA Report	----

Table 1
Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
48	Pipe Mill Former Zinc Ammonium Chloride Sludge Storage Area	SD	No Further Action	Inactive unit, one release with subsequent soil remediation	—
49	Pipe Mill Trenches/Sumps	SD	Further Action	Focused closure-oriented project	Rod & Wire Mill
50	Billet Prep Waste Oil Storage Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
51	Billet Prep Rinsewater Collection Tanks	I	No Further Action	Not observed to be releasing in RFA Report	—
52	Billet Prep Baghouse Collectors	NR	No Further Action	Not observed to be releasing in RFA Report	—
53	Billet Prep Trenches and Blind Sumps	SD	No Further Action	Managed non-hazardous material	—
54	Coating Lines Blind Sumps	SD	Further Action	Include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
55	Cold Sheet Mill Quencher	I	No Further Action	Not observed to be releasing in RFA Report	—
56	Cold Sheet Mill Scrubber	I	No Further Action	Not observed to be releasing in RFA Report	—
57	Cold Sheet Mill Wet Well	I	No Further Action	Not observed to be releasing in RFA Report	—
58	Cold Sheet Mill Piping	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
59	Tandem Mill Trench System	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
60	Cold Sheet Mill Empty Drum Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
61	Cold Sheet Mill Waste Oil Staging Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
62	Hot Strip Mill Basins	SD	Further Action	Condition of basins	Hot Strip Mill Area
63	Hot Strip Mill Waste Oil Tank	SD	Further Action	Include in SWMU 62 evaluation	Hot Strip Mill Area
64	Hot Strip Mill Oil Skimmer System	SD	Further Action	Include in SWMU 62 evaluation	Hot Strip Mill Area
65	Hot Strip Mill Cooling Tower	NR	No Further Action	Not observed to be releasing in RFA Report	—
66	Hot Strip Mill Waste Oil Collection Point	NR	No Further Action	Not observed to be releasing in RFA Report	—
67	Hot Strip Mill Waste Oil Accumulation Area	I	No Further Action	Not observed to be releasing in RFA Report	—
68	Hot Strip Mill Pickling Area	I	No Further Action	Not observed to be releasing in RFA Report	—
69	Hot Strip Mill Satellite Accumulation Area	I	No Further Action	Not observed to be releasing in RFA Report	—
70	Hot Strip Mill Former SPL Tank Site	NR	No Further Action	Not observed to be releasing in RFA Report	—
71	PORI Oil/Water Separator	SD	Further Action	Include in SWMU 73 evaluation	Tin Mill Canal/Finishing Mills
72	PORI Holding Tank	SD	Further Action	Include in SWMU 73 evaluation	Tin Mill Canal/Finishing Mills
73	PORI Lagoon	SD	Further Action	Condition of lagoon	Tin Mill Canal/Finishing Mills
74	Green Pellet Plant Thickeners	NR	No Further Action	Not observed to be releasing in RFA Report	—
75	Scrubbers Open Hearth Furnace #4	NR	No Further Action	Not observed to be releasing in RFA Report	—
76	Caster Dust Baghouse Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
77	Desulfurizer Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
78	Desulfurizer Collection Dumpsters	NR	No Further Action	Not observed to be releasing in RFA Report	—
79	Skimmer Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
80	Skimmer Baghouse Collection Dumpsters	NR	No Further Action	Not observed to be releasing in RFA Report	—
81	Former Open Hearth #3 Site	NR	No Further Action	Not observed to be releasing in RFA Report	—
82	Former Open Hearth #1 Site	NR	No Further Action	Not observed to be releasing in RFA Report	—
83	Caster Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
84	Tin Mill Trenches/Sumps	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
85	Tin Mill Abatement System	NR	No Further Action	Not observed to be releasing in RFA Report	—
86	Tin Mill Sump (Acid Monitoring)	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
87	Tin Mill Waste Oil Satellite Accumulation Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
88	Halogen Lines Trenches/Sumps	SD	Further Action	Include in SWMU 1 Evaluation	Tin Mill Canal/Finishing Mills
89	Halogen Lines Oil Skimmer	NR	No Further Action	Not observed to be releasing in RFA Report	—
90	Halogen Lines Waste Pickle Liquor Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
91	Halogen Lines Waste Plating Solution Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
92	Rolling Plate Mill Scale Pit	NH	No Further Action	No known releases, managed non-hazardous waste	—
93	Greys Landfill	SD	Further Action	Consent Decree "Special Study Area"	Greys Landfill Area
94	Greys Tar Decanter Cell	SD	Further Action	Unit contained within SWMU 93	Greys Landfill Area
95	Greys Trash Transfer Station	NR	No Further Action	Not observed to be releasing in RFA Report	—

Table 1
Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
96	Sinter Plant Thickener	NR	No Further Action	Not observed to be releasing in RFA Report	—
97	Sinter Plant High Density Sludge (HDS) Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
98	Sinter Plant Centrifuge Waste Pile	NR	No Further Action	Not observed to be releasing in RFA Report	—
99	Sinter Plant Drum Separator	NR	No Further Action	Not observed to be releasing in RFA Report	—
100	Sinter Plant Lime Grit Box	NR	No Further Action	Not observed to be releasing in RFA Report	—
101	Sinter Plant SPL Tanks	NR	No Further Action	Not observed to be releasing in RFA Report	—
102	Battery 12 Trash Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
103	Battery 11 and 12 Quench Pit	NR	No Further Action	Not observed to be releasing in RFA Report	—
104	Battery A Trash Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
105	Battery A Waste Oil Accumulation	SD	Further Action	Field observation of 1991 VSI	Coke Oven Area
106	Former 1-10 Batteries	NR	No Further Action	Not observed to be releasing in RFA Report	—
107	Coke Oven Gas Main	NR	No Further Action	Not observed to be releasing in RFA Report	—
108	Mechanical Shop Waste Oil Accumulation Area	SD	Further Action	Field observation of 1991 VSI	Coke Oven Area
109	AKJ Tar Decanter Batch Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
110	AKJ Tar Decanter Buckets	NR	No Further Action	Not observed to be releasing in RFA Report	—
111	Battery A Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
112	B CCP Tar Storage Tank Containment Areas	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
113	B CCP Underground Weak Ammonia Pipeline	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
114	B CCP Acid Containment Pad	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
115	B CCP Acid Tanks	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
116	B CCP Ammonia Clarifier Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
117	B CCP Lime Collection Bin	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
118	B CCP Ammonia Stills	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
119	B CCP Ammonia Saturator	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
120	B CCP Acid Surge Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
121	B CCP Wash Oil Coolers (Spiral)	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
122	B CCP Wash Oil Coolers (Shell & Tube)	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
123	B CCP Wash Oil Decanters	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
124	B CCP Wastewater Holding Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
125	B CCP Wash Oil Circulating Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
126	B CCP Scrubbers	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
127	B CCP Waste Oil Bin	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
128	B CCP API Light Oil Separators	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
129	B CCP Muck Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
130	B CCP Million Gallon Weak Ammonia Tank	CV (U)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
131	Bio-Oxidation Plant Wastewater Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
132	Bio-Oxidation Plant 1 MMG Wastewater Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
133	Bio-Oxidation Plant Depurators	NR	No Further Action	Not observed to be releasing in RFA Report	—
134	Bio-Oxidation Plant Aeration Basins	NR	No Further Action	Not observed to be releasing in RFA Report	—
135	Bio-Oxidation Plant Clarifiers	NR	No Further Action	Not observed to be releasing in RFA Report	—
136	A CCP Sulfuric Acid Tank Containment	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
137	A CCP Cyanide Stripper/Stack	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
138	A CCP Oil/Water Separator	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
139	A CCP Former Tar Decanters	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
140	A CCP Acid Saturator Tanks	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
141	A CCP Overflow Skimmer Box	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
142	A CCP Wash Oil Decanters	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
143	A CCP Scrubbers	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
144	A CCP Wastewater Holding Tank	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
145	A CCP Wash Oil Holding Tank	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
146	A CCP Sump	CV (M)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area

Table 1
Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
147	B/L Oil/Water Separator	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
148	B/L Tank Sludge Staging Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
149	B/L Tank Sludge Accumulation Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
150	B/L Litol Plant Catalyst Drum Station	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
151	B/L Waste Oil Accumulation Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
152	B/L Litol Drum Staging Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
153	B/L Benzene Truck Loading Area	CV (L)	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Area
154	H Furnace Dust Catcher	NR	No Further Action	Not observed to be releasing in RFA Report	—
155	H Furnace Wastewater Thickener	NR	No Further Action	Not observed to be releasing in RFA Report	—
156	J Furnace Precipitators	NR	No Further Action	Not observed to be releasing in RFA Report	—
157	J Furnace Gas Washer	NR	No Further Action	Not observed to be releasing in RFA Report	—
158	J Furnace Scrubber	NR	No Further Action	Not observed to be releasing in RFA Report	—
159	J Furnace Dust Catcher	NR	No Further Action	Not observed to be releasing in RFA Report	—
160	Former J Furnace Thickener	RS	No Further Action	Not observed to be releasing in RFA Report	—
161	A-G & K Former Furnaces	RS	No Further Action	Not observed to be releasing in RFA Report	—
162	L Furnace Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
163	L Furnace Thickener	TP	No Further Action	Not observed to be releasing in RFA Report	—
164	L Furnace Gas Scrubbers	TP	No Further Action	Not observed to be releasing in RFA Report	—
165	L Furnace Slag Piles	NH	No Further Action	No known releases, managed non-hazardous waste	—
166	RIW Pipeline	TP	No Further Action	Not observed to be releasing in RFA Report	—
167	RIW Sumps (2)	TP	No Further Action	Not observed to be releasing in RFA Report	—
168	RIW Holding Tank	TP	No Further Action	Not observed to be releasing in RFA Report	—
169	RIW Clarifying Tank	TP	No Further Action	Not observed to be releasing in RFA Report	—
170	Pilot Plant Slurry Mixing Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
171	Pilot Plant Holding Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
172	Pilot Plant Hydrocyclone	NR	No Further Action	Not observed to be releasing in RFA Report	—
173	BOF Scrubbers	NR	No Further Action	Not observed to be releasing in RFA Report	—
174	BOF Thickeners	NR	No Further Action	Not observed to be releasing in RFA Report	—
175	BOF Sand Collection Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
176	BOF Reclaimed Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
177	BOF Mixing Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
178	BOF Recycle Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
179	BOF Belt Press Station	NR	No Further Action	Not observed to be releasing in RFA Report	—
180	BOF Reladle Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	—
181	BOF Separator	NR	No Further Action	Not observed to be releasing in RFA Report	—
182	Former Tar Tanks at Fuel Station	NR	No Further Action	Not observed to be releasing in RFA Report	—
183	Ball Mill Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
184	Ball Mill Waste Oil/Tar Dumpster	NR	No Further Action	Not observed to be releasing in RFA Report	—
185	Tar Decanter Buggies	RS	No Further Action	Not observed to be releasing in RFA Report	—
186	Tar Storage Box Area	RS	No Further Action	Not observed to be releasing in RFA Report	—
187	Langenfelder Wastewater Treatment Tank	NR	No Further Action	Not observed to be releasing in RFA Report	—
188	Former Sulfur Recovery Plant	NR	No Further Action	Not observed to be releasing in RFA Report	—
189	Nail Mill Drum Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
190	Humphrey Impoundment Area	SD	Further Action	Consent Decree "Special Study Area"	Humphrey Impoundment
191	Coke Point Landfill	SD	Further Action	Consent Decree "Special Study Area"	Coke Point Landfill
192	Coke Oven Sweepings Pile	SD	Further Action	Contained within SWMU 191	Coke Point Landfill
193	Regulated Storage Area	NR	No Further Action	Not observed to be releasing in RFA Report	—
194	Waste Oil Stabilization/Packing Area	SD	Further Action	Field observation of 1991 VSI	Outlier (Primary Rolling Mills Area)
195	Former ERS Oily Wastewater Tank	AI	Further Action	Unknown impacts from previous activities	Outlier (Open Hearth Furnace Area)
196	Storm water Sewer System	SD	No Further Action	Storm water and industrial wastewater combined as NPDES permitted discharge	—
197	Mason's Garage Drums	NR	No Further Action	Not observed to be releasing in RFA Report	—
198	Spent Pickle Liquor Sump and Trench System	SD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Investigation	Tin Mill Canal/Finishing Mills
199	Bio-Oxidation Plant Oil/Water Separator	NR	No Further Action	Not observed to be releasing in RFA Report	—

Table 1

Sparrows Point Remediation Plan

SWMU/ AOC #	Description	Release Potential Defined by RFA	DCCR Recommended Action	Basis For DCCR Recommendation	Investigation Area (Special Study Area or Outlier Area)
200	Bio-Oxidation Plant Depurator Oil Storage Tanks	NR	No Further Action	Not observed to be releasing in RFA Report	----
201	Coke Battery Repair Shop Baghouse	NR	No Further Action	Not observed to be releasing in RFA Report	----
202	BOF Treatment Plant Pipeline	NR	No Further Action	Not observed to be releasing in RFA Report	----
203	Bio-Oxidation Plant Scum Collection Chamber	NR	No Further Action	Not observed to be releasing in RFA Report	----
A	Former 3/21/91 PCB Spill Area	AD	No Further Action	One time incident occurred indoors, low release potential	----
B	Former 1988 PCB Spill Area	AD	No Further Action	One time incident occurred indoors, low release potential	----
C	Former ERS PCB Spill Area	AD	No Further Action	One time incident, soil remediation met EPA guidelines for PCBs	----
D	Former PCB Spill Area (Sheet Mill)	AD	No Further Action	One time incident occurred indoors, and remediated, low release potential	----
E	6 PCB Transformers	AD	No Further Action	PCB oil replaced by mineral oil 7/27/95	----
F	Former Slab Cut Off Spill Area	AD	No Further Action	No current evidence of impact	----
G	Former Diesel Fuel Spill Area (Slab Haul Road)	AD	No Further Action	Soil remediation approved by MDE	----
H	Mason's Garage Area	AD	Further Action	UST closure/soil remediation completed but no confirmatory sampling	Outlier (Blast Furnace Area)
I	Former 1991 Acid Leak Area	AD	No Further Action	One time incident discharged to TMC	----
J	Acid Tanks	AD	Further Action	Condition of tanks, and known releases	Tin Mill Canal and Finishing Mill
K	Truck Dock # 9's Former Diesel Spill & Diesel Fuel UST Area	AD	No Further Action	One time incident, subsequent UST closure indicated no soil contamination	----
L	Benzene/Litol Process Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
M	A Coal Chemicals Plant Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
N	Bio-Oxidation Ferric Chloride Spill Site	AD	No Further Action	One time incident of non-hazardous constituent	----
O	Hydraulic Oil Storage Area	AD	No Further Action	Unit managed non-hazardous, water-based hydraulic oil	----
P	Former Naphthalene Plant Tank & Pit	AD	Further Action	Former unit with Consent Decree "Special Study Area"	Coke Oven Areas
Q	Former Diesel Fuel UST Area (Slab Haul Road)	AD	No Further Action	UST removal and closure approved by MDE	----
R	Underground Weak Ammonia Pipeline Spill Sites	AD	Further Action	History of spills, within Consent Decree "Special Study Area"	Coke Oven Areas
S	Former Chromic Acid Spill Area	AD	No Further Action	One time incident primarily indoors with limited discharge to the TMC	----
T	Former Diesel Fuel UST (Cold Sheet Mill)	AD	No Further Action	UST removed, confirmatory soil samples indicated no contamination	----
U	B CCP Process Area	AD	Further Action	Within Consent Decree "Special Study Area"	Coke Oven Areas
V	Former Spent Pickle Liquor Tanks	AD	No Further Action	Area same as SWMU 70 (non-releasing unit)	----
W	Spent Pickle Liquor Tanks	AD	Further Action	Discharges to TMC via SWMU 2, include in SWMU 1 Evaluation	Tin Mill Canal and Finishing Mill
X	Unknown Aboveground Tank	AD	Further Action	Focused closure-oriented project	Rod & Wire Mill
Y	Pipe Mill Selenium Testing Area	AD	No Further Action	Former operations located indoors, low release potential	----
Z	Pipe Mill Acid Tanks	AD	Further Action	Focused closure-oriented project	Rod & Wire Mill
AA	Pipe Mill Process Area	AI	No Further Action	----	----
AB	Rod and Wire Process Area	AI	No Further Action	----	----
------	County Lands	------	Further Action	Per DCCR, added as an AOC for evaluation	Greys Landfill Area (County Lands Parcel 1A)
------	Central Supply Fuel Storage Tanks	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	No. 10 Fuel Oil Tank	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	Hot Strip Mill Drum Handling Area	------	Further Action	Per DCCR, added as an AOC for evaluation	Outlier
------	Coke Oven Gas Drip Legs	------	Further Action	Per DCCR, added as an AOC for evaluation	Plant General
Notes:					
DCCR	Description of Current Conditions Report (January 1998)				

RCRA Facility Report (RFA) Code

SD = SWMU Description included in Section 4.0 of the RFA Report
AD= AOC Description included in Section 4.0 of the RFA Report in RFA Repon
I= Units located indoors and not observed to be releasing
TP = Treatment process units managing waste not observed to be releasing
NR = Units located outdoors but not observed to be releasing
NH = Unit managing non-hazardous waste
RS = Units that no longer exist and were removed from site
AI = Additional information needed to assess potential for release
CV = Units of concern, inability to assess which unit was releasing

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with	Other/Description	
TIN MILL CANAL/FINISHING MILLS AREA	1	Tin Mill Canal (TMC)	NO	HIGH					Prevent potential future direct exposure to contaminated sediments located within Tin Mill Canal; • Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater by wastewater treatment facility
	2	TMC Discharge Pipes	NO	LOW				Limited Impact to Site Condition	
	3	TMC Oil Skimming Devices	NO	LOW	XX				
	5	TMC Waste Oil Storage Tanks	NO	LOW	XX				
	7	Recent TMC Embankment Dredgings	NO	LOW			XX		
	8	TMC Brill Skimmer Pits	NO	LOW			XX	Pits replaced by tank units	
	9	Former TMC Oil Collection Dumpster	NO	LOW	XX				
	14	HCWWTP Spent Pickle Liquor (SPL) Discharge Point	NO	LOW				Beneficial reuse of SPL as wastewater treatment chemical, discharge point is to TMC	
	26	Chrome Recovery Filtrate Sump	NO	LOW		XX	XX		
	54	Coating Lines Blind Sumps	NO	LOW		XX	XX		
	58	Cold Sheet Mill Piping	NO	LOW		XX	XX		
	59	Tandem Mill Trench System	NO	LOW		XX	XX		
	71	PORI Oil / Water Separator	NO	LOW	XX				
	72	PORI Holding Tank	NO	LOW	XX				
	73	PORI Lagoon	NO	HIGH					Prevent potential future direct exposure to contaminated sediments ; • Mitigate impacts to stormwater conveyed by Tin Mill Canal and eliminate need for ongoing treatment of stormwater by wastewater treatment facility
	84	Tin Mill Trenches / Sumps	NO	LOW		XX	XX		
	86	Tin Mill Sump (Acid Area Monitoring)	NO	LOW		XX	XX		
	88	Halogen Lines Trenches / Sumps	NO	LOW		XX	XX		
	198	SPL Sump and Trench System	NO	LOW		XX	XX		
	- -	AOC B: Former 1988 PCB Spill Area	NO	LOW		XX	XX		
	- -	AOC D: Former PCB Spill Area (Sheet Mill)	NO	LOW		XX	XX		
	- -	AOC I: Former 1991 Acid Leak Area	NO	LOW		XX	XX		
	- -	AOC J: Acid Tanks	NO	LOW	XX				
	- -	AOC S: Former Chromic Acid Spill Area	NO	LOW		XX	XX		
	- -	AOC T: Former Diesel Fuel UST (Cold Sheet Mill)	NO	LOW			XX		
	- -	AOC W: Spent Pickle Liquor Tanks	NO	LOW	XX				

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Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
ROD AND WIRE AND PIPE MILLS AREA	27	Rod Mill Remediation Area	NO	HIGH					Prevent potential future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater; • Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure requiring pumping and treatment of groundwater
	28	Northwest Pond	NO	LOW				Investigated in 1986 - determined that no significant soil contamination was present in the former pond area.	
	29	East Pond	NO	HIGH					Prevent potential future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater; • Mitigate potential for non-point source discharge of groundwater above acceptable risk-based concentrations and eliminate need for ongoing interim measure requiring pumping and treatment of groundwater
	30	Rod Mill Equalization Tanks	NO	LOW	XX				
	38	Cadmium Treatment Trenches	NO	LOW	XX				
	39	Rod Mill Scale Pits	NO	LOW	XX				
	44	Rod Mill Cooling Tower	NO	LOW	XX				
	45	Rod Mill Trenches/Sumps	NO	LOW	XX	XX			
	48	Pipe Mill Zinc Ammonium Chloride Sludge Storage Area	NO	LOW	XX				
	49	Pipe Mill Trenches / Sump	NO	LOW	XX	XX			
	53	Billet Prep Trenches and Blind Sumps	NO	LOW	XX	XX			
	- -	AOC O: Hydraulic Oil Storage Area	NO	LOW	XX				
	- -	AOC X: Unknown Aboveground Tank	NO	LOW	XX				
	- -	AOC Y: Pipe Mill Selenium Testing Area	NO	LOW	XX				
	- -	AOC Z: Pipe Mill Acid Tanks	NO	LOW	XX				
HOT MILL AREA	62	Hot Strip Mill Basins	NO	LOW	XX	XX	XX		
	63	Hot Strip Mill Waste Oil Tank	NO	LOW	XX	XX			
	64	Hot Strip Mill Oil Skimming System	NO	LOW	XX				
	- -	AOC A: Former 3/21/91 PCB Spill Area	NO	LOW		XX	XX		
	- -	AOC K: Truck Dock #9's Former Diesel Spill & Diesel Fuel UST Area	NO	LOW			XX	Spill at UST area, remediation completed in 1990	
	- -	AOC V: Former Spent Pickle Liquor Tanks (2)	NO	LOW	XX			Identified as non-releasing unit, removed inapproximately 1986.	
	- -	Hot Strip Mill Drum Handling Area	NO	LOW					
GREYS LANDFILL AREA	93	Greys Landfill	NO	LOW				compliance groundwater monitoring program in place	
	94	Greys Tar Decanter Cell	NO	MEDIUM					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	- -	County Land Parcel 1A--contractor area fuel and oil tanks	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--tank near Greys Landfill	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--former drum storage area	NO	LOW	XX		XX		
	- -	County Land Parcel 1A--coal tar area	NO	MEDIUM					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
COKE POINT AREA	105	Battery A Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	108	Mechanical Shop Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	112	B CCP Tar Storage Tank Containment Areas	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	113	B CCP Underground Weak Ammonia Pipeline	NO	HIGH	XX		XX		Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	114	B CCP Acid Tank Containment Pad	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	115	B CCP Acid Tanks	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	116	B CCP Ammonia Clarifier Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	117	B CCP Lime Collection Bin	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	118	B CCP Ammonia Stills (2)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	119	B CCP Ammonia Saturator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	120	B CCP Acid Surge Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	121	B CCP Wash Oil Coolers (Spiral)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	122	B CCP Wash Oil Coolers (Shell and Tube)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	123	B CCP Wash Oil Decanters	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	124	B CCP Wastewater Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	125	B CCP Wash Oil Circulating Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	126	B CCP Scrubbers	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	127	B CCP Waste Oil Bin	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	128	B CCP API Light Oil Separators (2)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	129	B CCP Muck Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	130	B CCP Million Gallon Weak Ammonia Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	136	A CCP Sulfuric Acid Tank Containment	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	137	A CCP Cyanide Stripper / Stack	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	138	A CCP Oil / Water Separator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	139	A CCP Former Tar Decanters (3)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
COKE POINT AREA	140	A CCP Acid Saturator Tanks	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	141	A CCP Overflow Skimmer Box	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	142	A CCP Wash Oil Decanters	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	143	A CCP Scrubbers	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	144	A CCP Wastewater Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	145	A CCP Wash Oil Holding Tank	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	146	A CCP Sump	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	147	B / L Oil / Water Separator	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	148	B / L Tank Sludge Staging Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	149	B / L Tank Sludge Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	150	B / L Litol Plant Catalyst Drum Station	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	151	B / L Waste Oil Accumulation Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	152	B / L Litol Drum Staging Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	153	B / L Benzene Truck Loading Area	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	191	Coke Point Landfill	NO	MEDIUM					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	192	Coke Oven Sweepings Pile	NO	LOW				combine with Coke Point Landfill	
	--	AOC L: Benzene / Litol Process Area (SWMUs 147-153)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	--	AOC M: A Coal Chemical Plant Area (SWMUs 136-146)	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	--	AOC N: Bio-Oxidation Ferric Chloride Spill Site	NO	LOW	XX			Contaminated surface materials at spill site removed.	
	--	AOC P: Former Naphthalene Plant Tank & Pit	NO	HIGH	XX				Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	--	AOC R: Underground Weak Ammonia Pipeline Spill Sites (3)	NO	LOW	XX				
	--	AOC U: B Coal Chemicals Plant Process Area (SWMUs 112-130)	NO	HIGH					Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations

Table 2
Sparrows Point Remediation Plan

SITE AREAS	SWMU No.	SWMU, AOC, Non-RFA Area Name	Consent Decree Action Complete (yes/no)	Further Remediation Likely?(Low/Med/High)	Rationale for Remedial Action Trigger				Remedial Action Objectives
					Equipment Removed/To be Removed	Located Inside Building/Releases Not to Surface	Cleanup Work Complete/to be Completed with Demolition	Other/Description	
FURNACE AREAS	165	L Furnace Slag Piles	NO	LOW	XX			slag by-product materials	
	- -	AOC H: Mason's Garage Area	NO	LOW	XX		XX	UST remediation.	
	195	Former ERS Oily Wastewater Tank	NO	LOW				Tank removed late 1980's	
	- -	AOC C: Former ERS PCB Spill Area	NO	LOW	XX			Materials excavated and disposed off-site. Area backfilled with slag.	
HUMPHREY IMPOUNDMENT	190	Humphrey Impoundment	NO	MEDIUM					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	4	TMC Dredging Containment Areas	NO	HIGH					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
	6	TMC Impoundments	NO	HIGH					Prevent future direct exposure to contaminated surface soil; • Mitigate future leaching to groundwater;• Mitigate potential future non-point source discharge of groundwater above acceptable risk-based concentrations
PRIMARY ROLLING MILLS AREA	92	Plate Mill Scale Pit	NO	LOW			XX		
	194	Waste Oil Stabilization/Packing Area	NO	LOW	XX		XX		
	- -	AOC F: Former Slab Cut Off Spill Area	NO	LOW			XX	No oil-stained soil observed during April 1997 site inspection	
	- -	AOC G: Former Diesel Fuel Spill Area (Slab Haul Road)	NO	LOW			XX		
	- -	AOC Q: Former Diesel Fuel UST Area (Slab Haul Road)	NO	LOW	XX		XX		
GENERAL	- -	County Land Parcel 1B	NO	LOW				BERA work	
	- -	County Land Parcel 2	NO	LOW				BERA work	
	- -	County Land Parcel 3A	NO	LOW				land use	
	- -	County Land Parcel 3B	NO	LOW				land use	
	- -	Central Supply Fuel Storage Tanks	NO	LOW	XX				
	- -	No. 10 Fuel Oil Tank	NO	LOW	XX		XX	UST remediation complete	
	- -	Coke Oven Gas Drip Legs	NO	MEDIUM					
	196	Stormwater Sewer System	NO	LOW				NPDES coverage	
	- -	AOC E: 6 PCB Transformers	NO	LOW				Transformers replaced in 1995.	

CONFIDENTIAL COMMUNICATION - PART OF SETTLEMENT COMMUNICATIONS AND CONTAINING CONFIDENTIAL BUSINESS INFORMATION

Table 3
REMEDIATION PLAN OUTLINE

FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Coke Oven Area	1. Contaminants of Concern (COCs) include benzene, naphthalene, and NAPL affecting primarily: a. Subsurface fill and deeper soil b. Groundwater 2. NAPL plume impacting several acres 3. Dissolved benzene/ napthalene plumes impacting shallow and intermediate GW 4. Potential off-site migration of impacted groundwater	1. Remove NAPL/source areas to mitigate continuing migration to GW 2. Mitigate benzene and naphthalene migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations 3. Mitigate potential off-site migration of benzene	Achieve closure of this Special Study Area (SSA) consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP Sparrows Point LLC (HRP), Sparrows Point LLC (SPLLC) and the Regulator(s).	Site Wide Investigation (SWI)/Interim Measure (IM) Upgrade Work Plan	• Site Investigation Work • Groundwater fate and transport modeling • Risk Assessment • IM Upgrade Workplan	Additional data collection required to scope final remedy; contemplated that groundwater modeling and risk assessment may be part of CMS.	12 to 24 Months from Closing: IM Upgrade Work Plans/CMS Completed and Submitted for Regulatory Approval. 12 to 36 Months from Approval: Corrective Measures Implementation Complete. ~120 Months from CMI Completion: Semi-Annual groundwater monitoring.
				IM Upgrade Work	• In-situ source area treatment • Removal/treatment of Cell 6 source materials • In-situ barrier/flow-thru treatment Cell 2 • Operate pump and treat system Cell 2 temporary basis • Decommission Cells 1,3, and 6 and cell 2 (future) • Modify cells 4/5 to incorporate source area treatment	Treat source areas with physical removal of NAPL materials followed by in-situ treatment of benzene and naphthalene; install an in-situ barrier (slurry wall ~60 ft. deep) for portion of area near Cell 2 to minimize migration of impacted groundwater to shoreline and shipyard area. Slurry wall may also incorporate funnel and gate features.	
				Corrective Measure Study (CMS)	• Additional data collection Cell 4/5 • Risk assessment • Alternative analysis • Engineering plans	See above.	
				Corrective Measure Implementation (CMI)	• In-situ source treatment Cell 4/5 area • Semi-annual groundwater monitoring 10 years	See above.	
Humphrey Impoundment	1. COCs likely to include metals, organics, or oil & grease affecting: a. Surface Material b. Groundwater	1. Mitigate unacceptable future exposure to surface material 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations	Achieve closure of this SSA consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	CMS	• BERA Results • Remedial action to be integrated with future development • Institutional controls to limit direct contact exposure pathway	Final BERA submitted to agency in 2011 (requires agency approval); surgical hot spot removal (possibly as part of development); further investigation work may be needed for risk assessment or TMC dredge spoil containment areas; use modeling and risk-based approach through BERA and risk assessment to confirm no additional action required.	12 to 24 Months from Closing: CMS Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval: Corrective Measures Implementation Complete. ~60 Months from CMI Completion: Semi-Annual groundwater monitoring .
				CMI	• Institutional controls, fencing, etc. • Regrading, establishment and delineation of permanent wetlands • Groundwater Monitoring	Depending on risk assessment, may require additional GW monitoring.	
Former Rod and Wire/Pipe Mill	1. Contaminants of Concern (COCs) include elevated cadmium and zinc affecting: a. Surface soil b. Subsurface soil c. Groundwater 2. Groundwater plume affects on the order of 3 to 10 acres	1. Mitigate future exposure to surface soil 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations 4. Eliminate remedial GW discharge requiring treatment	Achieve closure of this area through the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	SWI/IM Upgrade Work Plan	• IM Workplan • Site Investigation Work • Groundwater flow modeling (incl. fate & transport) • Risk Assessment • IM engineering plan	Define extent of area to be treated through additional sampling; sample for COCs and treatability parameters (grain size, etc.); update GW flow modeling and risk assessment to assist in development of remedial objectives and corrective measure.	12 to 24 Months from Closing and Regulatory Approval: Revised IM Work Plan and Construction Completion. ~120 Months from Construction Completion: Completion of Semi-Annual groundwater and performance monitoring.
				IM Upgrade Work	• IM Workplan • In-situ source area treatment • Excavation/removal of surface soil materials • Clean soil cover 5 acres • Decommission pump and treat system	Source Area: In-situ stabilization (pozzolanic cement material) of impacted zones (estimated at an aggregate of 2 acres from the ground surface to a depth of approximately 20' to 30' below grade); decommission pump and treat system. Downgradient/Shoreline Area: Possibly install continuous permeable reactive barrier (PRB) or funnel & gate PRB system using BOF slag, ZVI material (possibly in a replaceable "cassette" format); continuing groundwater monitoring.	
				CMS	• Review of adequacy of IM as final corrective action	Same as above	
				CMI	• Semi-annual groundwater monitoring for 10 years	Same as above; expect additional GW monitoring to confirm final remedy effective.	

CONFIDENTIAL COMMUNICATION - PART OF SETTLEMENT COMMUNICATIONS AND CONTAINING CONFIDENTIAL BUSINESS INFORMATION

Table 3
REMEDIATION PLAN OUTLINE

FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Tin Mill Canal (TMC)/Finishing Mills	1. COCs include elevated metals, organics or oil & grease affecting: a. Canal sediment and banks b. Stormwater conveyed by canal 2. Affected area appears to include entire length and width of the canal	1. Mitigate future exposure to sediment and banks 2. Eliminate potential future discharges from process outfalls to canal 3. Mitigate COC impact to stormwater conveyed by canal 4. Eliminate discharge of stormwater requiring treatment by HCWWTP	Achieve closure of this SSA consistent with 1997 Consent Decree and/or the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s).	TMC Sediment Removal Work Plan	• Investigation Work • Engineering Plans	Additional data collection required to define area of sediments that require removal and to provide a waste characterization.	Timing somehwat dependent on ongoing demolition activities. Also timing may tie in with development activities. 12 to 24 Months from Closing: Investigative Work, Engineering Plans, CMS Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval and Completion of Nearby Demolition Activities: Sediment removal and channel stabilization complete.
				TMC Sediment Removal and Channel Stabilization	• Sediment Removal and Disposal • TMC stabilization with rip rap	Plan to remove and dispose of impacted sediments; assume approximately 50,000 - 60,000 cu yds. of material to be removed; assume approximately 75% non-hazardous and taken to Greys Landfill and approximately 25% hazardous and taken off-site for proper disposal; backfill will consist of rip rap from clean demo materials, slag aggregate, etc.	
				CMS	• Coordination with NPDES requirements, surface water discharge modeling	Conduct surfacewater modeling and risk assessment to demonstrate meet objectives at the point of compliance (outfall discharge point).	
				CMI	• Stormwater retention basin(s), possible constructed wetland treatment, gravity discharge to bypass HCWWTP (design dependent upon site development requirements)	Stormwater retention basin(s), or possibly constructed wetland treatment may be effective solutions (design dependent upon site development requirements).	
Greys Landfill Area (County Lands)	1. COCs include VOCs or SVOCs affecting: a. Surface soil b. Groundwater 2. Areas affected include Spare parts/ Contractor's Area; former County Lands; Small source of VOC impact	1. Mitigate future exposure to surface soil over a 5 to 10 acre area (to be further defined) 2. Mitigate future leaching to groundwater 3. Mitigate migration through groundwater to Point of Compliance (shoreline) and non-point source discharge of GW above acceptable risk-based concentrations	Achieve closure of this area through the mechanism outlined within the Agreement between HRP, SPLLC, and the Regulator(s). Possibly through the Maryland Department of Environment (MDE) Voluntary Cleanup Program (VCP) or similar process.	CMS	• Additional data collection • Risk assessment • Alternative analysis	Additional data collection required to define area of GW impacts.	12 to 24 Months from Closing: Investigative Work, Risk Assessment, Alternatives Analysis Completed and Submitted for Regulatory Approval. 12 to 24 Months from Approval: In-Situ Source Treatment and Cover Completed. ~60 Months from Construction Completion: Semi-Annual Groundwater Monitoring.
				CMI	• In-situ source treatment • Cover materials placed over approximately 10 acres • Groundwater monitoring	Apply 1 to 2 applications of in-situ treatment followed by groundwater monitoring activities; anticipate that some cover material may be placed over 5 to 10 acres to mitigate contact exposure; use modeling and risk assessment to demonstrate compliance.	
Greys Landfill Operation, Closure and Post Closure Care	1. Operating landfill that will require closure by placement of final cover and post closure care 2. Limited occurrence(s) of elevated metals, benzene or naphthalene affecting local GW	1. Closure at end of operating life 2. Mitigation of migration to groundwater	Certification of Closure from the MDE and Certification that Post Closure Care requirements have been met	Active landfill operation	Anticipate landfill will operate for approximately 5 years accepting non-hazardous remediation waste, HCWWTP sludge, groundwater monitoring	Plan to keep active until reach closure elevation; anticipate that approximately 300,000 - 400,000 cu yds. remain available.	12 to 24 Months from Acceptance of Final Load of Waste (or as otherwise specified in the permit): Final closure of landfill complete. 60 Months from Final Closure: Post-Closure Monitoring complete as specified in permit/Consent Decree.
				Final Closure	Per the approved engineering design, continuation of closure cap from 85' bench	Will close in accordance with approved Landfill Closure Plan.	
				Post Closure Care	A minimum of 5 years.	Estimated that Post Closure Care will last a minimum of 5 years.	

CONFIDENTIAL COMMUNICATION - PART OF SETTLEMENT COMMUNICATIONS AND CONTAINING CONFIDENTIAL BUSINESS INFORMATION

Table 3
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FORMER RG STEEL FACILITY
SPARROWS POINT, MARYLAND

April 4, 2014

Area of Concern	General Description of Impacts	Corrective Action/Remediation Objective Driver	Redevelopment Objective	Item or Task	Description of Activities to Complete	Technical Strategy For Closure	Expected Timeframe
Coke Point Landfill Closure and Post Closure Care	1. Non-operating landfill requiring closure by placement of final cover and post closure care 2. Limited occurrence(s) of elevated metals, benzene or naphthalene affecting local GW	1. Closure of this non-operating landfill 2. Potential mitigation to groundwater; transport to shoreline point of compliance	Certification of Closure from the MDE and Certification that Post Closure Care requirements have been met	Final Closure	• Conceptual design • Final engineering design • Closure cap installation	Due to location in close proximity to shoreline and high profile nature, expect that acceptance for additional use of this landfill will be extremely difficult to achieve; In process of proposing to reduce footprint of landfill to 20 acres for closure obligation; anticipate closure plan to look similar to Greys with no interim closures and a 3-layer cap on level areas and 1-layer cap on side slopes.	Expect to finalize a Closure Plan during 2015. 12 to 24 Months from Closing: Closure Plan Submitted for Regulatory Approval. 12 to 24 Months from Approval: Closure Construction Complete. 120 Months from Closure Completion: Groundwater monitoring per approved Closure Plan complete.
				Post Closure Care	A minimum of 5 years.	Estimated that Post Closure Care will last a minimum of 5 years.	
Site Wide Work (outside of SSAs)	1. Unknown; Phase I ESA in process; RECs will be evaluated to assess whether further assessment is warranted. 2. COCs anticipated to be consistent with site-wide conditions and include hazardous substances and petroleum products.	Anticipate that drivers will be consistent with the process set forth by the MDE VCP.	Achieve closure of select areas parcel by parcel through the mechanism outlined within the Agreement between HRP, SPCCL, and the Regulator(s). Possibly through the MDE VCP or similar process.	Phase I ESA	• Complete Phase I ESA; identify RECs that fall outside of SSAs • Evaluate whether additional assessment is warranted	Risk-based remediation and closure approach anticipated to include institutional controls or engineered barriers; dependent on results of the Phase I ESA and Phase II ESA (if needed).	Phase I ESA to be completed as part of due diligence activities prior to Closing. Select Phase II ESA activities may be completed prior to Closing. 12 to 24 Months from Closing: Complete additional investigation as needed and evaluate need for remediation.
				Phase II ESA	• Perform Phase II ESA work in areas selected for further assessment • Evaluate human health risk pathways focused on worker exposure/future development • Develop plan to mitigate identified exposures • Evaluate risk-based closures through use of institutional controls and engineered barriers		
				Remediation Implementation (if needed)	• Implement remediation in areas unable to be closed through risk-based options • Prepare appropriate reports documenting compliance with remediation objectives		

EXHIBIT C
FORM OF TRUST AGREEMENT

TRUST AGREEMENT

Sparrows Point Site

Dated: _____ __, _____

This Trust Agreement (this "Agreement") is entered into as of [date] by and between Sparrows Point Terminal, LLC, a Delaware limited liability company (the "Grantor"), and UMB Bank, n.a., as Trustee, a national bank association organized and existing under the laws of the United States of America (the "Trustee").

Whereas, the Maryland Department of the Environment ("MDE"), an agency of the State of Maryland, and the Grantor have entered into an Administrative Consent Order dated _____ (hereinafter the "ACO");

Whereas, the ACO provides that the Grantor shall provide assurance that funds will be available as and when needed for performance of Work to be Performed required by the ACO;

Whereas, the Grantor has elected to establish a trust to provide a part of such financial assurance for the ACO identified for the facilities identified herein; and

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee has agreed to act as trustee hereunder.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Beneficiary" shall have the meaning assigned thereto in Section 3 of this Agreement.

(b) The term "Business Day" means any day, other than a Saturday or a Sunday, that banks are open for business in Baltimore, Maryland and [insert home office of trustee].

(c) The term "Fund" shall have the meaning assigned thereto in Section 3 of this Agreement.

(d) The term "Grantor" shall have the meaning assigned thereto in the first paragraph of this Agreement.

(e) The term "Grantor's Representative" shall mean the contractor selected by Grantor to fulfill Grantor's obligations under the ACO, which shall initially be Sparrows Point LLC.

(g) The term "Site" shall have the meaning assigned thereto in Section 2 of this Agreement.

(h) The term "Trust" shall have the meaning assigned thereto in Section 3 of this Agreement.

(i) The term "Trustee" shall mean the trustee identified in the first paragraph of this Agreement, along with any successor trustee appointed pursuant to the terms of this Agreement.

(j) The term "Work" or "work" shall have the meaning assigned thereto in the ACO.

Section 2. Identification of Cost Estimates. This Agreement pertains to the cost estimates identified on attached Schedule A, for which the funds on deposit under this Agreement form a part of the financial assurance therefore.

Section 3. Establishment of Trust Fund. The Grantor and the Trustee hereby establish a trust (the "Trust"), for the benefit of MDE (the "Beneficiary"), to assure that funds are available to pay for performance of the Work in the event that Grantor fails to conduct or complete the Work required by, and in accordance with the terms of, the ACO. The Grantor and the Trustee intend that no third party shall have access to the Trust except as expressly provided herein. The Trust is established initially as consisting of funds in the amount of Forty Three Million U.S. Dollars ($43,000,000.00). Such funds, along with any other monies and/or other property as may hereafter be deposited into the Trust, and together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement, are referred to herein collectively as the "Fund." The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor owed to the United States.

Section 4. Payment for Work Required Under the ACO. The Trustee shall make payments from the Fund in accordance with the following procedures. The Trustee shall reimburse the Grantor for the costs incurred for the Work within 30 days of receipt of an invoice from Grantor setting forth (1) a description of the Work that has been performed, (2) the amount due, and (3) the identity of the payee(s).

Section 5. Funding Shortfall.

As part of the Six Month Report (as defined in the ACO), SPT shall evaluate whether the Fund should be increased because of the occurrence of a Funding Shortfall (as that term is defined in the ACO). In the event of a Funding Shortfall, Grantor shall, within 30 days of notifying MDE and Trustee of the Funding Shortfall, deposit monies and/or other property into the Trust in an amount required under the ACO. Trustee shall provide notice to MDE and Grantor of any deposits by Grantor. Such Funds shall be held by the Trustee and managed in accordance with this Trust.

Section 6. Work Takeover.

If, at any time during the term of this Agreement, MDE elects to take over the Work pursuant to the terms of the ACO, and intends to direct payment of monies from the Fund to pay for performance of Work (a "Work Takeover"), MDE shall notify the Trustee in writing of MDE's commencement of such Work Takeover. Upon receiving such written notice from MDE, the disbursement procedures set forth in Section 4 above shall immediately be suspended, and the Trustee shall thereafter ***make payments from the Fund <u>only</u> to such person or persons as the MDE may direct in writing from time to time for the sole purpose of providing payment for performance of Work required by the ACO. Further, after receiving such written notice from MDE, the Trustee shall not make any disbursements from the Fund at the request of the Grantor, including Grantor's Representative and/or contractors, or of any other person except at the express written direction of MDE. If MDE ceases such a Work Takeover in accordance with the terms of the ACO, MDE shall so notify the Trustee in writing and, upon the Trustee's receipt of such notice, the disbursement procedures specified in Sections 4 above shall be reinstated.***

While this Agreement is in effect, disbursements from the Fund are governed exclusively by the express terms of this Agreement.

Section 7. Trust Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with the direction of Grantor, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the Beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held by the Trustee with monies comprising the Fund;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent such deposits are insured by an agency of the U.S. federal or any U.S. state government;

(c) The Trustee is authorized to invest the Fund in money market mutual funds that are registered with the federal Securities and Exchange Commission (SEC), meeting the requirements of Rule 2a-7 under the Investment Company Act of 1940 and that are rated in either of the two highest categories by a nationally recognized rating service; and

(d) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

In the event the Grantor does not provide written instructions to the Trustee the Funds shall be invested in items in 5(c) herein.

Section 8. Commingling and Investment. The Trustee is expressly authorized to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions hereof and thereof, to be commingled with the assets of other trusts participating therein.

Section 9. Express Powers of Trustee. Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(b) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the U.S. federal government or any U.S. state government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund; and

(c) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the U.S. federal government.

(d) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 10. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund shall be paid from the Fund. All other expenses and charges incurred by the Trustee in connection with the administration of the Fund and this Trust, including fees associated with Grantor's preparation and submission of Six Month Reports, fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor shall be paid by the Grantor.

Section 11. Annual Valuation. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Beneficiary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee

within 90 days after the statement has been furnished to the Grantor and the MDE project coordinator shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement. The annual valuation shall include an accounting of any fees or expenses levied against the Fund. The Trustee shall also provide such information concerning the Fund and this Trust as MDE may request from time to time.

Section 12. Advice of Counsel. The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder; provided, however, that any counsel retained by the Trustee for such purposes may not, during the period of its represenation of the Trustee, serve as counsel to the Grantor. The Trustee shall incur no liability and shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 13. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services from amounts on deposit in the Fund as agreed upon in writing with the Grantor and as notified in writing to the Beneficiary.

Section 14. Trustee and Successor Trustee. The Trustee and any replacement Trustee must be approved in writing by MDE and must not be affliliated with the Grantor. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee approved in writing by MDE and this successor accepts such appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to MDE or a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the Fund and the Trust in a writing sent to the Grantor, the Beneficiary, and the present Trustee by certified mail no less than 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 10.

Section 15. Instructions to the Trustee. All instructions to the Trustee shall be in writing, signed by such persons as are empowered to act on behalf of the entity giving such instructions. The Trustee shall be fully protected in acting without inquiry on such written instructions given in accordance with the terms of this Agreement. The Trustee shall have no duty to act in the absence of such written instructions, except as expressly provided for herein.

Section 16. Notice of Nonpayment. The Trustee shall notify the Grantor and the appropriate MDE project coordinator, by certified mail within 10 days following the expiration of the 30-day period after the establishment of the Trust or the requirement of funding a Funding Shortfall, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a

notice of nonpayment.

Section 17. Amendment of Agreement. This Agreement may be amended only by an instrument in writing executed by the Grantor, the Trustee, and MDE, or by the Trustee and MDE if the Grantor ceases to exist.

Section ***18. Irrevocability and Termination.*** Subject to the right of the parties to amend this Agreement as provided in Section 17, this Trust shall be irrevocable and shall continue until terminated upon the written direction of MDE to terminate, consistent with the terms of the ACO. Upon termination of the Trust, all remaining trust property (if any), less final trust administration expenses, shall be delivered to the Grantor.

Section 19. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the MDE issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct made by the Trustee in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 20. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Maryland.

Section 21. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Section 22. Notices. All notices and other communications given under this agreement shall be in writing and shall be addressed to the parties as follows or to such other address as the parties shall by written notice designate:

(a) If to the Grantor, to [_____].

(b) If to the Trustee, to [_____].

(c) If to MDE, _____.

Section 23. Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. Copies, telecopies, fascimiles, electronic files, and other reproductions of original executed documents shall be deemed to be authentic and valid counterparts of such original documents for all purposes, including the filing of any claim, action, or suit in the appropriate court of law. The parties hereto agree that the transaction described herein may be conducted and related documents may be stored by electronic means.

Section 24. ***Earnings Allocation; Tax Matters; Patriot Act Compliance.*** The parties hereto agree that, for tax reporting purposes, all interest or other income, if any, attributable to the Funds or any other amount held by the Trustee pursuant to this Agreement shall be allocable to Grantor. The Grantor and to provide the Trustee completed Forms W-9 (or Forms W-8, in the case of non-U.S. persons) and other forms and documents that the Trustee may reasonably request (collectively, "Tax Reporting Documentation") at the time of execution of this Agreement and any information reasonably requested by the Trustee to comply with the USA Patriot Act of 2001, as amended from time to time. The parties hereto understand that if such Tax Reporting Documentation is not so certified to the Trustee, the Trustee may be required by the Internal Revenue Code, as it may be amended from time to time, to withhold a portion of any interest or other income earned on the investment of monies or other property held by the Trustee pursuant to this Agreement.

[Remainder of page left blank intentionally.]

In Witness Whereof, the parties hereto have caused this Agreement to be executed by their respective officers duly authorized and attested as of the date first above written:

GRANTOR

SPARROWS POINT TERMINAL, LLC

By:_____
Name:_____
Its:_____

State of _____
County of _____

On this [date], before me personally came [name of Grantor official], to me known, who, being by me duly sworn, did depose and say that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; and that she/he signed her/his name thereto.

[Signature of Notary Public]

TRUSTEE

UMB Bank, N.A.

By:_____
Its:_____

State of _____
County of _____

On this [date], before me personally came [name of Trustee official], to me known, who, being by me duly sworn, did depose and say that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; and that she/he signed her/his name thereto.

[Signature of Notary Public]

EXHIBIT D
FORM OF LETTER OF CREDIT

[proposed form of LC based upon statutory form and prior forms. Subject to revision based upon issuing Bank's standard LC language]

Irrevocable Standby Letter of Credit

Date of issue:

BENEFICIARY:
Maryland Department of the Environment
1800 Washington Blvd., Suite 6048
Baltimore, MD 21230

APPLICANT:
Sparrows Point Terminal, LLC
(address)

We hereby establish our Irrevocable Standby Letter of Credit No. ___ in your favor, at the request and for the account of Sparrows Point Terminal, LLC up to the aggregate amount of Five Million and NO/100 U.S. dollars $5,000,000, available upon presentation to our offices at [bank name] [address] of:

(1) your sight draft, drawn on us at our office specified in paragraph one bearing reference to this Letter of Credit No. ___, and [note, if issuing bank does not have an office in MD, drawing by fax, email or courier shall be permitted]

(2) a dated certificate purportedly signed by an authorized representative of the beneficiary reading as follows: "I, the undersigned, a duly authorized representative of the Maryland Department of the Environment hereby certify that a "Work Takeover" has occurred pursuant to the terms of that certain Administrative Consent Order entered into between Sparrows Point Terminal, LLC and the Maryland Department of the Environment dated _____, 2014 and that the amount of the draft is payable to the Maryland Department of the Environment thereunder."

Partial drawings and multiple drawings may be presented under this Letter of Credit, and each such drawing honored by us hereunder shall reduce the maximum available amount by the amount of such drawing.

This original [copy may be permitted] Letter of Credit, and original amendments if any, must accompany any drawing. In the event of a partial drawing, we will endorse the drawing amount and return the original Letter of Credit to the beneficiary unless it is fully utilized.

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless, at least ninety (90) days before the then current expiration date, we notify both Beneficiary and Sparrows Point Terminal, LLC at the above address by certified mail that we have decided not to extend this Letter of Credit beyond the then current expiration date. In the event you are so notified, any unused portion of the Credit shall be available for demand up to the then current expiration date upon presentation of your sight draft(s) accompanied by your statement that "[bank] has notified beneficiary that the Letter of Credit will not be extended and Sparrows Point Terminal, LLC has failed to deliver a replacement Letter of Credit in form and substance satisfactory to

Maryland Department of the Environment."

This Letter of Credit may be cancelled prior to the expiration date, or any automatically extended expiration date, upon our receipt of written consent to cancel from Beneficiary when accompanied by the original of this Letter of Credit.

We hereby undertake to promptly honor your sight draft(s) drawn on us indicating our Letter of Credit no. _____, for all or any part of this Credit if presented at our office specified above on or before the expiration date or any automatically extended expiration date as herein provided.

This Credit is subject to Uniform Customs and Practice for Documentary Credits 2007 Revision, Publication 600 and the Maryland Uniform Commercial Code. In case of a conflict between the Maryland Uniform Commercial Code and the Uniform Customs and Practice for Documentary Credits, the Maryland Uniform Commercial Code shall control.

[Signature(s) and title(s) of official(s) of issuing institution] [Date]

EXHIBIT E
ENVIRONMENTAL CONSULTANT CERTIFICATION

CERTIFICATION BY ENVIRONMENTAL PROFESSIONAL

I declare and affirm that, to the best of my professional knowledge and belief, the following:

1. I/we meet the definition of Environmental Professional as defined in 40 C.F.R. § 312.20;

2. I/we have the specific qualifications based on education, training, and experience to assess the nature, history, and cleanup goals of the subject property, and the estimated costs to complete the Work as set forth in the Administrative Consent Order for the subject property. My/Our qualifications are provided in Attachment A to this certification.

3. I/we have developed and performed this Six Month Report and Budget as those are defined in the Administrative Consent Order in conformance with the standards and practices of my/our profession and Md. Code Ann., Environment Article § 7-501 *et seq.*, 42 U.S.C. § 6901 *et seq.*

4. I/We am/are (a) independent and not a representative, employee, or affiliate of Sparrows Point Terminal LLC, Hilco Global, Environmental Liability Transfer, Inc, Sparrows Point LLC, or any affiliated entity, or any person who has an ownership interest in the subject property; and (b) I/We have not been unduly influenced by any person with regard to the preparation of the Six Month Report or Budget or the contents thereof;

5. I/We acknowledge and agree that intentionally falsifying or concealing any material fact with regard to the subject matter of this certification or the Six Month Report may, in addition to other penalties, result in prosecution under applicable laws including 18 U.S.C. § 1001 and Md. Code Ann. Criminal Law Article § 9-101.

_____

Environmental Professional
Printed Name:

_____

Environmental Professional
Printed Name:

_____

Signature of representative of firm
Printed Name & Title:
Name of Environmental Firm:

Exhibit 6

Special Study Areas

Tin Mill Canal and Finishing Mills Area
Humphrey Impoundment
Greys Landfill Area
Coke Point Landfill
Coke Oven Area

Other Areas

Rod and Wire Mill Area
Greys Landfill Area "County Lands Parcel 1A"

▲ Areas Of Concern (AOC)

● Solid Waste Management Units (SWMU)

SPECIAL STUDY AREAS WITH AOCs & SWMUs FORMER RG STEEL SPARROWS POINT, MARYLAND	WEAVER BOOS CONSULTANTS	DRAWN BY: RD REVIEWED BY: CF DATE: 3/3/2014 FILE: 2570-306-01 CAD: SITELOC.DWG
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