

**ADMINISTRATIVE ORDER
FOR REMEDIAL DESIGN, REMEDIAL ACTION, AND OPERATION AND MAINTENANCE**

U.S. EPA DOCKET NO. CERCLA 01-2014-0024

CENTREDALE MANOR RESTORATION PROJECT SUPERFUND SITE

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1 – EPA New England
5 Post Office Square, Suite 100
Boston, MA 02109

In the Matter of:)
)

Centredale Manor Restoration Project Superfund Site)
)

Emhart Industries, Inc. and Black & Decker, Inc.,)
)

U.S. EPA Docket No.
CERCLA 01-2014-0024

Respondents)
)

Proceeding Under Section 106(a) of the Comprehensive)
Environmental Response, Compensation, and Liability Act)
of 1980, as amended (42 U.S.C. § 9606(a)))
)

ADMINISTRATIVE ORDER
FOR REMEDIAL DESIGN, REMEDIAL ACTION, AND OPERATION AND MAINTENANCE

I. INTRODUCTION AND JURISDICTION

1. This Order directs Respondents to perform a Remedial Design and to implement the Remedial Design by performing a Remedial Action and performing Operation and Maintenance of such Remedial Action for the remedy described in the Record of Decision (“ROD”) for the Centredale Manor Restoration Project Superfund Site (the “Site”), dated September 28, 2012. This Order is issued to Respondents by the United States Environmental Protection Agency (“EPA”) under the authority to issue “such orders as may be necessary to protect public health and welfare and the environment” vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg. 2926, January 29, 1987), further delegated to EPA Regional Administrators on May 11, 1994 by EPA Delegation No. 14-14-B, and redelegated to the Director, Office of Site Remediation and Restoration, by EPA Region 1 Delegation No. 14-14-B (Class No. 1200), dated September 3, 1996.

II. DEFINITIONS

2. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in the statute or its implementing regulations. Whenever terms listed below are used in this Order or in the

documents attached to this Order or incorporated by reference into this Order, the following definitions shall apply:

- a. "Administrative Record" shall mean the administrative record that contains the documents that form the basis for EPA's issuance of this Order. The Administrative Record includes, but is not limited to, the documents and information upon which EPA based the selection of the response actions for the Site (*i.e.*, the administrative records for the ROD and previous removal actions.)
- b. "ARARs" shall mean applicable or relevant and appropriate requirements under Section 121(d) of CERCLA, 42 U.S.C. § 9621(d).
- c. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9601 *et seq.*, commonly known as "Superfund."
- d. "Contractor" shall mean the company or companies retained by Respondents to undertake and complete the Work required by this Order. Each Contractor and Subcontractor shall be qualified to do those portions of the Work for which it is retained.
- e. "Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the end of the next working day.
- f. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- g. "EPA Hazardous Substance Superfund" or "Fund" shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.
- h. "Institutional Controls" or "ICs" shall mean proprietary controls and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (i) limit land, water, or other resource use to minimize the potential for human exposure to Waste Material at or in connection with the Site; (ii) limit land, water, or other resource use to implement, ensure non-interference with, or ensure the protectiveness of the Remedial Action pursuant to this Order; and/or (iii) provide information intended to modify or guide human behavior at or in connection with the Site.
- i. "National Contingency Plan" or "NCP" shall mean the National Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C § 9605, codified at 40 C.F.R. Part 300, including any amendments thereto.
- j. "Operation and Maintenance" or "O&M" shall mean all activities required to maintain the effectiveness of the Remedial Action, including long-term monitoring, in accordance with the SOW and the final plans and specifications developed in accordance with the SOW, including any additional activities required under Sections X, XI, XII, and XIII of this Order.
- k. "Order" shall mean this Order (Docket No. CERCLA 01-2014-0024) and all Appendices attached hereto.
- l. "Paragraph" of this Order shall mean a portion of this Order identified by an Arabic numeral.
- m. "Performance Standards" shall mean those cleanup standards, standards of control, targets and other substantive requirements, criteria or limitations (including ARARs), identified

in the Record of Decision and Statement of Work, that the Remedial Action and Work required by this Order must attain and maintain.

n. "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).

o. "Remedial Action" or "RA" shall mean those activities, except for Operation and Maintenance and Remedial Design, to be undertaken by Respondents to implement the Record of Decision in accordance with the Statement of Work and the final plans and specifications developed in accordance with the Statement of Work, including any additional activities required under Sections X, XI, XII, and XIII of this Order.

p. "Remedial Design" or "RD" shall mean those activities to be undertaken by Respondents to develop the final plans and specifications for the Remedial Action and Operation and Maintenance pursuant to the Record of Decision and in accordance with the Statement of Work.

q. "Respondents" shall mean Emhart Industries, Inc. and Black & Decker, Inc.

r. "Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in monitoring and supervising Respondents' performance of the Work to determine whether such performance is consistent with the requirements of this Order, including costs incurred in reviewing plans, reports, and other deliverables submitted pursuant to this Order, as well as costs incurred in overseeing implementation of this Order, including, but not limited to, payroll costs, contractor costs, travel costs, and laboratory costs.

s. "RIDEM" shall mean the Rhode Island Department of Environmental Management and any successor departments or agencies of the State.

t. "Section" of this Order shall mean a portion of this Order identified by a Roman numeral and includes one or more Paragraphs.

u. "Site" shall mean the Centredale Manor Restoration Project Superfund Site, as described in the ROD.

v. "State" shall mean the State of Rhode Island.

w. "Statement of Work" or "SOW" shall mean the Statement of Work for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at the Site as set forth in Appendix 1 to this Order. The Statement of Work is incorporated into this Order and is an enforceable part of this Order.

x. "Subcontractor" shall mean the company or companies retained by Respondents' Contractor to undertake and complete the Work required by this Order. Each Contractor and Subcontractor shall be qualified to do those portions of the Work for which it is retained.

y. "United States" shall mean the United States of America.

z. "Waste Material" shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any "pollutant or contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

aa. "Work" shall mean all activities Respondents are required to perform under this Order, including Remedial Design, Remedial Action, Operation and Maintenance, and any activities required to be undertaken pursuant to Sections VII through XXV of this Order, except those required by Section XIX (Retention of Records).

III. FINDINGS OF FACT

A. Description of the Site and Sources of Contamination

3. The Centredale Manor Restoration Project Superfund Site is located in North Providence, Rhode Island. It consists of two parcels, 2072 and 2074 Smith Street (Plat 14, Lots 200 and 250, encompassing approximately 9 acres) ("Source Area"), as well as surface water, sediment and floodplain areas of the Woonasquatucket River (the "River") from Route 44 southerly to the Allendale Dam and further below to the Lyman Mill Dam, including all contaminated areas within this area as well as any other locations to which contamination has come to be located.

4. Between about 1943 and the late 1960s or early 1970s, Atlantic Chemical Company, which changed its name in 1953 to Metro-Atlantic, Inc., operated a chemical manufacturing operation at the Source Area of the Site. In 1968, Metro-Atlantic changed its name to Crown-Metro, Inc. Emhart Industries, Inc. ("Emhart") and Black & Decker, Inc. ("Black & Decker") are the corporate successors to Atlantic Chemical Company, Metro-Atlantic, Inc. and Crown-Metro, Inc. (All of these companies are hereinafter collectively referred to as "Emhart/Black & Decker").

5. As part of its operations, Emhart/Black & Decker used and/or generated hazardous substances, including: dioxin (including 2,3,7,8-tetrachlorodibenzo-p-dioxin ("2,3,7,8-TCDD")), polychlorinated biphenyls ("PCBs"), pesticides, volatile organic compounds ("VOCs"), semi-volatile organic compounds ("SVOCs") (including polycyclic aromatic hydrocarbons ("PAHs")), pesticides, and/or metals at the Site. Among other activities, Emhart/Black & Decker manufactured hexachlorophene from trichlorophenol shipped to the Site. 2,3,7,8-TCDD is a contaminant present in trichlorophenol.

6. As part of its operations, Emhart/Black & Decker engaged in activities that led to releases or threats of releases of hazardous substances including dioxin, PCBs, VOCs, SVOCs, pesticides and/or metals at the Site.

7. Documents from legal proceedings related to the Site contain information to support that Emhart/Black & Decker engaged in activities that led to releases or threats of releases of hazardous substances including dioxin, PCBs, VOCs, SVOCs, pesticides and/or metals at the Site.

8. Emhart stated in a March 22, 2004 Reply Memorandum ("Emhart's Reply"), quoting Emhart expert Michael Bonchonsky, that during the period of Emhart/Black & Decker's operations at the Site "'environmental concerns and issues were at a very undeveloped stage' and were focused on 'sewage, oxygen demanding materials, solids, odors and other nuisances.'" "Prior to 1970, 'attention ... was directed to surface waters and mostly concerned visible acute impacts from discharges, such as fish kill and color.'"

9. Emhart's expert stated in an expert report that "[i]ndustrial operations, like [Emhart/Black & Decker's], involving the handling of chemicals, or petroleum products and similar raw materials commonly incurred everyday accidental releases of the materials that were used or generated in the manufacturing process. These occurred through spills, leaks, drips at many points in ordinary functions at the facility where such materials were conveyed by pipes, drums, tanks, pumps, etc. Such industrial materials flowed and were often pumped to meet various production needs through, for example, valves, manifolds, connections, and spigots. Everyday spills and leaks associated with such transport of materials on-site that went onto the ground were common and ordinary."

10. Emhart's expert stated in an expert report "[n]ormal spills and leaks regarded then as minor and hardly apparent to workers of that day later proved to be the cause of significant contamination that led to the programs of remediation at former manufacturing sites in the 1980s."

11. Emhart's Reply stated that "there is evidence of leaks or spills of trichlorophenol and other chemicals" at the Site by Emhart/Black & Decker. As noted earlier, 2,3,7,8-TCDD is a contaminant present in trichlorophenol.

12. Emhart's expert stated in an expert report "[t]he discharge of waste to surface waters . . . was also a common and acceptable practice for industrial manufacturing plants" and that "waterways were used in many cases to dilute industrial waste waters so that concentrations of substances would be reduced."

13. Emhart's expert stated in an expert report that the Emhart/Black & Decker facility was "located adjacent to the Woonasquatucket River on the west side and the tail race, another waterway, on the east side. Like many manufacturing plants, the facility utilized the river waters at the plant for a variety of purposes including the dilution of its wastewaters resulting in some part from the washdown of its equipment."

14. Emhart's Reply stated that, "[s]imilarly, throughout industry, the disposal of materials on the ground was quite common through the 1960's and even the 1970's and 1980's. . . . '[U]se of land for disposal of industrial waste was common and it was regarded as an accepted practice that was generally not harmful to the environment' during the period of operations at Metro-Atlantic. . . . In short, Metro-Atlantic's waste handling and disposal practices were in line with those followed by American industry in the pre-EPA era." (internal citations omitted). Emhart's expert further noted that "[e]ven the recycling of certain wastes for re-use and recovery resulted in thick viscous sludge, 'still bottoms,' that could not be reused. These sludges were mostly disposed of on the land."

15. United States Magistrate Judge Robert W. Lovegreen stated in his February 15, 2005 *Report and Recommendation* in connection with *Emhart Indus., Inc. v. Home Ins. Co.* that "there is also testimony that [Emhart/Black & Decker] buried drums on its portion of the Site, which drums apparently exploded or burned on occasion."

16. Emhart's Reply states several fires and explosions resulted in "releases of contaminants at the Site. In the mid-1960s, a fire was started when a truck driver opened a 3000 gallon tank of methanol in an attempt to obtain methanol for his space heater. An explosion occurred when a chemical was mistakenly pumped into a large storage tank containing a different chemical. In January 1968, a formaldehyde tank at [Emhart/Black & Decker] exploded, blew out several windows at the plant and released a 'giant mushroom of formaldehyde' off-Site. That explosion occurred when 'a delivery man mistook a full tank of formaldehyde for an empty one.' In August 1972, '[a]n explosion-punctuated fire destroyed two storage buildings and heavily damaged a third' at [Emhart/Black & Decker] in which 50 gallon drums were blown a distance of 150 feet and fire fighters from several communities fought the fire, using large amounts of water. . . . There was also a fire in July 1972. Such events at the Site created conditions conducive for spreading dioxin."

17. Counsel for Emhart/Black & Decker stated in court that the "contamination in – the greatest part, the dominant part, comes from a hexachlor[o]phene manufacturing operation . . . and that operation used substances that had dioxin as part of their constituents, and the dioxin that has been found on and off the site and is the subject of the cleanup . . . pretty clearly came from that operation."

18. Magistrate Judge Lovegreen stated in his February 15, 2005 *Report and Recommendation* that “the testimony, when taken in its entirety, appears to reveal mainly a pattern of systematic discharges and releases of chemical wastes and chemical substances in the course of manufacturing by [Emhart/Black & Decker] (and drum recycling by NEC). Specifically, testimony was offered that items such as presses were routinely washed at [Emhart/Black & Decker] and the flush materials were led into a trough which emptied ‘out back,’ a recollection that was repeated in a similar description by a second witness. The record supports that rinse water from intermittently washing vats was permitted to enter into the environment and, although not all washing waste entered the river, some portion of it was dumped into the tail race, entering the river eventually. The discharge of such wastes into the river reportedly ‘made the canal unsightly and caused an odor.’ A witness recollected repeated disposal of acid by [Emhart/Black & Decker] into the river by recalling that the black iron pipe used in the process had to be changed frequently because of erosion from the acid.”

19. Minutes from meetings of the North Providence Town Council and a 1956 newspaper article in the Providence Journal indicate that Emhart/Black & Decker discharged liquid wastes to land and surface waters at the Site – including the Woonasquatucket River and the tailrace – and used the southern portion of the Site as a dump, burning some of the materials it had disposed of thereon.

20. Other waste disposal activities, including the dumping of black sludge, were conducted by Emhart/Black & Decker at the southern dump.

21. Historical aerial photographs indicate waste disposal activities, dumping and associated earthmoving, occurred at the dump for much of the period of Emhart/Black & Decker’s operations at the Site. The photographs reveal that derelict equipment, derelict storage tanks, drums, and other debris were discarded in the dump. The photographs also indicate that an access road provided ready opportunity for Emhart/Black & Decker to use the dump area. Drainage features from waste disposal areas leading into the Woonasquatucket River and the eastern tailrace are also evident.

22. The testimony of numerous former area residents, volunteer fire fighters, and former employees of Emhart/Black & Decker and New England Container Company, Inc. (“NECC”) indicate that Emhart/Black & Decker disposed of wastes on the ground at the Site and directly and indirectly to surface waters adjacent to the Site, that it buried drums at the Site, and that numerous fires occurred at the Site – including at the on-site dump – during the period of Emhart/Black & Decker’s operations at the Site.

23. Records of the Centredale Fire Department also indicate that explosions, dump fires, building fires, and spills occurred at the Emhart/Black & Decker facility and in the southern dump area during the period of Emhart/Black & Decker’s operations.

24. Between 1952 and 1971, NECC operated an incinerator-based drum reconditioning facility, also located in the Source Area. When NECC began its operations, Emhart/Black & Decker was its sole customer. At some time during its operations at the Site, NECC began receiving barrels (also referred to as “drums,” or “containers”) from other companies for reconditioning, but Emhart/Black & Decker remained a significant NECC customer throughout the 1960s. Drum reconditioning operations occurred in the central portion of the Source Area and waste disposal activities occurred in the area surrounding the reconditioning facility as well as in the southern dump area.

25. Chemical residues and wastes containing hazardous substances from NECC’s customers, including from Emhart/Black & Decker, were dumped on the ground and/or burned prior to or as part of drum reconditioning or were otherwise released at the Site. Containers that arrived at NECC’s facility for reconditioning from NECC’s customers often contained residues of varying amounts. During the

reconditioning process, residues were decanted and the containers were, *inter alia*, burned or rinsed. Waste resulting from the container reconditioning process was discarded at the Source Area or in the adjacent Woonasquatucket River. In addition, during the course of NECC's operations, materials from drums that were handled and/or stored at the NECC facility before reconditioning leaked onto the ground. NECC generated ash at its facility (as a result of heating the containers in a furnace) and generated other wastes (including barrels, sludge, shot dust, cleaning solutions and plastic liners) resulting from NECC's drum reconditioning process, which were disposed of on the Site, including in the southern dump area. Waste waters containing chemical residues generated from waste received from NECC's customers as well as from NECC's operations were released to the ground or discharged through pipes and drains that lead to the Woonasquatucket River. Furthermore, emissions during the processing of barrels, explosions and blowing dust spread contamination to other portions of the Source Area.

26. The reconditioning of Emhart/Black & Decker's drums and related waste disposal practices resulted in releases or threats of releases of hazardous substances at the Site, including dioxin, PCBs, pesticides, VOCs, SVOCs, and/or metals at the Site.

27. Numerous complaints and fires were reported to local and state authorities during the time chemical manufacturing operations were conducted on the Source Area. As discussed above, a major fire in 1972 destroyed most of the structures at the Source Area and remaining buildings were then demolished.

28. As discussed above, hazardous substances from Emhart/Black & Decker's operations (including associated drum reconditioning) were released directly to the ground, discharged directly or indirectly into the River, emitted into the air, or were otherwise released. Direct infiltration of contaminants and leaching led to contamination of surface and subsurface soil as well as to groundwater contamination which discharged to the River. Transport of contaminated Source Area soil by surface runoff and during flooding resulted in contaminant migration into surface water and sediment in the adjacent Woonasquatucket River and its floodplain downstream from the Source Area of the Site.

29. At this time, the Site is used for elderly housing. The Brook Village apartments were constructed in 1977 and the Centredale Manor apartments were constructed in 1982 on the Source Area, where chemical manufacturing and drum reconditioning activities previously took place. These two buildings, parking lots, and driveways occupy a large portion of the Source Area.

30. In 1996, EPA first detected dioxin in fish collected from the River.

31. In 2009, samples taken by EPA and/or Emhart/Black & Decker underneath, and in the immediate vicinity of the former building in which Emhart/Black & Decker manufactured hexachlorophene showed dioxins in soil at a depth of several feet in concentrations as high as 140,000 parts per trillion (ppt), which is over 2,800 times the background level of 50 ppt. Samples taken in the dump area also showed dioxins in soil at concentrations as high as 140,000 ppt.

32. The highest levels of tetrachloroethene (PCE) were found in soil in the vicinity of the former hexachlorophene manufacturing building, with concentrations as high as 1,700 parts per million (ppm), which is 17,000 times greater than the RIDEM regulatory GA leachability criteria of 0.1 ppm.

33. Elevated levels of dioxin and other hazardous substances have been found in surface soils on residential properties and in areas subject to recreational use along the floodplain of the Woonasquatucket River.

34. Portions of the Site are subject to erosion as well as periodic flooding, which have caused, and will continue to cause, the migration of contaminated soil at the Site into the Woonasquatucket River and the migration of contaminated sediments further downstream.

B. History of EPA Response and Remedy Selection

35. Since 1996, EPA has conducted numerous investigations and cleanup actions at the Site, or has overseen the performance of these activities by potentially responsible parties (“PRPs”) including Emhart/Black & Decker, as described in the Paragraphs below.

36. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List (“NPL”), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on March 6, 2000.

37. On February 28, 2000 and October 20, 2011, EPA sent letters to Emhart and Black & Decker, respectively, notifying them of their potential liability at the Site under Section 107 of CERCLA.

38. From 1999 until the present, EPA has performed various response actions at the Site, or overseen the performance of these actions by certain PRPs pursuant to various unilateral administrative orders and consent orders, including:

- a. in 1999-2000, a time-critical removal action for sampling, temporary fencing, and installation of interim soil caps;
- b. in 2000-2003, a non-time critical removal action for reconstruction of the breached Allendale Dam (the first dam located downstream from the Source Area), restoration of Allendale Pond, and removal of floodplain soils from eleven residential properties located along Allendale and Lyman Mill Ponds;
- c. in 2003-2004, a time-critical removal action to address the tailrace along the eastern side of the Source Area, re-grading and capping of the drainage swale with a permeable one-foot cap, and installation of storm drainage equipment to prevent contaminant migration; and
- d. in 2009-2010, a time-critical removal action to address contaminated groundwater, including excavation and disposal of contaminated soils from the area near the eastern bank of the River and the southern end of the Brook Village parking lot and installation of an impermeable cap over the impacted area.

In addition, other investigatory actions have been undertaken under EPA oversight.

39. In response to the release or substantial threat of release of hazardous substances at or from the Site, EPA commenced a Remedial Investigation and Feasibility Study (“RI/FS”) for the Site in 2000, pursuant to 40 C.F.R. § 300.430. EPA completed a Remedial Investigation (“RI”) Report in June 2005. EPA also supplemented this report with additional data and analysis.

40. On April 30, 2010, EPA issued an Interim Final Feasibility Study for the Site. The Interim Final Feasibility Study was later updated by a Feasibility Study Addendum in September 2011 and a Technical Memorandum in May 2012. These documents are referred to collectively as the “FS.” The FS presented

the remedial alternatives evaluated to address Site conditions and potential risks. EPA also supplemented these reports with additional data and analysis.

41. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the Interim Final Feasibility Study, the Feasibility Study Addendum, and the proposed plan for remedial action (the "Proposed Plan") in October 2011, in a major local newspaper of general circulation. EPA provided an opportunity for comments from the public on the Proposed Plan.

42. On July 19, 2012, EPA issued an amendment to the Proposed Plan (the "Proposed Plan Amendment") and provided an opportunity for comments from the public on the Proposed Plan Amendment.

43. The decision by EPA on the remedial action to be implemented at a portion of the Site is embodied in a Record of Decision ("ROD"), executed on September 28, 2012, on which the State has given its concurrence. The ROD includes a responsiveness summary that addresses public comments, including comments received from Emhart/Black & Decker. The ROD is incorporated herein by reference and a citation is provided in Appendix 2. Notice of the ROD was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

44. Between August and December 2013, EPA and RIDEM put in place interim protective measures required under the ROD on residential properties that border the Woonasquatucket River. Pursuant to the ROD, portions of residential properties that are vulnerable to flooding and recontamination from the River were fenced off and/or covered to reduce the potential for exposure to contamination in floodplain soil in the short term.

45. On August 8, 2013, EPA entered into an Administrative Order on Consent with a group of PRPs which required these parties to conduct a pre-design investigation on a portion of the Source Area pursuant to the requirements of the ROD. This investigation focused on better defining the nature of the material that may need to be excavated and/or treated prior to installation of a RCRA C cap in the Source Area. The on-site component of the investigation was completed in the fall of 2013 and sampling results are expected in the spring of 2014. Once this data is received and reviewed by EPA, design, including design evaluations specified in the ROD, and construction of the remedial action in the Source Area can begin.

C. Characteristics of the Contaminants

46. As documented in the RI/FS and ROD, analysis of soil, sediment, floodplain soil, surface water, biota and groundwater samples at the Site shows high levels of hazardous substances, pollutants or contaminants, including dioxin, PCBs, metals, pesticides, VOCs, and SVOCs (including PAHs).

47. Dioxins are a group of many chemical compounds that share chemical structure and similar biological mechanisms of action. The most studied and one of the most toxic dioxins is 2,3,7,8-TCDD. Dioxins are potent animal toxicants with a potential to produce a broad spectrum of adverse effects in humans. Dioxins can alter the fundamental growth and development of cells in ways that have the potential to lead to many kinds of impacts, including adverse effects upon reproduction and development; suppression of the immune system; chloracne (a severe acne-like condition that sometimes persists for many years); and cancer. EPA characterizes 2,3,7,8-TCDD as a "human carcinogen" based on evidence of animal and human studies, and characterizes other dioxins as "likely human carcinogens." Dioxins are highly persistent in the environment and can accumulate in the tissues of animals. 2,3,7,8-TCDD exposures may also result in adverse non-cancer health effects on the reproductive and endocrine systems,

such as decreased sperm count and motility in men exposed to 2,3,7,8-TCDD as boys or increased levels of thyroid stimulating hormone in newborns exposed to 2,3,7,8-TCDD in utero.

48. Exposure to dioxins (and dioxin-like compounds) can result in five categories of toxicological effects to ecological receptors. These effects, which have been studied mainly in mammals but may also occur in most other vertebrate groups, are as follows:

- a. Cytochrome P450 induction: dioxins bind to the aryl hydrocarbon (Ah) receptor present in cells. The dioxin/Ah receptor complex binds to nuclear DNA, where promotion of gene activity occurs. This binding increases the production of cytochrome P450 1A1, which in turn increases production of P450-dependent enzymes which oxidize both foreign and endogenous compounds. Although this response protects cells, it can affect the metabolism of useful substances like steroid hormones, which can disturb critical functions.
- b. Immune system suppression: dioxins affect the immune systems of animals. The mechanism for immune system effects is not well understood but these compounds can cause hypertrophy of the thymus, an important part of the immune system.
- c. Porphyria: dioxins can disrupt the process by which the liver produces a compound of the blood pigment hemoglobin, thereby leading to sensory disorders and paralysis.
- d. Disruption of vitamin A metabolism: dioxins can inhibit the process by which Vitamin A is stored in the liver, thereby resulting in fetal damage, growth disorders and sterility.
- e. Sex hormone effects: dioxins affect estrogen receptors in certain organs in female rats, possibly resulting in lower fertility and higher incidence of tumors in these organs. In male rats, dioxin reduces testosterone levels by preventing production of enzymes responsible for increasing testosterone synthesis when levels of the hormone get low.

49. PCBs are mixtures of up to 209 individual synthetic chlorinated compounds. PCBs are classified as a CERCLA hazardous substance in the comprehensive list promulgated by EPA under CERCLA § 102(a), codified at 40 C.F.R. § 302.4, Table 302.4. PCBs are chemically stable, readily adsorb onto sediment particles, and resist biodegradation. PCBs are characterized as probable carcinogens in humans based on limited evidence in human studies and sufficient evidence in animal studies. EPA has found evidence that PCBs have toxic effects on animals, including cancer, liver toxicity, reproductive toxicity, developmental effects, neurotoxicity, dermal toxicity, and thyroid and endocrine effects. Workers exposed to PCBs have been found to have increases in cancer of the liver, gastrointestinal tract, skin, and gall bladder. PCBs can bind to sediment in water and bioaccumulate in fish and other aquatic species exposed to PCBs, increasing the risk of adverse health effects for humans who consume these contaminated species.

50. Planar and *mono-ortho* PCB congeners interact with the Ah receptor in a manner similar to dioxin. However, some PCB-induced toxicity (including neurological and immunological effects, or tissue damage) is not Ah-receptor mediated. A joint role of Ah-receptor dependent and independent mechanisms may be associated with liver hypertrophy, reproductive effects attributable to steroid hormone imbalance, thyroid hormone imbalance, and immunological effects.

51. PCBs affect mortality, growth, and reproduction in community-level aquatic organisms. Effects of PCBs on fish include mortality, growth-related effects, behavior responses, biochemical alterations, and adverse reproductive effects. Piscivorous birds exposed to PCBs and dioxins show strong reproductive impairment. Symptoms include altered biochemical homeostasis, physical deformities,

fetotoxicity, and teratogenesis. In addition to embryo mortality, PCB exposure in birds causes edema and beak malformations.

52. Mammals are strongly affected by exposure to specific PCB congeners, including the non-ortho and mono-ortho substituted PCBs, because the mechanism of action of these compounds is similar to dioxin. PCBs can cause mortality or affect reproduction in mammals. Other clinical signs of PCB toxicity include anorexia, liver and kidney degeneration, and gastric ulcers, which have been observed in mink fed PCB-contaminated fish.

53. PAHs are a large class of ubiquitous, natural and anthropogenic SVOC chemicals, all with similar chemical structures. Benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene are classified in Group B2 (probable human carcinogens with sufficient evidence from animal studies). Benzo(a)pyrene is the most extensively-studied member of the class, inducing tumors in multiple tissues of virtually all laboratory species tested by all routes of exposure. It is difficult to ascribe observed health effects in epidemiological studies to specific PAHs because most exposures are to PAH mixtures. Increased incidences of lung, skin, and bladder cancers are associated with occupational exposure to PAHs. Adverse effects resulting from human exposures to non-carcinogenic PAHs, including fluoranthene and naphthalene, include hemolytic anemia with associated jaundice and occasionally renal disease, pulmonary system, gastrointestinal system, renal system, and dermatologic system after chronic exposure. In animal studies, high doses of naphthalene resulted in reduced growth rates. Animal studies also indicate that kidney disease can develop when animals are exposed to high doses of pyrene.

54. Metals are naturally-occurring inorganic substances used in industry. Certain metals are classified as CERCLA hazardous substances in the comprehensive list promulgated by EPA under CERCLA § 102(a), codified at 40 C.F.R. § 302.4. Metals found at the Site include, but are not limited to, lead, arsenic, and manganese. Lead can be harmful to humans when ingested or inhaled, particularly to the neurological development of children under the age of six. Inorganic arsenic is a human poison. Organic arsenic is less harmful. High levels of inorganic arsenic in food or water can be fatal. Arsenic damages many tissues including nerves, stomach and intestines, and skin. Manganese can elicit a variety of serious toxic responses to the central nervous system upon prolonged exposure to elevated concentrations. Symptoms progress with continued exposure and eventually include irreversible motor disturbances, tremors, and difficulty in walking, symptoms similar to those seen with Parkinsonism.

55. Most metals affect multiple organ systems in ecological receptors. The targets for toxicity are specific biochemical processes, such as enzymes and/or membranes of cells and organelles. Metal toxicity depends on the concentration of each inorganic and where it is located within the organism. Metal exposure may result in additive, synergistic, or antagonistic effects, with the overall response depending on the toxicity of the metals in question, the specific physical and chemical conditions, and internal synergistic or antagonistic effects within organisms.

56. Metal toxicity to invertebrates ranges from growth reduction to acute mortality. Mollusks are generally less sensitive than other aquatic phyla. Embryos and larvae of benthic organisms are the life stages most sensitive to metals. Metals reduce survival and affect reproduction in benthic invertebrates. Reduced growth is often observed in invertebrates at sublethal exposures. Exposures can also result in abnormal development, including molt inhibition. Freshwater fish are generally more sensitive to metals than marine species, and the larval stages are generally more sensitive than older stages. Commonly observed effects include reduced growth and fecundity, and increased mortality. Avian dietary studies with metals show that toxicity often depends on the organism's level of metallothioneins, which bind up and sequester metals. Sublethal effects can include reproductive and behavioral modifications.

57. VOCs are a class of organic compounds that evaporate readily into the air and that contain carbon atoms. Outdoors, VOCs are volatilized or released into the air mostly during manufacture or use of everyday products and materials, while indoors, VOCs are mostly released into the air from the use of products and materials containing VOCs. The VOCs found at the Site include, but are not limited to, benzene, chlorobenzene, tetrachloroethene, trichloroethene, and vinyl chloride. VOCs are emitted as gases from certain solids or liquids and include a variety of chemicals, some of which may have short- and long-term adverse health effects. Eye, nose, and throat irritation; headaches, loss of coordination, nausea; damage to liver, kidney, and central nervous system are some adverse health effects from exposures to VOCs. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans. Key signs or symptoms associated with exposure to VOCs include conjunctival irritation, nose and throat discomfort, headache, allergic skin reaction, dyspnea, declines in serum cholinesterase levels, nausea, emesis, epistaxis, fatigue, and dizziness.

58. The SVOCs found at the Site at levels causing human health risks are benzo(a)pyrene [B(a)P], dibenzo(a,h)anthracene, and N-nitroso-di-n-propylamine. B(a)P exposure during pregnancy can result in increased incidence of tumors in lung, liver, ovaries, and other organs in adult offspring. In adults, B(a)P exposure is associated with altered sperm morphology and decreased sperm numbers, and decreased egg numbers. At high levels of acute exposure in adults, B(a)P has been reported to be associated with immune system suppression and red blood cell damage, which can lead to anemia. There are no human data that specifically link exposure to dibenzo(a,h)anthracene with human cancers although animal studies showed that dibenzo(a,h)anthracene is carcinogenic to experimental animals exposed to it. N-nitroso-di-n-propylamine is a probable human carcinogen based on sufficient evidence of carcinogenicity in animals, with increased tumor incidence at multiple sites in two rodent species and in monkeys experimentally exposed to it.

59. Pesticides are a group of chemicals used to prevent, destroy, or repel pests, including insects, mice and other animals, weeds, fungi, or microorganisms, such as bacteria and viruses. The pesticides found at the Site include 4,4'-DDD, 4,4'-DDE, dieldrin, and technical chlordane. Organochlorine pesticides include the chlorinated ethane derivatives, such as DDD and DDE; cyclodiene compounds, such as chlordane, aldrin, dieldrin, heptachlor, endrin, and toxaphene; and the hexachlorocyclohexanes, such as lindane. These compounds readily bioaccumulate in aquatic and terrestrial ecological receptors and exhibit a wide range of toxicities. They have been banned from commerce in the US for over 30 years but are still present at detectable concentrations because they resist microbial degradation and therefore persist in the environment. For human health effects, pesticides act as neurotoxins. The target locus of primary toxic action of at least some organochlorine pesticides appears to be sensory and motor nerve fibers and the motor cortex in vertebrates. The observed toxicological effect of exposure to these pesticides is the inhibition of the ion transport system in the nervous system. DDD and DDE are probable human carcinogens.

60. The organochlorine pesticides are highly toxic to all aquatic invertebrates and fish. Birds are generally less sensitive than aquatic organisms.

D. Routes of Exposure and Exposure Pathways

61. The primary routes of human exposure to the hazardous substances, identified in Paragraphs 46 through 60, above, at the areas of the Site as identified in the ROD are as follows:

a. Source Area

- i. Future residents exposed to soil above the water table, assuming the existing caps are not present or not effective in preventing direct contact exposure to soils (via ingestion and dermal contact); and
 - ii. Future construction workers exposed to soil above the water table, assuming the existing caps are not present or not effective in preventing direct contact exposure to soils (via ingestion and dermal contact).
- b. Allendale
- i. Current and future residents living along the River (child and adult) exposed to biota – combined fish diet of American eel and white sucker (via ingestion) and sediment (via ingestion and dermal contact);
 - ii. Current and future visiting recreational anglers (child and adult) exposed to biota – combined fish diet of American eel and white sucker (via ingestion);
 - iii. Current and future residents living in the area exposed to residential-use floodplain soil on the eastern shore of Allendale Pond (via ingestion and dermal contact); and
 - iv. Current and future passive recreational visitors (child and adult) to the area exposed to recreational-use floodplain soil on the western shore of Allendale Pond (via ingestion and dermal contact).
- c. Lyman Mill
- i. Current and future residents living along the River (child and adult) exposed to biota – combined fish diet of American eel, largemouth bass, and white sucker (via ingestion) and sediment (via ingestion and dermal contact);
 - ii. Current and future visiting recreational anglers (child and adult) exposed to biota – combined fish diet of American eel, largemouth bass, and white sucker (via ingestion);
 - iii. Current and future residents living in the area exposed to residential-use floodplain soil on the eastern shore of Lyman Mill Pond (via ingestion and dermal contact); and
 - iv. Current and future passive recreational visitors (child and adult) exposed to floodplain soil at the Oxbow General Area (via ingestion and dermal contact).
- d. Source Area Groundwater
- i. Future adults and children exposed to groundwater that exceeds Federal drinking water regulatory criteria (Maximum Contaminant Levels/Maximum Contaminant Level Goals).

62. The primary routes of ecological exposure to the hazardous substances, identified in Paragraphs 46 through 60, are as follows:

- a. Allendale Pond, Lyman Mill Pond, Manton Pond, and Dyerville Pond aquatic habitats
 - i. The current and future aquatic invertebrate community in the ponds exposed directly to sediment and surface water and by ingesting aquatic food items.
 - ii. Current and future fish populations in the ponds exposed directly to surface water and by ingesting aquatic food items.

- iii. Current and future mammal and bird piscivores, insectivores, and omnivores foraging in the ponds and exposed by ingesting surface water, sediment, and aquatic food items.
- b. The Oxbow floodplain aquatic habitat
 - i. The current and future aquatic invertebrate community in the Oxbow floodplain exposed directly to sediment.
- c. Allendale Pond, Lyman Mill Pond, and the Oxbow floodplain terrestrial habitats
 - i. The current and future terrestrial invertebrate community in the floodplain areas exposed directly to soil and by ingesting soil-related food items.
 - ii. Current and future mammal and bird vermivores (worm-eaters) in the floodplain areas exposed by ingesting soil and worms.
 - iii. Current and future mammal terrestrial omnivores in the floodplain areas exposed by ingesting soil, terrestrial plants, and other terrestrial food items.

E. Populations at Risk

63. As described in Section G of Part 2 of the ROD, EPA's generally acceptable cancer risk range for site-related exposure is 10^{-4} to 10^{-6} or $10E-4$ to $10E-6$. Current EPA practice considers carcinogenic risks to be additive when assessing exposure to a mixture of hazardous substances. RIDEM considers cumulative exposures greater than 1×10^{-5} (or 1 in 100,000) to be unacceptable for cancer risk. In assessing the potential for adverse effects other than cancer, a hazard quotient (HQ) is calculated. An HQ of less than or equal to 1 indicates that toxic non-carcinogenic effects from a given chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemicals that affect the same target organ (e.g., liver) within or across those media to which the same individual may reasonably be exposed.

64. The unacceptable levels of cancer risk and non-cancer hazard identified in the preceding Paragraph 63, caused by the actual or threatened release from the Site of the hazardous substances identified in Paragraphs 46 through 60, via the exposure pathways identified in Paragraphs 61, result in the following increased risks to populations within each of the following areas of the Site as identified in the ROD.

a. Source Area

- i. For the child and adult resident, future carcinogenic risks from exposures to surface soil and subsurface soil both exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risks were 4×10^{-3} (4E-03) from surface soil and 2×10^{-3} (2E-03) from subsurface soil via ingestion and dermal contact. The future non-carcinogenic hazard indices for a child resident from exposures to surface and subsurface soil exceed the EPA threshold level of 1. For a child resident exposed to contaminated surface soil via ingestion and dermal contact, the HI is 305 based on adverse effects on the immune system and the HI is 150 based on adverse effects on the reproductive/endocrine systems. For a child resident exposed to contaminated subsurface soil via ingestion and dermal contact, the HI is 109 based on adverse effects on the immune system and the HI is 50 based on adverse effects on the reproductive/endocrine systems.

- ii. For the construction worker, future carcinogenic risks from exposure to surface soil exceed the RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risks were 5×10^{-5} (5E-05) via ingestion and dermal contact. The future non-carcinogenic hazard index for the construction worker from exposure to surface soil exceeds the EPA threshold level of 1. For a construction worker exposed to contaminated surface soil via ingestion and dermal contact, the HI is 13 based on adverse effects on the immune system.

b. Allendale Area

- i. For the child and adult resident, current and future carcinogenic risks from consumption of contaminated biota and ingestion/dermal contact of contaminated sediment exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risks were 5×10^{-3} (5E-03) from biota consumption and 2×10^{-4} (2E-04) from sediment exposures via ingestion and dermal contact. The current and future non-carcinogenic hazard indices for a child resident from consumption of contaminated biota and ingestion/dermal contact of contaminated sediment exceed the EPA threshold level of 1. For children living along the River, the HI is 28 based on adverse effects on the immune system, the HI is 129 based on the reproductive/endocrine systems from contaminated fish via biota consumption, and the HI is 16 based on adverse effects on the reproductive/endocrine systems from ingestion of contaminated sediment.
- ii. For the visiting recreational angler, current and future cumulative carcinogenic risks from consumption of biota exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risk is 5×10^{-3} (5E-03) for biota consumption. The current and future non-carcinogenic hazard indices for the child visiting the recreational angler who shared the catch exceed EPA threshold level of 1. The HI is 28 based on adverse effects on the immune system and the HI is 129 based on adverse effects on the reproductive/endocrine systems from contaminated fish via biota consumption.
- iii. For the residents along the eastern shore of Allendale Pond, current and future carcinogenic risks from exposure to residential-use floodplain soil exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} due to potential current and future exposures for resident exposed to residential-use floodplain soil. The highest cumulative carcinogenic risk was 2×10^{-4} (2E-04) from floodplain soil exposures mainly via ingestion of contaminated floodplain soil. The current and future non-carcinogenic hazard index for the child resident along the eastern shore of Allendale Pond from ingestion of contaminated floodplain soil exceeds the EPA threshold level of 1. The highest HI is 17 based on adverse effects on the reproductive/endocrine systems mainly from ingestion of contaminated floodplain soil.
- iv. For the recreational visitor along the western shore of Allendale Pond, current and future cumulative carcinogenic risks from ingestion and dermal contact with floodplain soil are within the EPA acceptable risk range of 10^{-4} to 10^{-6} but exceed the RIDEM cancer risk level of 1×10^{-5} . For the recreational visitor, the cumulative carcinogenic risk is 2×10^{-5} (2E-05) via mainly ingestion and dermal contact with floodplain soil.

c. Lyman Mill Area

- i. For the child and adult resident living along the River, current and future carcinogenic risks from ingestion of contaminated biota and ingestion/dermal contact with contaminated sediment exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risks were 6×10^{-3} (6E-03) from biota consumption and 3×10^{-4} (3E-04) from sediment exposures via ingestion and dermal contact. The current and future non-carcinogenic hazard indices for a child resident living along the River from ingestion of contaminated biota and ingestion/dermal contact with contaminated sediment exceed the EPA threshold level of 1. The HI is 32 based on adverse effects on the immune system and 159 based on adverse effects on reproductive/endocrine systems from contaminated fish via biota consumption. The HI is 24 for a child resident living along the River based on adverse effects on the reproductive/endocrine systems via ingestion of and dermal contact with contaminated sediment.
 - ii. For the visiting recreational angler, current and future cumulative carcinogenic risks from biota consumption exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risk is 6×10^{-3} (6E-03) for biota consumption. The current and future non-carcinogenic hazard index for the child visiting recreational angler who shared the catch exceeds the EPA threshold level of 1. The HI is 32 based on adverse effects on the immune system and is 159 based on adverse effects on the reproductive/endocrine systems from contaminated fish via biota consumption.
 - iii. For the child and adult resident living along the eastern shore of Lyman Mill Pond, current and future carcinogenic risks from exposure to residential-use floodplain soil exceed the EPA acceptable risk range of 10^{-4} to 10^{-6} and RIDEM cancer risk level of 1×10^{-5} . The highest cumulative carcinogenic risk was 9×10^{-3} (9E-03) mainly via ingestion of and dermal contact with contaminated floodplain soil. The current and future non-carcinogenic hazard index for the child and adult resident living along the eastern shore of Lyman Mill Pond exceed the EPA threshold level of 1. The highest HI is 20 based on adverse effects on the reproductive/endocrine systems mainly from ingestion of contaminated floodplain soil.
- d. Lyman Mill Oxbow Area (General Area)
- i. For the passive recreational visitor, current and future cumulative carcinogenic risks from exposure to contaminants in floodplain soil exceed the RIDEM cancer risk level of 1×10^{-5} . The cumulative carcinogenic risk is 6×10^{-5} (6E-05). The current and future non-carcinogenic hazard index for the child passive recreational visitor from ingestion of contaminated floodplain soil exceeds the EPA threshold of 1. The HI is 4 based on adverse effects on reproductive/endocrine systems mainly from ingestion of contaminated floodplain soil.

65. As described in Section G of the ROD, EPA determined that an unacceptable ecological risk exists for fish and wildlife that are exposed through direct contact to site contaminants in sediment or floodplain soil and from feeding on contaminated prey.

- a. Allendale Area
 - i. Piscivorous birds: feeding on fish containing total Aroclors, dioxin TEQ (primarily 2,3,7,8-TCDD), and Aroclor 1254;
 - ii. Piscivorous mammals: feeding on fish containing dioxin TEQ (primarily 2,3,7,8-TCDD);

- iii. Insectivorous birds and mammals: feeding on aquatic insects containing dioxin TEQ (primarily 2,3,7,8-TCDD);
 - iv. Vermivorous birds and mammals: feeding on earthworms containing dioxin TEQ (primarily 2,3,7,8-TCDD) and Aroclor 1254; and
 - v. Fish: exposed through multiple exposure pathways that result in high body burdens of Aroclor 1254, technical chlordane, dioxin TEQ (primarily 2,3,7,8-TCDD), selenium, and zinc.
- b. Lyman Mill Area
- i. Piscivorous birds: feeding on fish containing total Aroclors, dioxin TEQ (primarily 2,3,7,8-TCDD), 4,4'-DDE, Coplanar PCB TEQ, Aroclor 1254, 4,4'-DDD and technical chlordane;
 - ii. Piscivorous mammals: feeding on fish containing dioxin TEQ (primarily 2,3,7,8-TCDD), Aroclor 1254 and Coplanar PCB TEQ;
 - iii. Insectivorous birds and mammals: feeding on aquatic insects containing dioxin TEQ (primarily 2,3,7,8-TCDD) and Coplanar PCB TEQ;
 - iv. Vermivorous birds and mammals: feeding on earthworms containing 2,3,7,8-TCDD (dioxin TEQ), selenium and zinc; and
 - v. Fish: exposed through multiple exposure pathways that result in high body burdens of Aroclor 1254, technical chlordane, 4,4'-DDD, 4,4'-DDE, dioxin TEQ (primarily 2,3,7,8-TCDD), Coplanar PCB TEQ, aluminum, barium, selenium, vanadium and zinc.

F. Selected Remedy

66. The ROD sets forth the selected remedy for the Site and generally includes the following activities:

- a. Removal of potential buried waste in the Source Area and off-site disposal and/or treatment; relocation of underground utilities into clean corridors; and conversion of existing surfaces (soil caps, parking lots, paved areas, and landscape areas) into a RCRA C cap.
- b. Excavation of sediment and floodplain soil in the Allendale and Lyman Mill reaches of the Woonasquattucket River; containment of excavated material in an upland CDF with contamination that exceeds the Land Disposal Restrictions' alternative treatment standards shipped off-site for disposal and/or treatment; placement of a thin-layer cover over remaining contaminated sediment in the River, if needed; and placement of a thin-layer cover over remaining contamination in the Oxbow wetland.
- c. Placement, monitoring and enforcement of ICs to permanently prohibit future excavation, restrict access to buried utilities, prevent the construction of buildings with pilings or basements or any other disturbance of the cap or other remedial components in the Source Area; permanently restrict the use of groundwater at the Source Area; permanently prevent excavation/construction or other activities that could damage the upland CDF; temporarily prevent excavation or other activities that could damage the thin-layer soil cover and Allendale

Dam; temporarily restrict recreational access in the Oxbow wetland; and temporarily restrict fish consumption.

d. Long-term inspections, maintenance and monitoring of the RCRA C cap in the Source Area; installation of additional groundwater monitoring wells and groundwater monitoring at the edge of the Source Area cap; inspections, maintenance and monitoring of the upland CDF and dams; monitoring of sediment, surface water, floodplain soil and biota, and monitoring and maintenance to control invasive species.

e. Wetlands and floodplain mitigation.

67. The Site remedy is intended to address the principal human health and ecological threats identified in Paragraphs 64 to 65. The selected remedy addresses all current and potential future risks caused by soil, sediment, groundwater, biota, and surface water contamination within the area of the Site addressed by the ROD.

68. The individual remedial components of the ROD and the risks that they are intended to address are identified below. The following descriptions are organized in accordance with the five areas of the Site identified in the remedy selected in the ROD.

a. Source Area

The ROD requires excavation and off-site treatment and disposal of potential buried Waste Material, and the upgrade of existing interim caps, landscape areas, and paved surfaces to meet RCRA C standards for caps over unlined hazardous waste landfills. Underground utilities will be relocated into trenches with only clean soil. These remedial measures will mitigate the risk to future residents and construction workers by preventing incidental ingestion and dermal contact with contaminated soil, will prevent leaching or migration of contaminants from vadose zone soil into groundwater that could exceed regulatory standards and prevent migration of contaminants from the Source Area that could contribute to risks from sediment, surface water, floodplain soil and/or biota. Long term inspections, maintenance and monitoring of the RCRA C cap and institutional controls will help ensure that these cleanup actions remain protective of human health in the long term.

b. Source Area Groundwater

The ROD requires implementation of long-term measures to confirm that the groundwater response action, which was completed as a removal action in 2010, is effective in the long term and protective. Long-term measures include the installation of three additional deep monitoring wells, and implementation of long-term monitoring on an annual basis. These measures, in combination with the impermeable cap required in the Source Area and institutional controls, will help ensure that the groundwater remedy remains effective in the long term and protective of human health by preventing direct human exposure to contaminated groundwater and reducing contaminant concentrations in groundwater at the edge of the cap to levels that are protective of human health. These measures also prevent the migration of contaminants from Source Area groundwater.

c. Allendale Pond and Lyman Mill Pond Sediment

The ROD requires the excavation of contaminated sediment, placement of approximately 90 percent of the excavated materials in an upland CDF located above the 100-year flood elevation, and shipment of the remaining approximately 10 percent of excavated material for off-site disposal and/or treatment. Should any residual contamination remain, a thin six-inch sand cover will be placed over any remaining contamination after excavation and sampling.

This component of the cleanup includes restoration and mitigation for the temporary elimination of fish populations, long-term monitoring to assess river recovery, and the long-term maintenance of the upland CDF. These remedial measures will mitigate the current and future carcinogenic and/or non-carcinogenic risks from consumption of contaminated fish and/or incidental ingestion of/dermal contact with contaminated sediment to current and future residents and visiting recreational anglers by removing sediment from the River that presents an unacceptable risk and reducing the contaminant levels in fish. In addition, excavation of sediment will reduce the risks to fish and wildlife related to bioaccumulation hazards associated with prey consumption and direct contact with contaminated sediments and will prevent further migration of contaminants.

d. Allendale Floodplain Soil

The ROD requires the excavation of contaminated floodplain soil from non-residential use property and contaminated floodplain soil from residential-use properties. The ROD also requires precautionary interim measures, such as fencing or spreading a cover, to prevent exposures to residential-use contaminated floodplain soil. Disposal and/or treatment are similar to those used for Allendale Pond and Lyman Mill Pond Sediment, as described above. These remedial measures will mitigate the current and future carcinogenic and/or non-carcinogenic risks to residential and recreational users from incidental ingestion of/dermal contact with contaminated floodplain soil by removing contaminated soil from the floodplain. In addition, the removal of soil will reduce the risks to wildlife associated with prey consumption and contaminated soil contact and will prevent migration of contaminants from Allendale floodplain soil to river surface water and sediment.

e. Lyman Mill Stream Sediment and Floodplain Soil (including Oxbow)

The ROD requires targeted excavation of contaminated sediment and soil, enhanced natural recovery (placement of a three-inch layer cover over 22.2 acres of contaminated floodplain soil and sediment) for non-residential use property, and installation of flood control structures to divert water flow into the Oxbow to help the natural buildup of clean soil and sediment. The ROD also requires excavation of contaminated floodplain soil from residential-use properties as well as interim precautionary measures similar to those for Allendale Floodplain Soil. Disposal and/or treatment are similar to those used for Allendale Pond and Lyman Mill Pond sediment, as described above. These remedial measures will mitigate the current and future carcinogenic and/or non-carcinogenic risks from consumption of contaminated fish and/or incidental ingestion of/dermal contact with contaminated sediment/floodplain soil to recreational and residential users by removing sediment from Lyman Mill stream and a portion of the floodplain soil. The thin layer cap will reduce exposure and aid in the natural recovery of remaining contaminated soil that presents an unacceptable risk and as well as reduce the contaminant levels in fish. In addition, excavation of sediment/floodplain soil will reduce the risks to fish and wildlife related to bioaccumulation hazards associated with prey consumption and direct contact with contaminated sediments/floodplain soil and will prevent further migration of contaminants.

69. The following remedial components are also required by the ROD:

- a. Mitigation, preservation, restoration of and/or compensation for wetlands and floodplains impacted by remedial activities
- b. The implementation, monitoring and enforcement of institutional controls, including but not limited to land use controls, to permanently prohibit future excavation, restrict access to

buried utilities, prevent the construction of buildings with pilings or basements or any other disturbance of the cap or other remedial components in the Source Area; permanently restrict the use of groundwater at the Source Area; permanently prevent excavation/construction or other activities that could damage the upland CDF; temporarily prevent excavation or other activities that could damage the thin-layer soil cover and Allendale Dam; temporarily restrict recreational access in the Oxbow wetland; and temporarily restrict fish consumption to prevent exposure to contamination.

c. Implementation of operation and maintenance requirements to protect the RCRA C cap and upland CDF, remedial equipment, controls, and other remedial measures

d. Long-term monitoring of groundwater, surface water, sediment, biota, and soil, and periodic Five-Year Reviews of the remedy to ensure the remedy functions as intended and is protective of human health and the environment in the long term.

G. Identification of Respondents

70. Respondent Black & Decker, Inc. is a Delaware corporation, with its principal place of business in Maryland. On February 27, 2002, Emhart filed a Certificate of Dissolution with the State of Connecticut, and thereafter in 2002 transferred assets worth approximately \$716 million to its sole shareholder, Black & Decker, Inc.

71. Respondent Emhart Industries, Inc. ("Emhart") is a Connecticut corporation with its principal place of business in Towson, Maryland.

72. Respondents are successors to the liability of several chemical companies which operated at the Site from approximately 1943 to the early 1970s. Hazardous substances, including some or all of those described in this Section, were disposed of at the Site during these chemical companies' years of operation of businesses at the Site. Respondents are jointly and severally liable under CERCLA for response costs incurred and to be incurred at the Site.

73. Respondents or their predecessors sent drums to NECC containing materials that included hazardous substances similar to those found at the Site. Respondents are either directly liable or successors to the liability of other persons for arranging for disposal or treatment, or arranging with a transporter for the transport for disposal or treatment, of hazardous substances at the Site. Respondents are jointly and severally liable under CERCLA for response costs incurred and to be incurred at the Site.

IV. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, and the administrative record, EPA has determined that:

74. The Centredale Manor Restoration Project Superfund Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

75. Each Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

76. Each Respondent is a "liable party" as defined in Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is subject to this Order under Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

77. The substances listed in Paragraphs 46 through 60 are found at the Site and are “hazardous substances” as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
78. These hazardous substances have been and continue to be released from the Site into the soil, groundwater, surface water, and/or sediment.
79. The disposal and migration of hazardous substances from the Site and potential for future migration of hazardous substances from the Site are a “release” as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), and are “actual releases” as the term “actual...release” is used in Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
80. The potential for future migration of hazardous substances from the Site into the environment is a “threatened release” as that term is used in Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
81. The actual and threatened release of one or more hazardous substances from the facility may present an imminent and substantial endangerment to the public health or welfare or the environment. The overall factual basis for this imminent and substantial endangerment is contained in Paragraphs 3 through 34 and 46 through 65, and supported by documents maintained in the Administrative Record.
82. The actions required by this Order are necessary to protect the public health, welfare, or the environment, and if carried out in compliance with the terms of this Order and SOW will be consistent with CERCLA and the NCP.
83. In the ongoing litigation involving Emhart/B&D, *Emhart Indus., Inc. v. U.S. Dep’t of the Air Force*, Civ. Act. No. 11-023-S (D.R.I.), the Court in its Seventh Revised Case Management Order specifically permits EPA to issue administrative orders, consistent with EPA’s authority under CERCLA which it retains regardless of any litigation involving private parties or the United States.

V. NOTICE TO THE STATE

84. Prior to issuing this Order, EPA has consulted with State of Rhode Island and has provided written notice that EPA would be issuing this Order.

VI. ORDER

85. Based on the foregoing, Respondents are hereby ORDERED, jointly and severally, to comply with the following provisions, including but not limited to all attachments to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines in this Order, attached to this Order, or incorporated by reference into this Order.

VII. NOTICE OF INTENT TO COMPLY

86. Each Respondent shall provide, not later than ten (10) days after the effective date of this Order, written notice to EPA’s Remedial Project Manager (“RPM”) stating whether it will comply with the terms of this Order. If each Respondent does not unequivocally commit to perform the RD, RA and O&M as provided by this Order, it shall be deemed to have violated this Order and/or to have failed or refused to comply with this Order. Each Respondent’s written notice, if it does not unequivocally express its intent

to fully comply with this Order, shall describe the factual and legal basis for any "sufficient cause" defenses asserted by Respondent under Sections 106(b) and 107(c)(3) of CERCLA upon which it intends to rely to justify its failure to comply. The absence of a response by EPA to Respondent's notice required by this Paragraph shall not be deemed to be acceptance of Respondent's assertions.

VIII. PARTIES BOUND

87. This Order shall apply to and be binding upon Respondents identified in Paragraphs 70 and 71 and their directors, officers, employees, agents, successors, and assignees. Respondents are jointly and severally responsible for carrying out all activities required by this Order. No change in the ownership, corporate status, or other control of Respondents shall alter any of Respondents' responsibilities under this Order.

88. Each Respondent shall provide a copy of this Order to any prospective owners or successors before a controlling interest in Respondent's assets, property rights, or stock are transferred to the prospective owner or successor. Respondents shall provide a copy of this Order to each Contractor, Subcontractor, laboratory, or consultant retained to perform any Work under this Order, within five (5) days after the effective date of this Order or on the date such services are retained, whichever date occurs later. Respondents shall also provide a copy of this Order to each person representing Respondents with respect to the Site or the Work and shall condition all contracts and subcontracts entered into hereunder upon performance of the Work in conformity with the terms of this Order. With regard to the activities undertaken pursuant to this Order, each Contractor and Subcontractor shall be deemed to be related by contract to the Respondents within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Order and for ensuring that its Contractors, Subcontractors, and agents comply with this Order, and perform any Work in accordance with this Order.

IX. INCORPORATION OF DOCUMENTS

89. All appendices and attachments to this Order, and subsequent modifications to such appendices and attachments, are incorporated into this Order and are enforceable under it. Any and all other plans, specifications, schedules, and other documents required by the terms of this Order (including its appendices and attachments), and subsequent modifications to such plans, specifications, schedules, and other documents shall be incorporated herein and enforceable hereunder.

X. WORK TO BE PERFORMED

90. Respondents shall finance and perform, at a minimum and as expeditiously as possible, the Work specified in the Order and the SOW (Appendix 1) attached to this Order, consistent with the ROD. All activities required by this Order shall be conducted in accordance with CERCLA, the NCP, EPA policies and procedures as amended, and the SOW. EPA, at its discretion, may elect to perform some of the actions identified in the ROD and the SOW.

91. The Work performed by Respondents pursuant to this Order shall, at a minimum, achieve the Performance Standards.

92. Notwithstanding any action by EPA, Respondents remain fully responsible for achievement of the Performance Standards. Nothing in this Order, or in plans that are to be submitted by Respondents and that may be or have been approved by EPA, shall be deemed to constitute a warranty or representation of any kind by EPA that full performance of the Remedial Design, Remedial Action, or Operation and Maintenance will achieve the Performance Standards. Respondents' compliance with such plans approved by EPA does not foreclose EPA from seeking additional Work to achieve the applicable Performance Standards.

93. EPA may modify the SOW if such modification is determined by EPA to be necessary to attain the Performance Standards set forth therein, or for the protection of public health or welfare or the environment. Upon written consent of the Director of the Office of Site Remediation and Restoration, EPA Region 1, such modification to the SOW shall become enforceable under this Order.

XI. FAILURE TO ATTAIN PERFORMANCE STANDARDS

94. In the event that EPA determines that additional response activities are necessary to meet applicable Performance Standards, EPA may so inform Respondents and identify the additional response actions as necessary. Unless otherwise stated by EPA, within thirty (30) days of receipt of notice from EPA that additional response activities are necessary to meet any applicable Performance Standards, Respondents shall submit for approval by EPA a work plan for the additional response activities. The plan shall conform to the applicable requirements of Sections X (Work to be Performed) and XV (Compliance with Applicable Laws) of this Order and SOW. Upon EPA's approval of the plan pursuant to Section 7 (Deliverables) of the SOW, Respondents shall implement the plan for additional response activities in accordance with the provisions and schedule contained therein.

XII. EPA PERIODIC REVIEW

95. Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review the Site to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Until such time as EPA certifies completion of the Work, Respondents shall conduct the requisite studies, investigations, or other response actions as determined necessary by EPA in order to permit EPA to conduct the review under Section 121(c) of CERCLA. As a result of any review performed under this Paragraph, Respondents may be required to perform additional Work or to modify Work previously performed.

XIII. ADDITIONAL RESPONSE ACTIONS

96. EPA may determine that in addition to the Work identified in this Order and attachments to this Order, additional response activities may be necessary to protect human health and the environment. If EPA determines that additional response activities are necessary, EPA may require Respondents to submit a work plan for additional response activities. EPA may also require Respondents to modify any plan, design, or other deliverable required by this Order, including any approved modifications.

97. Unless otherwise directed by EPA, within thirty (30) days after receiving EPA's notice that additional response activities are required pursuant to this Section, Respondents shall submit a work plan for the response activities to EPA for review and approval. Upon approval by EPA, the work plan is incorporated into this Order as a requirement of this Order and shall be an enforceable part of this Order.

Upon approval of the work plan by EPA, Respondents shall implement the work plan according to the standards, specifications, and schedule in the approved work plan. Respondents shall notify EPA of its intent to perform such additional response activities within seven (7) days after receipt of EPA's request for additional response activities.

XIV. ENDANGERMENT AND EMERGENCY RESPONSE

98. In the event of any action or occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify EPA's RPM. If EPA's RPM is not available, Respondents shall notify the Emergency Planning and Response Branch, Region 1, United States Environmental Protection Agency, (888) 372-7341; the National Response Center, (800) 424-8802; and the State by contacting Louis R. Maccarone, II, at (401) 222-2797. Respondents shall take such action in consultation with EPA's RPM and in accordance with all applicable provisions of this Order, including but not limited to the Health and Safety Plan developed pursuant to the SOW. To the extent that the site-specific Health and Safety Plan does not cover the particular situation, Respondents shall develop and submit a response plan to EPA within ten (10) days. The provisions of Section 7 (Deliverables) of the SOW apply to the submission of any such response plan, except that the time period for resubmission after EPA disapproval shall be five (5) days unless extended by EPA. In the event that Respondents fail to take appropriate response action as required by this Section, and EPA takes that action instead, EPA reserves the right to pursue cost recovery.

99. Nothing in the immediately preceding Paragraph shall be deemed to limit any authority of the United States: a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of hazardous substances on, at, or from the Site; or b) to direct or order such action, or seek an order from a court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XV. COMPLIANCE WITH APPLICABLE LAWS

100. All activities by Respondents pursuant to this Order shall be performed in accordance with the requirements of all Federal and State laws and regulations. EPA has determined that the activities contemplated by this Order are consistent with the National Contingency Plan ("NCP").

101. Except as provided in Section 121(e) of CERCLA and the NCP, no permit shall be required for any portion of the Work conducted entirely on-site. Where any portion of the Work requires a Federal or State permit or approval, Respondents shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

102. This Order is not, and shall not be construed to be, a permit issued pursuant to any Federal or State statute or regulation.

103. All materials removed from the Site shall be disposed of or treated at a facility approved by EPA's RPM and in accordance with the requirements in the SOW and with all other applicable Federal, state, and local requirements. The Work performed by Respondents pursuant to this Order must, at a

minimum, satisfy all applicable or relevant and appropriate Federal and State standards, requirements, criteria, or limitations as specified in the ROD, and as required under Section 121(d) of CERCLA.

104. All remedial activities must meet or attain all location, chemical, and action specific applicable or relevant and appropriate Federal and State standards, requirements, criteria and limitations (“ARARs”) identified in the ROD, the SOW, and by EPA prior to notification of completion of Work, and must attain all Performance Standards identified in the ROD, the SOW, and by EPA prior to notification of completion of Work.

105. Respondents shall include in all contracts or subcontracts entered into for Work performed under this Order, provisions stating that such Contractors or Subcontractors, including their agents and employees, shall perform all activities required by such contracts or subcontracts in compliance with all applicable laws and regulations.

XVI. REMEDIAL PROJECT MANAGER

106. EPA’s Remedial Project Manager (“RPM”) for the Work under this Order is Anna Krasko, who shall have the authority to be on the Site at all times, including when Work is being undertaken pursuant to this Order. Contact information for EPA’s RPM is provided in Section XX of this Order (Notifications and Submittals). EPA may also designate an Alternate RPM, who shall also have the authority to be on the Site at all times, including when Work is being undertaken pursuant to this Order.

107. EPA has the unreviewable right to change its RPM and Alternate RPM. If EPA changes its RPM or Alternate RPM, EPA will inform Respondents in writing of the name, address, email address, telephone number, and fax number of the new RPM or Alternate RPM.

108. EPA’s RPM and Alternate RPM shall have the authority lawfully vested in a Remedial Project Manager and On-Scene Coordinator by the National Contingency Plan, 40 C.F.R. Part 300, or any similar provisions in future amendments or revisions to the NCP. EPA’s RPM and Alternate RPM shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Order, and to take any necessary response action.

109. The absence of the RPM or Alternate RPM from the Site shall not be cause for stoppage of Work.

110. The employees, agents, consultants, contractors, and authorized representatives of EPA shall also have the authority to be on the Site at all times when the Work is being performed and to engage in activities relating to enforcement of this Order.

XVII. ACCESS AND INSTITUTIONAL CONTROLS

111. Access, Land/Water Use Restrictions, Fee Simple Grants. If any real property is subject to or affected by the Work, is where access or land/water use restrictions are needed to implement this Order, or is where access or land/water use restrictions are requested by EPA, in accordance with the remedy selected in the ROD and with the SOW, Respondents shall to the extent such properties are known use best efforts to secure from persons other than Respondents, if such property is owned in whole or in part by such persons, or Respondents shall provide, as appropriate, if such property is owned in whole or in part by Respondents, the following:

a. Agreements to provide access thereto for Respondents and Respondents' authorized representatives, Contractors, and Subcontractors, and also for the United States, the State, and their representatives, including EPA, RIDEM, their employees, agents, consultants, contractors (including EPA Contractors and EPA Subcontractors), and authorized representatives (hereinafter in this Section referred to collectively as "the United States and the State"), within sixty (60) days of the effective date of this Order or sixty (60) days after such property has been identified, for the purpose of conducting any activity related to this Order, including the Work. Such agreements, which shall be in a form acceptable to EPA, shall also specify that Respondents are not the United States' or the State's representatives with respect to liability associated with Site activities. Copies of such signed agreements shall be provided to EPA prior to Respondents' initiation of field activities. If access agreements are not obtained within the time referenced above, Respondents shall immediately notify EPA of its failure to obtain access. Access for the United States and the State shall also allow the United States and the State to:

- i. Oversee and monitor the Work;
- ii. Verify any data or information submitted to the United States;
- iii. Conduct investigations relating to contamination;
- iv. Obtain samples;
- v. Use a camera, sound recording device or other documentary type equipment;
- vi. Assess the need for, plan or implement response actions;
- vii. Assess implementation of quality assurance and quality control practices as defined in the QAPPs approved by EPA;
- viii. Inspect and copy records, operating logs, contracts, or other documents maintained or generated by Respondents or its authorized representatives, Contractors or Subcontractors, consistent with Section XVIII (Access to Information) of this Order;
- ix. Assess Respondents' compliance with this Order; and
- x. Determine whether any property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Order;

b. Agreements, enforceable by Respondents and the United States and the State, to abide by the obligations and restrictions required by the remedy selected in the ROD and by the SOW, or that are otherwise necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Order.

c. For property addressed by the remedy selected in the ROD where access and/or land/water use restrictions are requested by EPA, or such other property where access and/or land/water use restrictions are needed to implement this Order, if EPA determines that such access rights and/or restrictions should be in the form of easements running with the land, the execution and recordation in the appropriate land evidence records office, as applicable, of an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Order, including but not limited to the activities listed above in this Paragraph 111.a, and/or (ii) grants the right to enforce the land/water use restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Order. The access rights shall be granted to (i) the United States, on behalf of EPA, and its representatives (for the duration of the

remediation); (ii) the State and its representatives; (iii) Respondents and their representatives; and (iv) other parties as directed by EPA. The rights to enforce land/water use restrictions shall be granted to (i) the State and its representatives; (ii) Respondents and their representatives; and (iii) other parties as directed by EPA, with the United States, on behalf of EPA, and its representatives, as a third-party beneficiary to enforce the restrictions. Such grants shall be fully assignable, in whole or in part. Respondents shall, within forty-five (45) days of the date of the receipt of written notice from EPA, of EPA's determination that such easements, as may be specified in such notice, are required, submit to EPA for review and approval with respect to such property:

- i. A draft easement including legal descriptions of the subject property (and any separately restricted areas therein for land/water use restrictions), based on the survey plans described below, that is enforceable under the laws of the State of Rhode Island;
- ii. A survey plan in recordable form of the subject property (and a survey plan of any separately restricted areas for land/water use restrictions);
- iii. A current title insurance commitment or some other evidence of title acceptable to EPA, which shows title to the land described in the easement to be free and clear of all prior liens and encumbrances (except when EPA waives the release or subordination of such prior liens or encumbrances, or when, despite best efforts, Respondents are unable to obtain release or subordination of such prior liens or encumbrances);
- iv. Evidence of the authority of signatories to the easement and to any required subordination agreement or discharge of interest in the subject property; and
- v. A certificate of inspection and possession, certifying that no parties currently have use or have rights to the property through an unrecorded easement, lease or otherwise that creates an encumbrance on the property.

Within fifteen (15) days of EPA's approval and acceptance of the easement and the title evidence, Respondents shall update the title search, reinspect the property and update the certificate of inspection and possession, conduct a tax lien search, and obtain an up-to-date certificate of good standing from the State, and if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the easement and survey plan in the appropriate land evidence records office. Within thirty (30) days of recording the easement and survey plan, Respondents shall provide EPA with title evidence updated through the time of recording and a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded easement and survey plan showing the clerk's recording stamps. Within sixty (60) days of recording the easement and survey plan, or as soon as available thereafter, Respondents shall provide EPA with a copy of the recorded easement and survey plan, evidencing the stamped registry book and page numbers or other, final recording information. If the easement is to be conveyed to the United States, the easement and title evidence (including final title evidence) shall be prepared in accordance with the U.S. Department of Justice Title Standards 2001 (the "Standards"), and approval of the sufficiency of title must be obtained as required by 40 U.S.C. § 3111. The easement and title evidence (including final title evidence) and certificate of title or equivalent shall satisfy any Rhode Island title standards, requirements, and practices.

- d. For property addressed by the remedy selected in the ROD where access is requested by EPA, or such other property where access is needed to implement the Work required by this

Order, if EPA determines that such access rights should be in the form of fee simple ownership, a deed properly executed and recorded in the appropriate land evidence records office, as applicable. Respondents shall, within forty-five (45) days of the date of the receipt of written notice from EPA of EPA's determination that such fee simple ownership of property, as may be specified in such notice, is required, submit to EPA for review and approval with respect to such property:

- i. A draft deed to a grantee designated by EPA, which includes legal descriptions of the subject property and any separately restricted areas therein, based on the survey plans described below, that is enforceable under the laws of the State of Rhode Island;
- ii. A survey plan in recordable form of the subject property;
- iii. A current title insurance commitment or some other evidence of title acceptable to EPA, which shows title to the land described in the deed to be free and clear of all prior liens and encumbrances (except when EPA waives the release or subordination of such prior liens or encumbrances, or when, despite best efforts, Respondents are unable to obtain release or subordination of such prior liens or encumbrances);
- iv. Evidence of the authority of signatories to the deed and to any required subordination agreement or discharge of interest in the subject property; and
- v. A certificate of inspection and possession, certifying that no parties currently have use or have rights to the property through an unrecorded easement, lease or otherwise that creates an encumbrance on the property.

Within fifteen (15) days of EPA's approval and acceptance of the deed and the title evidence, Respondents shall update the title search, reinspect the property and update the certificate of inspection and possession, conduct a tax lien search, and obtain an up to date certificate of good standing from the State, and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the deed and survey plan with the Registry of Deeds or other appropriate office. Within thirty (30) days of recording the warranty and survey plan, Respondents shall provide EPA with title evidence updated through the time of recording and a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded deed and survey plan showing the clerk's recording stamps. Within sixty (60) days of recording the deed and survey plan, or as soon as available thereafter, Respondents shall provide EPA with a copy of the recorded deed and survey plan (and sketch plan, if applicable), evidencing the stamped registry book and page numbers or other, final recording information. The deed and title evidence (including final title evidence) shall be prepared in accordance with the Standards, and approval of the sufficiency of title must be obtained as required by 40 U.S.C. § 3111. The deed and title evidence (including final title evidence) and certificate of title or equivalent shall satisfy Rhode Island title standards, requirements, and practices.

112. Other Institutional Controls. Based on studies and evaluations to be performed pursuant to the SOW, and in accordance with the ROD, EPA may determine that forms of institutional controls other than the agreements and easements described above are required. If EPA requests that land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls be imposed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Respondents shall take such actions as needed to implement such

governmental controls and/or cooperate with EPA's and the State's efforts to secure such governmental controls, as directed in writing by EPA. If EPA determines, in accordance with the SOW, that other forms of institutional controls (*e.g.*, educational and medical outreach materials, land use controls, and municipal zoning controls) should be adopted to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith on property owned or controlled by persons other than the Respondents, Respondents shall use best efforts to implement such other types of controls and/or cooperate with EPA's and the State's efforts to secure such controls, as directed in writing by EPA.

113. For purposes of this Section, "best efforts" includes the payment of reasonable sums of money in consideration of access, access easements, land use restrictions, and/or restrictive easements, fee simple ownership, and/or an agreement to release or subordinate a prior lien or encumbrance. If (a) any access agreements required by Paragraph 111.a are not obtained within thirty (30) days of the effective date of this Order, or if any land use restriction agreements required by Paragraph 111.b. of this Order are not obtained within forty-five (45) days of the date of the receipt of written notice from EPA of EPA's determination that such land use restriction agreements, as may be specified in such notice, are required, or (b) any access easements or restrictive easements required by Paragraph 111.c of this Order are not submitted to EPA within forty-five (45) days of the date of the receipt of written notice from EPA of EPA's determination that such easements, as may be specified in such notice, are required, or (c) any warranty deeds required by Paragraph 111.d of this Order are not submitted to EPA within forty-five (45) days of the date of the receipt of written notice from EPA of EPA's determination that such fee ownerships of properties, as may be specified in such notice, are required, or (d) Respondents are unable to obtain an agreement pursuant to Paragraphs 111.c.iii or 111.d.iii of this Order from the holder of a prior lien or encumbrance to release such lien or encumbrance or to subordinate such lien or encumbrance to the easement or warranty deed being created pursuant to this Order within forty-five (45) days of the date of the receipt of written notice from EPA of EPA's determination that such easements or fee ownerships of properties, as may be specified in such notice, are required, or (e) Respondents are unable to implement other types of institutional controls and/or cooperate with EPA's and the State's efforts to secure such controls as required by Paragraph 112 within forty-five (45) days of the date of receipt of written notice from EPA of EPA's determination that such other institutional controls are required, Respondents shall promptly notify the United States in writing, and shall include in that notification a summary of the steps that Respondents have taken to attempt to comply with Paragraphs 111 and 112 of this Order.

114. If Respondents cannot obtain the necessary access, in the form of an access agreement, easement, or fee simple ownership, after exercising best efforts, subject to the United States' non-reviewable discretion, EPA may use its legal authorities to obtain access for the Respondents or may perform those response actions at the property in question. If EPA designates Respondents as EPA's authorized representative under Section 104(e) of CERCLA for access, Respondents shall save and hold harmless the United States for any and all claims or causes of action or other causes of action arising from or on account of acts or omissions of Respondents, their officers, directors, employees, agents, Contractors, Subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Order. If EPA performs those response actions, Respondents shall perform all other activities not requiring access to that property, EPA reserves the right to seek reimbursement from Respondents for the Response Costs incurred in performing the response actions. Respondents shall integrate the results of any such tasks undertaken by EPA into its reports and deliverables. EPA reserves the right to seek payment from Respondents for all Response Costs, including cost of attorneys' time, incurred by the United States in obtaining access for Respondents, as well as in obtaining land use restrictions, restrictive easements, fee simple ownership, and agreements to release or subordinate a prior lien or encumbrance.

115. Lack of access shall not excuse or justify failure to perform any activity or to meet any deadline not requiring or directly dependent upon such access.

116. Notwithstanding any provision of this Order, the United States retains all of its access authorities and rights under CERCLA and any other applicable statutes and regulations.

XVIII. ACCESS TO INFORMATION

117. Respondents shall provide to EPA and the State, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as "Records") within Respondents' possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Order, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Work. Respondents shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

118. Privileged and Protected Claims.

a. Respondents may assert that all or part of a Record requested by EPA and the State is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondents comply with Paragraph 118.b, and except as provided in Paragraph 118.c.

b. If Respondents assert a claim of privilege or protection, they shall provide EPA and the State with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondents shall provide the Record to EPA and the State in redacted form to mask the privileged or protected portion only. Respondents shall retain all Records that they claim to be privileged or protected until EPA and the State have had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in the Respondents' favor.

c. Respondents may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Site or related to the Site (e.g. upland CDF); or (2) the portion of any Record that Respondents are required to create or generate pursuant to this Order.

119. Business Confidential Claims. Respondents may assert that all or part of a Record provided to EPA and the State under this Section or Section XIX (Retention of Records) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Respondents shall segregate and clearly identify all Records or parts thereof submitted under this Order for which Respondents assert business confidentiality claims. Records submitted to EPA determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA and the State, or if EPA has notified Respondents that the Records are not confidential under the

standards of CERCLA Section 104(e)(7) or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondents.

120. Notwithstanding any provision of this Order, EPA and the State retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIX. RETENTION OF RECORDS

121. Until ten (10) years after EPA provides notice pursuant to Section 6.8 (Certification of Completion of the Work) of the SOW, Respondents shall preserve and retain all records and documents in their possession or control, including the documents in the possession or control of their Contractors, Subcontractors and agents on and after the effective date of this Order that relate in any manner to the Site. At the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) days prior to the destruction of any such records or documents, and upon request by the United States, Respondents shall deliver any such records or documents to EPA.

122. Until ten (10) years after EPA provides notice pursuant to Section 6.8 (Certification of Completion of the Work) of the SOW, Respondents shall preserve, and shall instruct their Contractors, Subcontractors and agents to preserve, all documents, records, and information of whatever kind, nature, or description relating to the performance of the Work. Upon the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) days prior to the destruction of any such records, documents or information, and, upon request of the United States, Respondents shall deliver all such documents, records, and information to EPA.

123. Within thirty (30) days after the effective date of this Order, each Respondent shall submit a written certification to EPA's RPM that it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any records, documents, or other information relating to their potential liability with regard to the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site. Respondents shall not dispose of any such documents without prior approval by EPA. Respondents shall, upon EPA's request and at no cost to EPA, deliver the documents or copies of the documents to EPA. Any Respondent unable to so certify shall submit a modified certification that explains in detail why it is unable to certify in full with regard to all Records.

124. All data, factual information, or documents submitted to EPA by or on behalf of Respondents may be made available for public inspection unless Respondents demonstrate that the data, factual information, or documents satisfy the business confidentiality requirements of 42 U.S.C. § 9604(e)(7)(E) and (F).

XX. NOTIFICATIONS AND SUBMITTALS

125. Except as otherwise provided in the SOW, all notifications, written correspondence and submittals to EPA required under this Order shall be directed to EPA's Remedial Project Manager unless EPA notifies Respondents' Project Coordinator in writing of a change. All notices and notifications under this Order and SOW must be in writing unless otherwise provided. EPA's Remedial Project Manager is:

Anna Krasko
US EPA, 5 Post Office Square, Suite 100
Mailcode OSRR07-1
Boston, MA 02109
Telephone: (617) 918-1232
Facsimile: (617) 918-0232
Email: krasko.anna@epa.gov

XXI. DELAY IN PERFORMANCE

126. Any delay in performance of this Order that, in EPA's judgment, is not properly justified by Respondents under the terms of this Section shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Order.

127. Respondents shall notify EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to EPA's RPM within twenty-four (24) hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within five (5) business days after notifying EPA by telephone, Respondents shall provide written notification fully describing the nature of the delay, any justification for delay, any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Order, the measures planned and taken to minimize the delay, and a schedule for implementing the measures that will be taken to mitigate the effect of the delay. Increased costs or expenses associated with implementation of the activities called for in this Order are not a justification for any delay in performance.

XXII. FINANCIAL ASSURANCE

128. Respondents shall demonstrate their ability to complete the Work required by this Order and to pay all claims that arise from the performance of the Work by obtaining and presenting to EPA financial assurance for the benefit of EPA in an amount no less than \$104,000,000 (hereinafter "Estimated Cost of the Work") that must be satisfactory in form and substance to EPA. The financial assurance shall be in the form of one or more of the following mechanisms (provided that, if Respondents intend to use multiple mechanisms, such multiple mechanisms shall be limited to surety bonds, letters of credit, trust funds, and insurance policies).

- a. A surety bond that provides EPA with acceptable rights as a beneficiary thereof unconditionally guaranteeing payment and/or performance of the Work and that is issued by a surety company among those listed as acceptable sureties on Federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;
- b. One or more irrevocable letters of credit, payable to or at the direction of EPA, that is issued by one or more financial institution(s) (i) that has the authority to issue letters of credit and (ii) whose letter-of-credit operations are regulated and examined by a U.S. Federal or State agency;
- c. A trust fund established for the benefit of EPA that is administered by a trustee (i) that has the authority to act as a trustee, (ii) whose trust operations are regulated and examined by a U.S. Federal or State agency, and that is acceptable in all respects to EPA;

d. A policy of insurance that ensures the payment and/or performance of the Work which (i) provides EPA with acceptable rights as a beneficiary thereof; and (ii) is issued by an insurance carrier (a) that has the authority to issue insurance policies in the applicable jurisdiction(s), (b) whose insurance operations are regulated and examined by a State agency, and (c) that is acceptable in all respects to EPA;

e. A demonstration by Respondents that they meet the financial test criteria of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work, provided that all other requirements of 40 C.F.R. § 264.143(f) are satisfied; or

f. A written guarantee to fund or perform the Work executed in favor of EPA by one or more of the following: (i) a direct or indirect parent company of a Respondent, or (ii) a company that has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with a Respondent; provided, however, that any company providing such a guarantee must demonstrate to the satisfaction of EPA that it satisfies the financial test requirements of 40 C.F.R. § 264.143(f) with respect to the Estimated Cost of the Work that it proposes to guarantee hereunder.

129. Within thirty (30) days after approval by EPA of the Remedial Design Work Plan for the remedy, Respondents shall submit for EPA approval the selection of financial assurance mechanism(s) identified in Paragraph 128.

130. Within thirty (30) days after receiving a written decision from EPA approving the selected financial assurance mechanism(s), Respondents shall execute or otherwise finalize all instruments or other documents required to make the selected financial assurance mechanism legally binding and fully effective. Within ten (10) days thereafter, Respondents shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance mechanism(s) legally binding to EPA in accordance with Section XX of this Order (Notifications and Submittals).

131. If Respondents have selected, and EPA has approved, a financial assurance mechanism for completion of the Work by means of a demonstration or guarantee pursuant to Paragraphs 128.e and 128.f, above, Respondents shall also comply with other relevant requirements of 40 C.F.R. § 264.143(f), 40 C.F.R. § 264.151(f), and 40 C.F.R. § 264.151(h)(1) relating to these methods unless otherwise provided in this Order, including but not limited to: (a) the initial submission of required financial reports and statements from the relevant entity's chief financial officer and independent certified public accountant; (b) the annual re-submission of such reports and statements within ninety (90) days after the close of each such entity's fiscal year; and (c) the notification of EPA within ninety (90) days after the close of any fiscal year in which such entity no longer satisfies the financial test requirements set forth at 40 C.F.R. § 264.143(f)(1). For purposes of the financial assurance mechanisms specified in this Section XXII, references in 40 C.F.R. Part 264, Subpart H, to "closure," "post-closure," and "plugging and abandonment" shall be deemed to refer to the Work required under this Order, and the terms "current closure cost estimate," "current post-closure cost estimate," and "current plugging and abandonment cost estimate" shall be deemed to refer to the Estimated Cost of the Work.

132. Respondents shall diligently monitor the adequacy of the financial assurance. In the event that EPA determines at any time that a financial assurance mechanism provided by Respondents pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other reason, or in the event that Respondents become aware of information indicating that a financial assurance mechanism provided pursuant to this Section is inadequate or otherwise no longer satisfies the requirements set forth in this Section, whether due to an increase in the estimated cost of completing the Work or for any other

reason, Respondents, within thirty (30) days of receipt of notice of EPA's determination or, as the case may be, within thirty (30) days of Respondents becoming aware of such information, shall obtain and present for EPA approval a proposal for a revised or alternative form of financial assurance mechanism listed in Paragraph 128 of this Order that satisfies all requirements set forth in this Section. In seeking EPA approval for a revised or alternative form of financial assurance mechanism, Respondents shall follow the procedures set forth in Paragraph 135 of this Order. Respondents' inability to post a financial assurance mechanism for completion of the Work shall in no way excuse performance of any other requirements of this Order, including, without limitation, the obligation of Respondents to complete the Work in strict accordance with the terms hereof.

133. EPA's decision to take over the performance of all or any portion(s) of the Work pursuant to Paragraph 149 shall trigger EPA's right to receive the benefit of any financial assurance mechanism(s) provided pursuant to this Section. At such time, EPA shall have the right to enforce performance by the issuer of the relevant financial assurance mechanism and/or immediately access resources guaranteed under any such mechanism, whether in cash or in kind, as needed to continue and complete all or any portion(s) of the Work assumed by EPA. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA for recovery of any costs incurred as a result of EPA's takeover of all or portion(s) of the Work that are not paid for or reimbursed by the financial assurance. In addition, if at any time EPA is notified by the issuer of a financial assurance mechanism that such issuer intends to cancel the financial assurance mechanism it has issued, then, unless Respondents provide a substitute financial assurance mechanism in accordance with this Section no later than thirty (30) days prior to the noticed cancellation date, EPA shall be entitled (as of and after the date that is thirty (30) days prior to the impending cancellation) to draw fully on the funds guaranteed under the then-existing financial assurance

Modification of Amount and/or Form of Financial Assurance.

134. Reduction of Amount of Financial Assurance. If Respondents believe that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 128 above, Respondents may, on any anniversary date of the effective date of this Order, or at any other time agreed to by EPA, petition EPA in writing to request a reduction in the amount of the financial assurance provided pursuant to this Section so that the amount of the financial assurance is equal to the estimated cost of the remaining Work to be performed. Respondents shall submit a written proposal for such reduction to EPA that shall specify, at a minimum, the cost of the remaining Work to be performed and the basis upon which such cost was calculated. In seeking EPA approval for a revised or alternative form of financial assurance, Respondents shall follow the procedures set forth in Paragraph 135 of this Order. If EPA decides to accept such a proposal, EPA shall notify Respondents of such decision in writing. After receiving EPA's written acceptance, Respondents may reduce the amount of the financial assurance in accordance with and to the extent permitted by such written acceptance. No change to the form or terms of any financial assurance provided under this Section, other than a reduction in amount, is authorized except as provided in Paragraphs 128 or 133 of this Order.

135. Change of Form of Financial Assurance. If, after issuance of this Order, Respondents desire to change the form or terms of any financial assurance mechanism provided pursuant to this Section, Respondents may, on any anniversary date of issuance of this Order, or at any other time agreed to by EPA, petition EPA in writing to request a change in the form of the financial assurance mechanism provided hereunder. The submission of such proposed revised or alternative form of financial assurance mechanism shall be as provided in this Paragraph 135 of this Order. Respondents shall submit a written proposal for a revised or alternative form of financial assurance mechanism to EPA which shall specify, at a minimum, the estimated cost of the remaining Work to be performed, the basis upon which such cost was calculated, and the proposed revised form of financial assurance mechanism, including all proposed

instruments or other documents required in order to make the proposed financial assurance mechanism legally binding. The proposed revised or alternative form of financial assurance mechanism must satisfy all requirements set forth or incorporated by reference in this Section. Respondents shall submit such proposed revised or alternative form of financial assurance mechanism to EPA in accordance with Section XX of this Order (Notifications and Submittals). Within ten (10) days after receiving a written decision from EPA approving the proposed revised or alternative financial assurance mechanism, Respondents shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected financial assurance mechanism legally binding in a form substantially identical to the documents submitted to EPA as part of the proposal, and such financial assurance mechanism shall thereupon be fully effective. Respondents shall submit all executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance mechanism legally binding to EPA within thirty (30) days of receiving a written decision approving the proposed revised or alternative financial assurance mechanism in accordance with Section XX of this Order (Notifications and Submittals).

136. Release of Financial Assurance. If Respondents receive written notice from EPA in accordance with Section 6.8 (Certification of Completion of the Work) of the SOW that the Work has been fully and finally completed in accordance with the terms of this Order, or if EPA otherwise so notifies Respondents in writing, Respondents may thereafter release, cancel, or discontinue the financial assurance provided pursuant to this Section. Respondents shall not release, cancel, or discontinue any financial assurance provided pursuant to this Section except as provided in this Paragraph.

XXIII. INSURANCE

137. At least seven (7) days prior to commencing any Work at the Site pursuant to this Order, Respondents shall maintain until the first anniversary after issuance of EPA's certification of completion of the Remedial Action, pursuant to Section 6.7 (Certification of Completion of the RA) of the SOW, commercial general liability insurance with limits of \$50,000,000 for any one occurrence, and automobile liability insurance with limits of \$10,000,000, combined single limit, naming the United States as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Order. In addition, for the duration of this Order, Respondents shall satisfy, or shall ensure that their Contractors or Subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Order. Prior to commencement of the Work under this Order, Respondents shall provide to EPA certificates of such insurance and a copy of each insurance policy. Respondents shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Order. If Respondents demonstrate by evidence satisfactory to EPA that any Contractor or Subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that Contractor or Subcontractor, Respondents need provide only that portion of the insurance described above that is not maintained by the Contractor or Subcontractor.

XXIV. PAYMENT OF RESPONSE COSTS

138. Upon EPA's written demand, Respondents shall pay EPA all Response Costs incurred or to be incurred in connection with this Order. On a periodic basis, EPA will send Respondents a bill requiring payment of all Response Costs incurred by the United States with respect to this Order that includes a

standard Regional itemized cost summary, which includes direct and indirect costs incurred by EPA, its contractors, and the Department of Justice.

139. Respondents shall make all payments within 30 days after receipt of each written demand requiring payment. Payment shall be made to EPA by Fedwire Electronic Funds Transfer (“EFT”) 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 016P and the EPA docket number for this action.

140. At the time of payment, Respondents shall send notice that payment has been made in accordance with Section XX of this Order (Notifications and Submittals), and to the EPA Cincinnati Finance Office by email at acctreceiveable.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 016P and EPA docket number for this action.

141. Interest. In the event that the payments for Response Costs are not made within 30 days after Respondents’ receipt of a written demand requiring payment, Respondents shall pay Interest on the unpaid balance. The Interest on Response Costs shall begin to accrue on the date of the written demand and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents’ failure to make timely payments under this Section. Respondents shall make all payments required by this Paragraph in the manner described in Paragraphs 139 and 140.

XXV. COORDINATION AND COOPERATION

142. In accordance with the SOW, Respondents shall make best efforts to coordinate and cooperate with EPA, the State, the Town of North Providence, the Town of Johnston, other Federal agencies, other parties as required by EPA, and all contractors and representatives of these governmental agencies and other parties, including EPA Contractors and EPA Subcontractors, in the performance of the Work required by this Order.

143. Respondents shall make best efforts to coordinate in the performance of the Work required by this Order by any person not a party to this Order who offers to perform or, in lieu of performance to pay for, in whole or in part, the Work required by this Order. Best efforts to coordinate shall include, at a minimum:

- a. replying in writing within a reasonable period of time to offers to perform or pay for the Work required by this Order;
- b. engaging in good-faith negotiations with any person not a party to this Order who offers to perform or to pay for, the Work required by this Order; and
- c. good-faith consideration of good-faith offers to perform or pay for the Work required by this Order.

144. Within thirty (30) days of an offer by a person not a party to this Order to perform or pay for the Work required by this Order, Respondents shall provide notification of such offer to EPA. On request of EPA and subject to any claims of applicable privilege(s), Respondents shall submit to EPA all documents in its possession, custody, or control relating to (a) any offer to perform or pay for, or (b) the performance of or payment for, the Work required by this Order by Respondents or any non-Respondents to this Order.

XXVI. ENFORCEMENT AND RESERVATIONS

145. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any Response Costs incurred by the United States related to this Order and not reimbursed by Respondents as well as any other response costs. This reservation shall include but not be limited to past costs, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support oversight cost demand, as well as accrued interest as provided in Section 107(a) of CERCLA.

146. Notwithstanding any other provision of this Order, at any time during the response action, EPA may perform its own studies, complete the response action (or any portion of the response action) as provided in CERCLA and the NCP, and seek reimbursement from Respondents for its costs, or seek any other appropriate relief.

147. Nothing in this Order shall preclude EPA from taking any additional enforcement actions including modification of this Order or issuance of additional orders, and/or additional remedial or removal actions as EPA may deem necessary, or from requiring Respondents in the future to perform additional activities pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), or any other applicable law. Respondents shall be liable under CERCLA § 107(a), 42 U.S.C. § 9607(a), for the costs of any such additional actions.

148. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA, and any other applicable statutes or regulations.

149. Respondents shall be subject to civil penalties under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), and the Civil Monetary Penalty Inflation Adjustment Rule, 69 Fed. Reg. 7121, 40 C.F.R. § 19.4, of not more than \$37,500 for each day in which Respondents willfully violate, or fail or refuse to comply with this Order without sufficient cause. In the event of such willful violation, or failure or refusal to comply, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Order pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606. If EPA elects to take over the performance of all or any portion(s) of the Work pursuant to this provision, EPA shall have the right to enforce performance by the issuer of the relevant financial assurance mechanism and/or immediately access any financial assurance mechanisms provided pursuant to Section XXII (Financial Assurance) of this Order. In addition, failure to properly

provide responses or action under this Order, or any portion hereof, without sufficient cause, may result in liability under Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times, the amount of any costs incurred by the Fund as a result of such failure to take proper action.

150. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action, or demand in law or equity against any person for any liability it may have arising out of or relating in any way to the Site.

XXVII. NO RELEASE OF LIABILITY

151. Nothing herein shall constitute or be construed as a satisfaction or release of any person from liability for any conditions or claims arising as a result of past, current, or future activities at the Site, including but not limited to any and all claims of the United States for Response Costs, other response costs, money damages, and interest under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), or any other applicable statute, or the common law.

152. Notwithstanding compliance with the terms of this Order, Respondents may be required to take such further actions as may be necessary to protect public health or welfare or the environment or as may be otherwise necessary or appropriate under applicable provisions of the law.

XXVIII. NO PREAUTHORIZATION

153. Nothing in this Order shall constitute or be construed as preauthorization of a CERCLA claim within the meaning of CERCLA § 111, 42 U.S.C. § 9611, or Section 300.700(d) of the NCP, 40 C.F.R. § 300.700(d).

XXIX. ADMINISTRATIVE RECORD

154. EPA has established an administrative record that contains the documents that form the basis for the issuance of this Order, including, but not limited to, the documents upon which EPA based the selection of the Remedial Action selected in the ROD. It is available for review at EPA, Region 1, 5 Post Office Square, Boston, Massachusetts.

155. Upon request by EPA, Respondents must submit to EPA all documents related to the performance of the Work for possible inclusion in the administrative record file.

XXX. EFFECTIVE DATE AND COMPUTATION OF TIME

156. This Order shall be effective twenty (20) days after the Order is signed by the Director of the Office of Site Remediation and Restoration. All times for performance of obligations under this Order shall be calculated from that effective date, unless the Order (including the SOW) specifies otherwise.

XXXI. OPPORTUNITY TO CONFER

157. Respondents may, within five (5) days after the date this Order is signed, request a conference with EPA to discuss this Order. Such conference shall be held within fifteen (15) days of the date this Order is signed by the Director of the Office of Site Remediation and Restoration at the EPA Offices at 5 Post Office Square, Suite 100, Boston, MA.

158. The purpose and scope of the conference shall be limited to issues involving the implementation of the response actions required by this Order and the extent to which Respondents intend to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondents a right to seek review of this Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to Respondents' request, Respondents may appear in person or by an attorney or other representative.

159. Requests for a conference must be by telephone followed by written confirmation mailed and emailed that day to:

M. Gretchen Muench, Senior Enforcement Counsel
United States Environmental Protection Agency
5 Post Office Square, Suite 100 (Mail code OES04-4)
Boston, MA 02109
Telephone: (617) 918-1896
Email: muench.gretchen@epa.gov

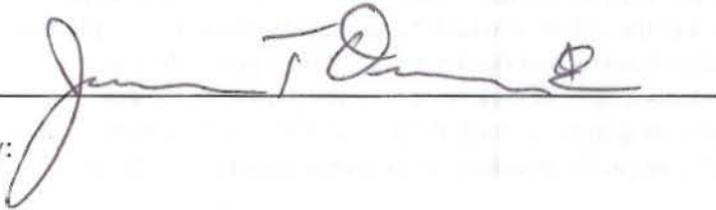
XXXII. SEVERABILITY

160. If a court issues an order that invalidates any provision of this Order or finds that Respondent(s) has (have) sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated or determined to be subject to a sufficient cause defense by the court's order.

XXXIII. UNITED STATES NOT LIABLE

161. The United States, by issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, Contractors, Subcontractors, or consultants in carrying out any action or activity pursuant to this Order. Neither EPA nor the United States may be deemed to be a party to any contract entered into by Respondents or their directors, officers, employees, agents, representatives, successors, assigns, Contractors, Subcontractors, or consultants in carrying out any action or activity pursuant to this Order.

So Ordered, this 10~~th~~ day of June, 2014.

By: 

James T. Owens, III, Director
Office of Site Remediation and Restoration
U.S. Environmental Protection Agency
Region 1