

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

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IN THE MATTER OF THE	:
GOWANUS CANAL SUPERFUND SITE	:
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City of New York,	:
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Respondent	:
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	:
Proceeding under Section 106 of the	:
Comprehensive Environmental Response,	:
Compensation, and Liability Act, as amended,	:
42 U.S.C. § 9606.	:
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INDEX NO.
CERCLA-02-2021-2010

ADMINISTRATIVE ORDER
FOR REMEDIAL ACTION,
REMOVAL ACTION,
AND REMEDIAL DESIGN

I. JURISDICTION AND GENERAL PROVISIONS

1. This administrative order (“Order”) is issued to the above-captioned Respondent by the United States Environmental Protection Agency, Region 2 (“EPA”) and requires Respondent to implement a portion of the remedy selected in EPA’s September 27, 2013 Record of Decision (“ROD”) for the Gowanus Canal Superfund Site (“Site”), Brooklyn, New York. The portion of the Remedial Action (“RA”) to be implemented pursuant to this Order includes the construction and operation of two Combined Sewer Overflow (“CSO”) retention tanks (“CSO Tanks”) to control contaminated solids discharges. The larger of the two CSO Tanks has been designated the “RH-034 Tank,” while the second, smaller tank, has been designated the “OH-007 Tank.” This Order also requires Respondent to timely perform a removal action to construct a bulkhead at property owned by Respondent to provide structural support for the dredging and capping of the Gowanus Canal (“Canal”) adjacent to that property. This bulkhead is also required to provide structural support for the construction of the OH-007 Tank. This Order also includes new schedule requirements for the design of the OH-007 Tank, as a result of Respondent’s noncompliance with the requirements in Administrative Order for Remedial Design (“RD”), Index Number CERCLA-02-2014-2019, issued on May 28, 2014 (the “City RD UAO”). These new RD schedule requirements are set forth in Section V.B. of the Work Schedule attached hereto as Appendix B and are made an enforceable part of this Order. All other requirements of that order remain in full force and effect.

2. This Order is issued to Respondent by EPA pursuant to the authority vested in the President of the United States under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”), 42 U.S.C. § 9606(a), and delegated to the Administrator of EPA on January 23, 1987, by Executive Order No. 12580, 52 Federal Register 2926 (January 29, 1987), and was further delegated to the EPA Regional Administrators by EPA Delegation Nos. 14-14-A and 14-14-B, dated May 11, 1994, and to the EPA Region 2 Director of the Emergency and Remedial Response Division by Regional Delegation R-1200, dated January 19, 2017. Effective April 28, 2019, the Emergency and Remedial Response Division has been renamed the Superfund and Emergency Management Division. All delegations to the Director of the Emergency and Remedial Response Division were conferred upon the Director of the Superfund and Emergency Management Division in a memorandum by the EPA Regional Administrator dated March 27, 2019.

3. EPA has notified the New York State Department of Environmental Conservation (“NYSDEC”) of this Order pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Order applies to and is binding upon Respondent and its successors and assigns.

5. Until EPA notifies Respondent under Paragraph 121 that the Work has been completed, Respondent shall provide a copy of this Order to its employees, contractors, consultants, subcontractors and agents involved in this matter. Respondent is responsible for compliance with this Order and for ensuring that its employees, contractors, consultants, subcontractors and agents comply with this Order.

III. DEFINITIONS

6. Unless otherwise expressly provided herein, terms used in this Order that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or its implementing regulations. Whenever terms listed below are used in this Order or in the appendices attached hereto, or incorporated by reference into this Order, the following definitions shall apply:

- a. “CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675.
- b. “Day” shall mean a calendar day. In computing any period under this Order, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.
- c. “Effective Date” means the date specified in Paragraph 122.
- d. “EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- e. “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, and codified at 40 C.F.R. Part 300, including any amendments thereto.
- f. “Order” shall mean this Unilateral Administrative Order and all appendices attached hereto. In the event of conflict between this Order and any appendix, this Order shall control.
- g. “Paragraph” shall mean a portion of this Order identified by an Arabic numeral.
- h. “Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Site signed on September 27, 2013 by the Director of the Emergency Remedial Response Division, EPA Region 2, including all attachments thereto, attached hereto as Appendix A.
- i. “Remedial Action” or “RA” shall mean the remedial action selected in the ROD.

- j. “Remedial Design” or “RD” shall mean the activities to develop the final plans and specifications for the Remedial Action, including the activities required to be performed by Respondent pursuant to the Administrative Order for Remedial Design (“RD”), Index Number CERCLA-02-2014-2019, issued on May 28, 2014 (the “City RD UAO”) and the Administrative Order on Consent, Index Number CERCLA-02-2016-2003, issued on June 9, 2016, (“Tank AOC”), and the related activities required under this Order.
- k. “Respondent” or the “City” shall mean the City of New York and its governmental or political components and predecessors, including the City of Brooklyn.
- l. “Site” shall mean the Gowanus Canal Superfund Site, an approximately 100-foot wide, 1.8-mile-long canal located in the New York City borough of Brooklyn, Kings County, New York, and also includes any areas which are sources of contamination to the Canal, including any areas where contamination has migrated from the Canal, suitable areas in very close proximity to the contamination which are necessary for implementation of the Work, and any EPA-approved locations selected for the RH-034 Tank and OH-007 Tank.
- m. “United States” shall mean the United States of America.
- n. “Waste Material” shall mean i) any “hazardous substance” under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); ii) any “pollutant or contaminant” under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and iii) any “solid waste” under Section 1004(27) of the Solid Waste Disposal Act, as amended, 42 U.S.C. § 6903(27).
- o. “Work” shall mean all activities Respondent is required to perform under this Order, except those required by Section XIV (Record Retention).

IV. FINDINGS OF FACT AND CONCLUSIONS OF LAW

A. Site Location, Canal Construction, Ownership and Operation

7. The Canal is a brackish, tidal arm of the New York–New Jersey Harbor Estuary, extending for approximately 1.8 miles through Brooklyn, New York. The approximately 100–foot–wide Canal runs southwest from Butler Street to Gowanus Bay and Upper New York Bay. The adjacent waterfront is primarily commercial and industrial, currently including concrete plants, warehouses and parking lots. The Site is near several residential neighborhoods.

8. In 1849, state legislation authorized construction of the Canal by the City of Brooklyn to open the area to barge traffic, flush away sewage, receive storm water and fill the adjacent

lowlands for development. Pursuant to the 1849 legislation, Respondent, successor in interest to the City of Brooklyn, has been the owner and operator of the Canal since its construction. The Canal bottomlands are owned by Respondent.

9. The Canal was constructed by bulkheading and dredging a tidal creek and wetland. Additional fill was utilized to raise the grade of the surrounding land. The authorizing legislation and the initial Canal design had recognized the likelihood that the Canal would be stagnant, creating pollution problems. To prevent this, various flushing solutions were contemplated. However, none were implemented as part of its initial construction.

10. After completion of construction in the 1860s, the Canal quickly became one of the nation's busiest industrial waterways, home to heavy industry including manufactured gas plants ("MGPs"), coal yards, cement makers, soap makers, tanneries, paint and ink factories, machine shops, chemical and asphalt plants, oil refineries and shipyards.

11. Hazardous substances, pollutants and contaminants have entered the Canal via several transport pathways or mechanisms, including spillage during product shipping and handling, direct disposal or discharge, contaminated groundwater discharge, surface water runoff, storm water discharge (including CSOs) and contaminated soil erosion. Because of decades of direct and indirect discharges of hazardous substances generated by industrial and other activity, the Canal became a repository for untreated industrial wastes, raw sewage, and runoff, causing it to become one of New York's most polluted waterways.

12. Respondent is the current owner and operator of the sewer infrastructure that discharges into the Canal. Combined sanitary and storm sewers that discharge to the Canal were constructed at various times to handle the waste generated by industrial, commercial and residential development within the Canal sewershed (i.e., the areal extent of the sewer infrastructure system that discharges to the Canal, an area of approximately 1,758 acres). For facilities adjacent to the Canal, direct discharge pipes were typically constructed.

13. Respondent owns or leases, and/or operates, or its legal predecessor owned or leased, and/or operated, numerous facilities on or near the Canal that are or have been sources of past or present releases of hazardous substances to the Canal. These include, but are not limited to, the Hamilton Asphalt plant, the Hamilton Avenue Marine Waste Transfer Station, the former Hamilton Street incinerator, the Second Avenue Department of Sanitation vehicle storage lot, the former Second Avenue Department of Sanitation garage, the former Smith Street Brooklyn Rapid Transit Power Station, the former Second Avenue Brooklyn Rapid Transit Power House and coal yard, the former 3rd Street Brooklyn Rapid Transit Coal Yard, and the 25th Street pier.

14. The former 1st Street turning basin was utilized to deliver coal via barges to an adjacent electric generating station (the "Power House") originally built to provide power to the former Brooklyn Rapid Transit Authority ("BRT") subway system. The Power House began operations in 1904. During operations, it consumed large quantities of coal, fed from coal piles that

surrounded the building and were located adjacent to the Canal. The 1st Street turning basin was filled in between 1954 and 1966 after the Power House became obsolete and was removed from service. Based on currently available information, Respondent owns the real property for the former 1st Street turning basin, in whole or in part.

15. Respondent owns Thomas Greene Park, a portion of NYSDEC state Superfund site known as the former Fulton Manufactured Gas Plant (“MGP”) Site. The former Fulton MGP Site was operated by the Brooklyn Union Gas Co. (“BUG”) from approximately 1879 until 1929. In 1935, Respondent opened a public playground on the property, prior to completing acquisition in 1938 from BUG. The former Fulton MGP Site is a major source of hazardous substance contamination to the Canal.

16. Since 1975, Respondent has owned Public Place, a large portion of the former Citizen’s Gas Works MGP facility. The Citizen’s Gas Works facility was operated by BUG from approximately 1859 until 1965. This former MGP facility is a major ongoing source of hazardous substance contamination to the Canal. Together with National Grid New York (“National Grid”), the successor to BUG, Respondent is a signatory to a NYSDEC administrative order for the remediation of Public Place under the NYSDEC Brownfields Cleanup Program.

B. Contamination and Early Actions by Respondent

17. The Canal was first declared a public nuisance in 1877 due to the discharge of sanitary and industrial waste, in combination with stagnant water conditions. Subsequent studies and commissions have repeatedly examined methods of addressing the contamination. A series of unsuccessful solutions were implemented by Respondent between 1891 and 1904, including directing additional sewage discharges to the Canal to improve flow.

18. A tunnel was constructed by Respondent (“Flushing Tunnel”) and began operating in 1911 in an effort to address the Canal’s pollution problems. Designed to improve circulation and flush pollutants from the Canal, the Flushing Tunnel consists of a one mile long, 12-foot diameter tunnel stretching from New York Bay near Governors Island to the head of the Canal. Originally using a large ship propeller-type pump system, the Flushing Tunnel could pump water in either direction. The Flushing Tunnel was operated by Respondent with mixed results until the mid-1960s when it fell into disrepair.

19. Periodic infrastructure improvements constructed, owned and operated by Respondent have eliminated dry weather discharges and reduced, but not eliminated, wet weather discharges to the Canal. These include, but are not limited to, the Owls Head Waste Water Treatment Plant (“WWTP”) which was completed in 1952 to serve portions of the Park Slope area, and the Red Hook WWTP, which was completed in 1987 to serve portions of Red Hook. Until 1987, when the Red Hook WWTP came on-line, discharges from outfalls in the Red Hook system, such as RH-034 at the head of the Canal, were continuous, at a rate of at least 15 million gallons per day (“MGD”) in dry weather, and 21 MGD during wet weather. A pump station at Second Avenue

near outfall OH-007 was completed in 1990, eliminating the last area of dry weather discharges along the Canal by pumping sewage to the Owls Head WWTP.

20. Notwithstanding the construction of the WWTPs and the other improvement described in Paragraph 19, above, between about 1952 and 1990, depending on their location relative to those sewer infrastructure improvements, a variety of commercial and industrial facilities located directly adjacent to the Canal discharged untreated industrial and sanitary waste containing hazardous substances directly into the Canal in both dry weather and wet weather conditions due to the lack of infrastructure necessary to divert discharges from the Canal to upgradient sewer lines, and/or through discharges into private direct disposal outfalls. During this period, domestic, commercial and industrial facilities not directly adjacent to the Canal but downgradient of main sewer lines also discharged untreated industrial and sanitary waste into the Canal via CSOs in both dry and wet weather conditions. Domestic, commercial and industrial facilities upgradient of the main sewer lines also discharged untreated industrial and sanitary waste via CSOs into the Canal in wet weather conditions. Wet weather CSO discharges continue to the present.

21. Pursuant to the 1972 federal Clean Water Act (“CWA”), Respondent has been required to prepare multiple plans and reports to address CSO discharges, including a 1983 Gowanus Canal “201 Facilities Plan,” a 1993 “Inner Harbor CSO Facility Planning Project” and a 2001 “Gowanus Facilities Upgrade Plan.” These documents discuss actions that are not primarily designed to address CERCLA hazardous substances released by CSO discharges.

22. The 1983 Gowanus Canal 201 Facilities Plan included upgrading the Gowanus Pump Station located at Red Hook outfall number RH-0034; rehabilitating the “Bond-Lorraine” sewer main; dredging the CSO sediments accumulated at the head of the Canal, turning basins and other areas; rehabilitating and reactivating the Flushing Tunnel; installing a force main within the Flushing Tunnel and, if necessary, dredging the entire Canal to 13 feet below mean low water level. The subsequent plans included similar activities.

23. The Gowanus Pump Station was upgraded in 1985 with new pumps. The pressurized main installed within the Flushing Tunnel was completed in 1989, but failed in 1992, causing failure of the Gowanus Pump Station pumps that had been installed in 1985, which pumps were then replaced once again to revert sewage flow into the under-capacity “Bond-Lorraine” sewer main. The Flushing Tunnel was restarted in 1999 after a partial rehabilitation, but was shut down in 2010 due to equipment problems. No major long-term CSO reductions were realized as a result of the measures described in this paragraph.

C. Respondent’s Ongoing CSO Control Activities

24. In 2005, Respondent entered into a consent order with NYSDEC, DEC Case No. C02-20000107-8 (January 14, 2005) (the “CWA CSO Order”) requiring, with respect to the

Canal, Respondent's preparation of a 2007 Receiving Water Quality Modeling Report and a 2008 Gowanus Canal Waterbody/Watershed Facility Plan ("WWFP").

25. Respondent was required to implement the WWFP, which included by September 2014, installing a replacement force main within the Flushing Tunnel, upgrading the Gowanus Pump Station, rehabilitating and reactivating the Flushing Tunnel, and, by December 2018, dredging the CSO sediment mounds that had accumulated at the head of the Canal. The rehabilitation of the Flushing Tunnel, which was performed, and the planned CSO sediment dredging did not address CSO discharge reductions to the Canal.

26. According to Respondent's 2008 WWFP, wet weather CSO discharges to the Canal occur at an estimated volume of 377 million gallons per year. Respondent projected that the force main and Gowanus Pump Station upgrades, when implemented pursuant to the WWFP, were estimated to reduce this CSO discharge volume by 34%, to 250 million gallons per year. These upgrades do not address CSO discharge reductions to the upper Canal. Respondent's CSO discharge volume estimates and upgrade reductions are based on modelling which utilizes a variety of data, studies, inputs and assumptions, including, for example, annual rainfall data.

27. Respondent's 2008 WWFP also provides as follows:

Dredging would be conducted as an alternative to structural CSO controls such as storage. Bottom water conditions between dredging operations would likely not comply with dissolved oxygen standards and bottom habitat would degrade following each dredging. This technology allows CSO settleable solids to exit the sewer system and settle in the waterbody generally immediately downstream of the outfall, but without regular or periodic dredging, such mounds can extend a thousand feet or more.

2008 WWFP at 7-25. The 2008 WWFP memorializes CSO solids discharge practices that, in effect, result in the Canal being used by Respondent as a settling basin for the management of contaminated sewage solids. Under the CWA CSO Order, Respondent submitted an October 2012 "Evaluation of Possible Measures for CSO Solids Control" that indicates such periodic CSO maintenance dredging could cost up to \$4 million every 5 years. Implementation of the contaminated CSO solids controls called for in the ROD would reduce or eliminate the cost and need for future CWA CSO dredging by Respondent.

28. The CSO sediment dredging requirement under the CWA CSO Order would not have removed the contaminated accumulated CSO sediments at the head of the Canal to the full depth necessary for remedial dredging as specified in the ROD. Respondent had estimated that the CWA CSO sediment dredging, which includes capping the remaining contaminated sediment at a final elevation of 3 feet below mean low water, would cost up to \$20 million. Respondent requested, and NYSDEC approved, a deferral of the CWA CSO Order dredging based on the prospective implementation of the ROD dredging, which commenced on November 16, 2020. As

a result, Respondent has not implemented the CSO sediment dredging that was initially required under the 1983 Gowanus Canal 201 Facilities Plan and was required in every succeeding CWA plan.

29. Following a full-scale rehabilitation by Respondent, the Flushing Tunnel began operating again in 2014. Respondent also completed the force main and Gowanus Pump Station upgrades.

D. Superfund Response Activities at the Site

30. The Site was placed on the National Priorities List pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, on March 2, 2010.

31. In April 2010, EPA entered into separate administrative consent orders with Respondent and National Grid to perform work in support of EPA's remedial investigation/feasibility study ("RI/FS"). An RI report was completed by EPA in January 2011 and an FS report was completed by EPA in December 2011. An FS addendum report was issued by EPA in December 2012, together with a Proposed Plan. The Proposed Plan described the remedial alternatives considered to address the contamination in the Canal and identified the preferred remedy with the rationale for this preference.

32. Sampling results from the RI/FS document the presence of a wide range of hazardous substances in the groundwater, soil, and Canal sediments at the Site. These include polycyclic aromatic hydrocarbons ("PAHs"), polychlorinated biphenyls ("PCBs"), pesticides (such as methoxychlor and DDT), metals (such as barium, cadmium, copper, lead, mercury, nickel and silver), as well as volatile organic compounds ("VOCs") (such as benzene, toluene, ethylbenzene and xylene). The contamination in the sediments extends the entire length of the Canal. The contamination is present in both the sediments that have accumulated above the native sediments (referred to as "soft sediments"), and in the native sediments below the original bed of the Canal. The soft sediment layer ranges in thickness from approximately 1 foot to greater than 20 feet, with an average thickness of about 10 feet. Some of the hazardous substances are constituents of heavily contaminated nonaqueous phase liquid ("NAPL"). For example, total PAH concentrations in surface sediment (defined as the top 6 inches of the soft sediments, where potential exposure is more likely to occur) range up to 8,001,000 micrograms per kilogram ("µg/kg"). PCBs in surface sediment were detected up to 3,400 µg/kg. In the subsurface (*i.e.*, deeper than 6 inches), total PAH concentrations in the soft sediment ranged up to 45,000,000 µg/kg. Total PAH concentrations in the native sediment were detected up to 47,500,000 µg/kg. In the subsurface, total PCB concentrations in the soft sediment were detected up to 50,700 µg/kg. In the native sediments, total PCBs were detected up to 2,610 µg/kg.

33. Sampling by EPA, National Grid, and Respondent document that discharges from CSOs, particularly solids, contain CERCLA hazardous substances, including VOCs, PAHs, PCBs, pesticides and metals. In CSO solids from the four major outfalls (RH-034, RH-035, OH-007 and RH-031), total PAHs levels range from 4 to 185 milligrams per kilogram ("mg/kg"), while

copper and lead levels range from 94 to 2,286 mg/kg and 74 to 2,086 mg/kg, respectively. These are produced by a variety of sources, including but not limited to household and industrial discharges to the sanitary sewers and contaminated stormwater captured by storm drains. In addition, after discharge to the Canal, CSO solids adsorb and concentrate other hazardous substances released to the Canal, further impacting sediment contaminant levels.

34. The storage and handling of coal can result in the releases of hazardous substances, including PAHs and metals. Analytical data obtained during the RI of the former 1st Street turning basin showed the existence of significant contamination in soil and groundwater, including but not limited to, PAHs, metals (lead, arsenic and barium) and pesticides. Prior to filling, contaminated sediments from the Canal would have accumulated in the 1st Street turning basin. Run-off from coal piles at the Power House likely resulted in releases of hazardous substances to the former 1st Street turning basin and the Canal. Borings collected as part of the RI/FS indicate that contaminated sediments within the 1st Street turning basin were left in place when the basin was filled in. In addition, those borings indicate that the fill itself contains waste materials, and also evidence that spills and dumping occurred after the basin was filled in. The former basin is hydraulically connected to the Canal and is an ongoing source of contamination to the Canal.

35. Based on the results of the RI/FS, contamination in the Canal sediments presents an unacceptable ecological and human health risk, primarily due to exposure to PAHs, PCBs, and metals (barium, cadmium, copper, lead, mercury, nickel and silver) in surface water and sediment, and from ingesting fish and crabs from the Canal.

36. PCBs and PAHs have been demonstrated to cause a variety of adverse health effects. PCBs have been shown to cause cancer in test animals. PCBs have also been shown to cause a number of serious noncancer health effects in animals, including effects on the immune system, reproductive system, nervous system and endocrine system. Studies in humans provide supportive evidence for potential carcinogenic and noncarcinogenic effects of PCBs. The PAH compounds found at the Site include, but are not limited to, 2-methylnaphthalene, acenaphthene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene and pyrene. The toxicity of PAHs can vary from being nontoxic to extremely toxic. EPA has classified seven of these PAH compounds present at the Site as probable human carcinogens: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene. PAHs present at the Site known for their carcinogenic, mutagenic and teratogenic properties are benz[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. High prenatal exposure to PAHs is associated with lower IQ and childhood asthma. The Center for Children's Environmental Health reports studies that demonstrate that exposure to PAHs during pregnancy is related to adverse birth outcomes, including low birth weight, premature delivery and heart malformations. Cord blood in cases of prenatal exposure shows DNA damage that has been linked to cancer.

Follow-up studies show increased developmental delays at age three and lower scores on IQ tests and increased behavioral problems at ages six and eight.

37. EPA's ecological risk assessment of the Site determined that PAHs, PCBs and metals in the sediment are toxic to benthic organisms. PAHs were detected in sediment at the highest concentrations relative to their ecological screening benchmarks and represent the greatest Site-related risk to the benthic community. PCBs and seven metals (barium, cadmium, copper, lead, mercury, nickel and silver) were detected at concentrations above their ecological screening benchmarks and at concentrations significantly higher than those detected in reference area sediments; they represent a potential site-related risk to the benthic community. PAHs were found to be a potential risk to aquatic herbivores (represented by the black duck) and mercury was found to be a potential risk to avian omnivores (represented by the heron).

38. Much of the heavy industrial activity along the Canal has ceased, although many upland areas adjacent to the Canal remain zoned as manufacturing districts. Zoning along and near certain portions of the Canal is in the process of transitioning from heavy industrial to light industrial, commercial, and residential uses. Respondent has proposed to rezone large portions of land adjacent to the Canal from commercial/industrial to high-density residential. Formal consideration of this proposal, which was temporarily suspended, is projected to resume in January 2021.

39. The Canal is currently used by some for recreational purposes such as boating, diving, and fishing for consumption. The Canal and New York City harbor are subject to New York State fishing advisories for various ingestion risks, including PCBs. Based on the current and reasonably anticipated future land uses adjacent to and near the Canal, there is high potential for increases in the number of people who live adjacent to or near the Canal, with a corresponding increase in the use of the Canal, thereby increasing the potential exposure from contamination at the Canal.

40. The ROD, issued by EPA on September 27, 2013, selected a response action including, among other things: (1) dredging of the entire column of hazardous substance-contaminated soft sediments which have accumulated above the native sediments in the upper and mid-reaches of the Canal; (2) in-situ stabilization of those native sediments in select areas in the upper- and mid-reaches of the Canal heavily contaminated NAPL; (3) construction of a multilayered cap in the upper and mid-reaches of the Canal to isolate and prevent the migration of PAHs and residual NAPL from native sediments; (4) dredging of the entire soft sediment column in the lower reach of the Canal; (5) construction of a multilayer cap to isolate and prevent the migration of PAHs from native sediments in the lower reach of the Canal; (6) off-Site treatment of the NAPL-impacted sediments dredged from the upper and mid-reaches of the Canal with thermal desorption, followed by beneficial reuse off-Site (e.g., landfill daily cover), if possible; (7) off-Site stabilization of the less contaminated sediments dredged from the lower reach of the Canal and the sediments in the other reaches not impacted by NAPL, followed by beneficial reuse off-Site; (8) excavation and restoration of approximately 475 feet of the filled-in former 1st Street

turning basin; (9) excavation and restoration of the portion of the 5th Street turning basin beginning underneath the 3rd Avenue bridge and extending approximately 25 feet to the east and the installation of a barrier or interception system at the eastern boundary of the excavation; (10) implementation of institutional controls incorporating the existing fish consumption advisories (modified, as needed), as well as other controls to protect the integrity of the cap; (11) periodic maintenance of the cap and long-term monitoring to insure that the remedy continues to function effectively; and (12) CSO controls to significantly reduce overall contaminated solid discharges to the Canal, which include construction of two retention tanks to retain discharges from outfalls RH-034 and OH-007 and implementation of appropriate engineering controls to ensure that hazardous substances and solids from separated stormwater, including from future upland development projects, are not discharged to the Canal.

41. For purposes of the planning and implementation of the ROD, EPA divided the Canal into three Remediation Target Areas (“RTAs”). RTA 1 extends from Butler Street to 3rd Street. RTA 2 extends from 3rd Street to Hamilton Street. RTA 3 extends from Hamilton Street to the mouth of the Canal at 23rd Street.

42. On March 21, 2014, EPA issued an administrative order for Remedial Design, Index Number CERCLA-02-2014-2001 (the “Dredging RD UAO”), to 31 parties requiring the performance of various pre-RD investigations and analyses, the preparation of biddable plans and specifications for the implementation of the remedy selected in EPA’s September 2013 ROD, other than the CSO controls, and the cleanup and restoration of the former 1st Street turning basin.

43. On May 28, 2014, EPA issued the City RD UAO requiring Respondent to prepare the RD for the two CSO retention tanks and for the cleanup and restoration of the City-owned former 1st Street turning basin, as well as Respondent’s coordination and participation in the Dredging RD UAO.

44. On June 6, 2016, EPA issued the Tank AOC. The Tank AOC includes requirements for Respondent to complete the RD for the larger of the two CSO Tanks, RH-034, while the City RD UAO retained the requirements for Respondent to complete the RD for the smaller OH-007 Tank. The Tank AOC, among other things, set a schedule for Respondent to acquire two privately owned parcels located at 242 Nevins Street and 234 Butler Street, as well as a staging area. Following such acquisitions, the Tank AOC requires Respondent to perform response actions to demolish buildings and excavate and properly manage materials within the footprint of the planned location for the RH-034 Tank, to allow for the construction of the RH-034 Tank.

45. Pursuant to the City RD UAO, Respondent performed the RD for the cleanup and restoration of the former 1st Street turning basin. Sampling conducted within the former 1st Street turning basin by the City as part of the RD confirmed the presence of a range of hazardous substances, including naphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, metals

and PCBs. Some or all of the PCBs appear to have been released from the adjacent Power House. The 100% RD for the 1st Street turning basin cleanup and restoration was approved by EPA on June 12, 2019.

46. On April 11, 2019, EPA issued an Administrative Order for Removal Action, Index Number CERCLA-02-2019-2010 (“Bulkhead Removal UAO”), to 28 parties, including Respondent. The Bulkhead Removal UAO required, among other things, the performance of bulkhead and bridge structural support construction and access dredging at the Site in preparation for the RTA 1 dredging and capping. The Bulkhead Removal Order and additional administrative orders issued by EPA to other entities provide for the construction of bulkhead structural support necessary to conduct the RTA 1 dredging and capping.

47. The structural support options available to reinforce bulkhead and bridges at the Canal are limited. Typical reinforcement measures involve the installation of new, deeper sheet piling along the existing structure’s face, resulting in incremental encroachment on the Canal. NYSDEC seeks to limit and mitigate such encroachment when approving such repairs and upgrades along the Canal. In an effort to mitigate such encroachment, EPA’s ROD requires the creation of a wetlands mitigation area for offsetting such encroachment when it cannot be accomplished at the parcel where the structural support is constructed. Such a wetlands mitigation area will be primarily achieved by excavating and restoring the contaminated, filled-in former 1st Street turning basin.

48. A New York City Department of Sanitation salt storage lot at 6th Street (“Salt Lot”) is the EPA-selected location for the OH-007 Tank. The bulkheads at this parcel and the adjacent 2nd Avenue street end, which is the current location of the OH-007 outfall, are severely deteriorated. Pursuant to the City RD UAO, NYCDEP is required to design a bulkhead upgrade at the Salt Lot and the adjacent 2nd Avenue street end. The Bulkhead Removal UAO requires Respondent to submit the bulkhead design for the Salt Lot and 2nd Avenue street end by no later than January 1, 2021. Respondent’s timely construction of the Salt Lot and 2nd Avenue street end bulkheads is necessary to support the dredging and capping of RTA 2 and construction of the OH-007 Tank. Encroachment may occur as a result of Respondent’s construction of the Salt Lot and 2nd Avenue street end bulkheads. Mitigation of any such encroachment will occur at the restored 1st Street turning basin.

49. On January 28, 2020, EPA issued Administrative Order for Remedial Action, Index Number CERCLA-02-2020-2003 (“RTA 1 RA UAO”), to National Grid, Respondent (the City), and four other parties. The RTA 1 RA UAO requires implementation of the dredging and capping portion of the RA for RTA 1. EPA anticipates that implementation of the balance of the RA will be the subject of one or more future enforcement documents. The work required by the Dredging RD UAO, the Bulkhead Removal UAO, and the RTA 1 RA UAO is currently being conducted by various potentially responsible parties, including Respondent.

E. Respondent's Noncompliance with City RD UAO and Tank AOC

50. In 2015, Respondent requested that EPA approve property acquisitions which would delay the timeline for completion of the CSO tanks and increase the projected cost. In response to EPA's expression of significant concerns regarding the extended timing and increased costs, Respondent agreed in the Tank AOC to waive its rights to claim excused delays, or *force majeure*, for several potential events, including for reasons of financial inability to complete the Work or increased cost of performance. Respondent also waived its right to challenge the CSO remedy, including the costs thereof. The Tank AOC recognized that Respondent could be required in the future to perform contaminated CSO solids maintenance dredging if delays in completing the CSO tanks resulted in impacts to the dredging and capping remedy.

51. EPA has determined that Respondent failed to timely comply with multiple provisions of the City RD UAO and the Tank AOC. In 2016, Respondent transferred all funding for the OH-007 Tank RD to the RH-034 Tank RD effort. EPA was not made aware of this transfer of funds until February 2020, despite Respondent being required under the City RD UAO to timely report and mitigate any compliance delays. Six years after EPA's issuance of the City RD UAO, Respondent currently has no RD contract in place for the OH-007 Tank. While Respondent timely completed the RH-034 Tank property acquisition and has largely completed the RH-034 Tank RD, Respondent has not complied with several other Tank AOC schedule milestones that Respondent itself formulated. Completion of the RH-034 headhouse design, along with contract procurement and implementation of building demolition and preparatory cleanup work, is subject to significant, continuing delays.

52. Respondent's noncompliance with the City RD UAO and Tank AOC will, in turn, delay the anticipated completion of construction of the CSO tanks. The continued discharge of contaminated CSO solids will likely impact the dredging and capping remedy, which began on November 16, 2020. Therefore, Respondent's delays have increased the likelihood that it will need to perform further contaminated CSO solids maintenance dredging and incur additional costs as a result.

53. The CSO tanks are part of the sewer infrastructure needed to address both existing sewer loads and increased loads anticipated from rezoning and redevelopment, which is preliminarily projected to include an increase of 1,100% in sanitary sewage. EPA's goal is to ensure that neither the proposed rezoning and redevelopment nor any further delays in Respondent's implementation of the CSO portion of the ROD remedy adversely impact human health or the environment at the Site.

54. This Order is being issued in advance of EPA's final approval of the 100% RDs for the CSO Tanks and the Salt Lot and 2nd Avenue street end bulkheads, to facilitate the efficient technical, legal, and procurement/contracting transition from RD to RA, and to provide public certainty regarding the CSO sewer infrastructure construction schedule. EPA provided Respondent with two drafts of Appendix B -Schedule, which EPA developed based upon a

review of prior work schedules submitted to EPA by Respondent. Respondent provided written and verbal comments on the draft schedules, which input was considered by EPA in developing Appendix B – Schedule, attached hereto.

F. Conclusions of Law

55. The Site includes a “facility” within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

56. The contamination found at the Site, as identified in the Findings of Fact above, includes hazardous substances as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

57. The Work is a response action which will be conducted entirely on-Site and is, therefore, subject to the permit exemption in Section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1), and to the provisions of National Oil and Hazardous Substances Pollution Contingency Plan (“NCP”), 40 C.F.R. Part 300. With respect to the bulkhead work required by this Order, EPA intends to coordinate as appropriate with the regulatory authorities, which include the U.S. Army Corps of Engineers, NYSDEC, the New York State Historic Preservation Office, and Respondent, in order to ensure substantive compliance with the applicable regulatory requirements for the Work.

58. The conditions described in the Findings of Fact above constitute an actual or threatened “release” of a hazardous substance from a facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22). Such releases include, but are not limited to, PAHs, PCBs, pesticides, metals, and VOCs that were discharged into the soil, surface water, groundwater and sediments at the Site.

59. Respondent is a municipal corporation chartered by the State of New York and is a “person” within the meaning of Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

60. Respondent is a liable party with respect to the Site within the meaning of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

V. DETERMINATIONS

61. Based on the Findings of Fact and Conclusions of Law set forth above, as well as the administrative record, the actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

62. The conditions present at the Site constitute a threat to public health, welfare, or the environment based upon factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (“NCP”). These factors include, but are not

limited to, actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants.

63. Solely for purposes of Section 113(j) of CERCLA, 42 U.S.C. § 9613(j), the remedy set forth in the ROD and the Work to be performed by Respondent shall constitute a response action taken or ordered by the President for which judicial review shall be limited to the administrative record.

64. The actions required by this Order are necessary to protect the public health or welfare or the environment.

VI. ORDER

65. Based on the Findings of Fact, Conclusions of Law, and Determinations set forth above, and the administrative record for the Work required herein, Respondent is hereby ordered to comply with this Order and any modifications to this Order, including, but not limited to, all appendices and all documents incorporated by reference into this Order. All activities specified by this Order shall be initiated and completed as soon as possible, even though maximum time periods for their completion are specified herein.

VII. DESIGNATED EPA PROJECT MANAGER AND RESPONDENT'S PROJECT COORDINATOR

66. Within ten (10) days after the Effective Date of this Order, Respondent shall submit the name, address, qualifications, email address and telephone number of the Project Coordinator to the EPA Remedial Project Manager ("RPM") specified in Paragraph 71, below. The Project Coordinator shall not be an attorney engaged in the practice of law. He or she shall have the technical expertise sufficient to adequately oversee all aspects of the Work contemplated by this Order. The Project Coordinator shall be responsible, on behalf of Respondent, for the implementation of the Work being performed under this Order. The Project Coordinator shall be knowledgeable about all matters relating to the Work being performed under this Order. To the extent possible, the Project Coordinator shall be present on-Site or readily available for EPA to contact during all working days. Notice by EPA in writing to the Project Coordinator shall be deemed notice to Respondent for all matters relating to the Work under this Order and shall be effective upon receipt. Respondent shall retain a Project Coordinator until EPA issues a Termination and Satisfaction in accordance with Paragraph 121.

67. Selection of a new Project Coordinator shall be subject to approval by EPA in writing. If EPA disapproves a proposed Project Coordinator, Respondent shall propose a different person and notify EPA of that person's name, address, telephone number and qualifications within seven (7) days following EPA's disapproval. Respondent may change their Project Coordinator if EPA has received written notice at least ten (10) days prior to the desired change. The initial

notification may be made orally, but shall be promptly followed by a written notice. All changes of the Project Coordinator shall be subject to EPA approval.

68. All activities required of Respondent under the terms of this Order shall be performed only by well-qualified persons possessing all necessary permits, licenses, and other authorizations required by federal, state, and/or local governments consistent with Section 121 of CERCLA, 42 U.S.C. § 9621, and all Work conducted pursuant to this Order shall be performed in accordance with prevailing professional standards. All plans and specifications shall be prepared under the supervision of, and signed/certified by, a licensed New York professional engineer.

69. EPA retains the right to disapprove any or all of the contractors and/or subcontractors proposed by Respondent to conduct the Work. Within ten (10) days of the Effective Date, Respondent shall notify EPA of the name and qualifications of all contractors and subcontractor proposed to perform Work under this Order. If EPA disapproves in writing any of Respondent's proposed contractors or subcontractors, Respondent shall propose a different contractor within seven (7) days of receipt of EPA's disapproval.

70. Respondent shall provide a copy of this Order to each contractor, subcontractor, laboratory, or consultant approved and retained to perform any Work under this Order, within five (5) days after the Effective Date or on the date such services are retained, whichever date occurs later. Respondent shall also provide a copy of this Order to each person representing Respondent 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 and in compliance with all applicable laws and regulations. Notwithstanding the terms of any contract, Respondent is 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.

71. EPA has designated Christos Tsiamis of the New York Remediation Branch, Superfund and Emergency Management Division, EPA Region 2, as its RPM for the Site. Except as otherwise provided in this Order, Respondent shall direct all submissions required by this Order to the RPM via e-mail at tsiamis.christos@epa.gov and by regular mail, at U.S. EPA, Region 2, 290 Broadway, 19th Floor, New York, NY 10007. EPA will notify Respondent's Project Coordinator if EPA designates a different RPM for the Order.

72. EPA's RPM shall have the authority lawfully vested in an RPM by the NCP. In addition, EPA's RPM shall have the authority, consistent with the NCP, to halt any Work required by this Order and to take any necessary response action when the RPM determines that conditions at the Site may present an immediate endangerment to public health, welfare or the environment. The absence of the RPM from the area under study pursuant to this Order shall not be cause for the stoppage or delay of Work.

VIII. WORK TO BE PERFORMED

73. Respondent shall perform all actions necessary to complete the Work set forth below, within the timeframes set forth below or in Appendix B. At any point during the performance of the Work, Respondent may request adjustments to the schedule which EPA may, in its sole discretion, approve and adjust accordingly.

RA for the CSO Portion of the ROD Remedy

a. CSO Tank Construction: Respondent shall construct the RH-034 Tank and OH-007 Tank following EPA approval of the 100% designs for each respective tank, in accordance with those designs and within the time frames set forth in Appendix B. Any property acquisition proposed by Respondent for the construction of the OH-007 Tank shall be subject to EPA approval and shall be completed to meet the time frames set forth in Appendix B.

b. CSO Tank Operation and Maintenance: Following completion of construction of the RH-034 and OH-007 Tanks, respectively, Respondent shall properly operate and maintain such Tanks. Respondent shall submit to EPA a quarterly report summarizing the operation and maintenance status of such Tanks, including the volume of water treated, the total amount of solids that entered the treatment system, and the amount of solids captured (as weight of sludge shipped off-Site).

c. Stormwater Controls: Beginning upon the Effective Date of this Order, Respondent shall ensure implementation of applicable City regulations for sewer connections (Chapter 31 of Title 15 of the Rules of the City of New York) and stormwater control regulations and standards, as set forth in the ROD, at minimum, and as may be updated in City regulations and guidelines, for project plan approvals within the Gowanus Canal sewershed, to ensure that hazardous substances and solids from additional stormwater and sewage loads do not compromise the effectiveness of the permanent CSO control measures by exceeding their design capacity. See ROD at page 85. When implementing or approving municipal sewer infrastructure upgrades and/or private stormwater controls within the Gowanus Canal sewershed, stormwater shall be separated for discharge to the Gowanus Canal to the maximum extent practicable. Commencing on January 31, 2022, Respondent shall submit to EPA an annual report summarizing the net changes in sanitary and stormwater loadings within the Gowanus Canal sewershed, which shall include but not be limited to, the major project plan approvals for the preceding calendar year. Respondent shall submit the proposed form and contents of the report for EPA approval.

d. Separated Outfall Treatment Units: Beginning upon the Effective Date of this Order, Respondent shall install, operate and maintain EPA-approved treatment units at all separated stormwater outfalls, including street end discharges, at the Site that are

owned by or approved by Respondent after the Effective Date and are not otherwise covered by a NYSDEC discharge permit with discharge limits and treatment. These treatment units should have the capacity to effectively separate oil contamination and capture solids from stormwater runoff, prior to discharging to the Canal. The responsibility to install, operate and maintain EPA-approved treatment units at all separated stormwater outfalls may be delegated to property owners as part of redevelopment plan approvals, but Respondent shall track, oversee and remain separately responsible for such Work. Commencing on January 31, 2022, Respondent shall submit to EPA an annual report summarizing the location of such treatment units and their maintenance status, including the amounts of oil and solids removed from each unit, and the results of semi-annual testing of the water at the exit point of the treatment units to ensure the functionality of the units. The treatment unit testing shall include solids content, VOCs, SVOCs and heavy metals.

e. CSO Solids Monitoring: Respondent shall monitor post-dredging CSO solids contaminant levels pursuant to an EPA-approved Monitoring Plan (“Plan”). The Plan shall include periodic in-Canal monitoring of CSO solids recontamination levels and annual tracking of CSO solids loading from each CSO outfall, including a detailed description for how the CSO outfall solids loading is calculated. The Plan shall be submitted for EPA approval by October 31, 2021. In-Canal monitoring consistent with the Plan shall begin one year after EPA notifies Respondent that capping is completed in RTA 1. The CSO solids outfall loading monitoring shall begin on June 1, 2022, to establish a baseline for CSO solids loading prior to the buildout of rezoning within the Gowanus Canal sewershed.

f. CSO Solids Maintenance Dredging: If EPA so directs, Respondent shall perform CSO solids maintenance dredging. Such work shall be performed in accordance with a work plan and schedule approved by EPA. If the CSO solids maintenance dredging results in any damage or impacts to the cap system, Respondent shall be responsible for cap repairs. Respondent shall coordinate and cooperate with respondents to EPA enforcement instruments for implementation of the CSO and in-Canal remedies, including for mitigation and repair of CSO maintenance dredging impacts to the cap.

Salt Lot and 2nd Avenue Bulkhead Removal Action

g. Following EPA approval of the 100% design for the Salt Lot and 2nd Avenue street end bulkhead, Respondent shall construct such bulkhead within the timeframe set forth in Appendix B.

OH-007 Tank RD

h. Completion of OH-007 Tank RD: Respondent shall complete the OH-007 Tank RD as required by the City RD UAO within the time frame set forth in Appendix B.

Coordination and Cooperation

i. Respondent shall coordinate and cooperate with respondents to any other administrative orders issued by EPA which are necessary for implementation of the Work and the remedy set forth in the ROD, including but not limited to preparation of Five-Year Reviews and implementation of institutional controls that are deemed necessary by EPA.

74. Health and Safety Plan. Respondent shall submit for EPA review and comment a Health and Safety Plan (“HASP”) that ensures the protection of on-Site workers and the public during the performance of on-Site Work under this Order. This HASP shall be prepared in accordance with “OSWER Integrated Health and Safety Program Operating Practices for OSWER Field Activities,” Pub. 9285.0-OIC (Nov. 2002), available on the National Service Center for Environmental Publications database at <https://www.epa.gov/nscep>, and “EPA’s Emergency Responder Health and Safety Manual,” OSWER Directive 9285.3-12 (July 2005 and updates), available at https://www.epaosc.org/_HealthSafetyManual/manual-index.htm. In addition, the HASP shall comply with all currently applicable Occupational Safety and Health Administration (“OSHA”) regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the HASP shall also include contingency planning. Respondent shall incorporate all changes to the HASP recommended by EPA and shall implement the HASP during the pendency of the Work. If any of the Work performed by Respondent pursuant to this Order requires alteration of the HASP, Respondent shall submit to EPA for review such amendments to the HASP prior to the performance of such Work.

75. Quality Assurance, Sampling, and Data Analysis. Respondent shall use Quality Assurance/Quality Control (“QA/QC”) and other technical activities and chain of custody procedures for all samples consistent with “EPA Requirements for Quality Assurance Project Plans (QA/R5)” (EPA/240/B-01/003, March 2001, reissued May 2006), “Guidance for Quality Assurance Project Plans (QA/G-5)” (EPA/240/R-02/009, December 2002), and subsequent amendments to such guidelines. Amendments to such guidelines shall apply only to procedures conducted after such notification.

Prior to the commencement of any data collection or other monitoring under this Order, Respondent shall submit to EPA for approval a Quality Assurance Project Plan (“QAPP”) that is consistent with EPA-approved plans, the NCP, the Uniform Federal Policy for Implementing Quality Systems (“UFP-QS”), EPA-505-F-03-001, March 2005; Uniform Federal Policy for Quality Assurance Project Plans (“UFP-QAPP”), Parts 1, 2, and 3, EPA-505-B-04-900A, B, and C, March 2005 and March 2012 or newer, and other guidance documents referenced in the aforementioned guidance documents as well as <http://www2.epa.gov/fedfac/assuring-quality-federal-cleanups>. Respondent shall ensure that EPA personnel and EPA’s authorized representatives are allowed access at reasonable times to all laboratories utilized by Respondent in implementing this Order. In addition, Respondent shall ensure that such laboratories shall

analyze all samples submitted by EPA pursuant to the QAPP for quality assurance, quality control, and technical activities that will satisfy the stated performance criteria as specified in the QAPP and that sampling and field activities are conducted in accordance with “EPA QA Field Activities Procedure” (<https://www.epa.gov/irmpoli8/epa-qa-field-activities-procedures>). Respondent shall ensure that the laboratories it utilizes for the analysis of samples taken pursuant to this Order meet the competency requirements set forth in EPA’s “Policy to Assure Competency of Laboratories, Field Sampling, and Other Organizations Generating Environmental Measurement Data under Agency-Funded Acquisitions” (<http://www.epa.gov/fem/pdfs/fem-lab-competency-policy.pdf>) and that the laboratories perform all analyses according to accepted EPA methods. Accepted EPA methods consist of, but are not limited to, methods that are documented in the EPA’s Contract Laboratory Program (<http://www.epa.gov/superfund/programs/clp/>), SW 846 “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (<http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>), “Standard Methods for the Examination of Water and Wastewater” (<http://www.standardmethods.org/>), 40 C.F.R. Part 136, “Air Toxics - Monitoring Methods” (<http://www.epa.gov/ttnamti1/airtox.html>),” and any amendments made thereto during the course of the implementation of this Order. However, upon approval by EPA, Respondent may use other appropriate analytical method(s), as long as (a) QA/QC criteria are contained in the method(s) and the method(s) are included in the QAPP, (b) the analytical method(s) are at least as stringent as the methods listed above, and (c) the method(s) have been approved for use by a nationally recognized organization responsible for verification and publication of analytical methods, *e.g.*, EPA, American Society for Testing and Materials, National Institute for Occupational Safety and Health, OSHA, etc. Respondent shall ensure that all laboratories it uses for the analysis of samples taken pursuant to this Order have a documented Quality System that complies with ANSI/ASQC E-4-2004, “Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use” (American National Standard, 2004, and “EPA Requirements for Quality Management Plans (QA/R-2)” (EPA/240/B-01/002, March 2001, reissued May 2006), or equivalent documentation as determined by EPA. EPA may consider Environmental Response Laboratory Network laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program, or laboratories that meet International Standardization Organization (ISO 17025) standards or other nationally recognized programs (<http://www.epa.gov/fem/accredit.htm>) as meeting the Quality System requirements. Respondent shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Order are conducted in accordance with the procedures set forth in the QAPP approved by EPA.

Upon request, Respondent shall provide split or duplicate samples to EPA or its authorized representatives. Respondent shall notify EPA not less than seven (7) days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA has the right to collect any additional samples that EPA deems necessary. Upon request, EPA will provide to Respondent split or duplicate samples of any samples it collects as part of EPA’s oversight of Respondent’s implementation of the Work.

Respondent shall submit to EPA the results of all sampling and/or tests or other data obtained or generated by or on behalf of Respondent with respect to the implementation of this Order.

76. Respondent shall assure that field personnel used by Respondent are properly trained in the use of field equipment and in chain-of-custody procedures.

77. Respondent shall conduct all Work under this Order in compliance with CERCLA, the NCP, and all applicable EPA guidances, policies, and procedures, including, without limitation, EPA Region 2's "Clean and Green Policy," which may be found at <https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy>

78. Off-Site Shipments

a. Respondent may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

b. Respondent may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the appropriate state environmental official in the receiving facility's state and to the RPM. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent shall also notify the state environmental official referenced above and the RPM of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the notice after the award of the contract for the response action and before the Waste Material is shipped.

c. Respondent may ship Investigation Derived Waste ("IDW") from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the 100% design. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) shipped off-Site for treatability studies, are not subject to 40 C.F.R. § 300.440.

79. As appropriate during the course of implementation of the actions required of Respondent pursuant to this Order, Respondent or its consultants or contractors, acting through the Project Coordinator, may confer with EPA concerning the required actions. Based upon new

circumstances or new information not in the possession of EPA on the Effective Date of this Order, the Project Coordinator may request, in writing, EPA approval of modification(s) to the EPA-approved plans. Only modifications approved by EPA in writing shall be deemed effective. Upon approval by EPA, such modifications shall be deemed incorporated in this Order and shall be implemented by Respondent.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

80. If EPA disapproves or otherwise requires any modifications to any plan, report or other item required to be submitted to EPA for approval pursuant to this Order, Respondent shall have fourteen (14) days from the receipt of notice of such disapproval or the required modifications to correct any deficiencies and resubmit the plan, report, or other written document to EPA for approval, unless a shorter or longer period is specified in the notice. Any notice of disapproval will include an explanation of why the plan, report, or other item is being disapproved. Respondent shall address each of the comments and resubmit the plan, report, or other item with the required changes within the time stated above. At such time as EPA determines that the plan, report, or other item is acceptable, EPA will transmit to Respondent a written statement to that effect.

81. If any plan, report, or other item required to be submitted to EPA for approval pursuant to this Order is disapproved by EPA, even after being resubmitted following Respondent's receipt of EPA's comments on the initial submittal, Respondent shall be deemed to be out of compliance with this Order. If any resubmitted plan, report, or other item, or portion thereof, is disapproved by EPA, EPA may again direct Respondent to make the necessary modifications thereto, and/or EPA may amend or develop the item(s) and recover the costs of doing so from Respondent. Respondent shall implement any such item(s) as amended or developed by EPA.

82. EPA shall be the final arbiter in any dispute regarding the sufficiency or acceptability of all documents submitted and all activities performed pursuant to this Order. EPA may modify those documents and/or perform or require the performance of additional work unilaterally.

83. All plans, reports and other submittals required to be submitted to EPA pursuant to this Order, upon approval by EPA, shall be deemed to be incorporated in and an enforceable part of this Order.

X. SUBMISSION OF PLANS AND REPORTING REQUIREMENTS

84. Reporting.

Commencing on the thirtieth (30th) day after the Effective Date, unless there is field work at the Site, Respondent shall provide monthly, or as otherwise required by EPA, progress reports. Whenever, during the implementation of this Order, Respondent is engaged in active field work, Respondent shall provide, via email to the RPM, at least one (1) week advance notice of all field activities. During active field work, Respondent shall provide EPA with

written progress reports, including photo documentation, every seven (7) days beginning from the date of commencement of field work. After active field work has been completed, Respondent shall resume monthly written progress reports, commencing thirty (30) days after the submission of the last weekly written progress report.

All progress reports shall fully describe all actions and activities undertaken pursuant to this Order. Such progress reports shall, among other things: (a) describe the actions taken toward achieving compliance with this Order during the previous week; (b) include all results of sampling and tests and all other data received by Respondent after the most recent progress report submitted to EPA; (c) describe all actions which are scheduled for the next week; (d) provide other information relating to the progress of Work as is customary in the industry; (e) provide current contract funding and procurement status and remaining contract fund balances; and (f) include information regarding percentage of completion, all delays encountered or anticipated that may affect the future schedule for completion of the Work required hereunder, and a description of all efforts made to mitigate those delays or anticipated delays.

Progress reports and all other plans and reports submitted by Respondent to EPA shall include the following certification: "I certify that the information contained in and accompanying this document is true, accurate, and complete."

b. Respondent shall submit copies of all plans, reports or other submissions required by this Order or any approved work plan as set forth below. Any electronic submissions must be in a format that is compatible with EPA software and in database files and sizes to be specified by EPA. All deliverables shall be submitted to the following:

2 copies: (1 bound, 1 via email or electronic)	Remedial Project Manager - Gowanus Canal Site Superfund and Emergency Management Division U.S. Environmental Protection Agency, Region 2 290 Broadway, 19 th Floor New York, New York 10007-1866 tsiamis.christos@epa.gov
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1 copy: (via email or electronic)	singerman.joel@epa.gov garbarini.doug@epa.gov
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1 copy: (via email or electronic)	Chief, New York/Caribbean Superfund Branch Office of Regional Counsel United States Environmental Protection Agency, Region 2 290 Broadway, 17 th Floor New York, New York 10007-1866 Attn: Gowanus Canal Superfund Site Attorney carr.brian@epa.gov sainsbury.walter@epa.gov
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1 copy each:
(via email or
electronic)

N.Y.S. Department of Environmental Conservation
patrick.foster@dec.ny.gov
aaron.fischer@dec.ny.gov
gerard.burke@dec.ny.gov
heidi.dudek@dec.ny.gov

XI. OVERSIGHT

85. During the implementation of the requirements of this Order, Respondent and its contractor(s) and subcontractor(s) shall be available for such conferences with EPA and inspections by EPA or its authorized representatives as EPA may determine are necessary to adequately oversee the Work being carried out or to be carried out by Respondent, including inspections at the Site and at laboratories where analytical work is being done hereunder.

86. Respondent and its employees, agents, contractor(s), and consultant(s) shall cooperate with EPA in its efforts to oversee Respondent's implementation of this Order.

XII. COMMUNITY RELATIONS

87. Respondent shall cooperate with EPA in providing information relating to the Work required hereunder to the public. As requested by EPA, Respondent shall participate in the preparation of all appropriate information disseminated to the public; participate in public meetings that may be held or sponsored by EPA to explain activities at or concerning the Site; and provide a suitable location for public meetings, as needed.

XIII. SITE ACCESS AND ACCESS TO INFORMATION

88. EPA, NYSDEC and their designated representatives, including, but not limited to, employees, agents, contractor(s) and consultant(s) thereof, shall be permitted to observe the Work carried out pursuant to this Order. Respondent shall at all times permit EPA, NYSDEC and their designated representatives full access to and freedom of movement at the Site and any other premises where Work under this Order is to be performed for purposes of inspecting or observing Respondent's progress in implementing the requirements of this Order, verifying the information submitted to EPA by Respondent, conducting investigations relating to contamination at the Site or for any other purpose EPA determines to be reasonably related to EPA oversight of the implementation of this Order.

89. In the event that action under this Order is to be performed in areas owned by or in possession of a person other than Respondent, Respondent shall use best efforts to obtain access agreements from such persons within thirty (30) days of the Effective Date of this Order for purposes of implementing the requirements of this Order. Such agreements shall provide access not only for Respondent, but also for EPA and its designated representatives or agents,

as well as NYSDEC and its designated representatives or agents. Such agreements shall specify that Respondent is not EPA's representative with respect to liability associated with Site activities. If such access agreements are not obtained by Respondent within the time period specified herein, Respondent shall immediately notify EPA of the failure to obtain access and shall include in that notification a summary of the steps Respondent has taken to attempt to obtain access. For purposes of this Paragraph, "best efforts" include the payment of reasonable sums of money in consideration of access. EPA may use its legal authorities to obtain access for Respondent, may perform those response actions with EPA contractors at the property in question or may terminate the Order if Respondent cannot obtain access agreements. If EPA performs those tasks or activities with EPA contractors and does not terminate the Order, Respondent shall perform all other activities not requiring access to that property. Respondent shall integrate the results of any such tasks undertaken by EPA into its reports and deliverables.

90. Upon request, Respondent shall provide EPA with access to all records and documentation related to the conditions at the Site, hazardous substances found at or released from the Site, and the actions conducted pursuant to this Order except for those items, if any, subject to the attorney-client or work product privilege. All data, information and records created, maintained, or received by Respondent or its contractor(s) or consultant(s) in connection with implementation of the Work under this Order, including, but not limited to, contractual documents, invoices, receipts, work orders and disposal records shall, without delay, be made available to EPA upon request, subject to the same privileges specified above in this Paragraph. EPA shall be permitted to copy all such documents. Respondent shall submit to EPA upon receipt the results of all sampling or tests and all other technical data generated by Respondent or its contractor(s), or on Respondent's behalf, in connection with the implementation of this Order.

91. Notwithstanding any other provision of this Order, EPA hereby retains all its information gathering, access, and inspection authority under CERCLA, the Resource Conservation and Recovery Act and any other applicable statutes or regulations.

XIV. RECORD RETENTION

92. During the pendency of this Order and for a minimum of then (10) years after EPA provides Notice of Termination and Satisfaction pursuant to Paragraph 121, Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to liability under CERCLA with respect to the Site. Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during

performance of the Work and not contained in the aforementioned Records to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

93. At the end of the ten (10)-year period referred to in Paragraph 92, Respondent shall notify EPA at least thirty (30) days before any such document or information is destroyed that such documents and information are available for inspection. Upon request, Respondent shall provide EPA with the originals or copies of such documents and information.

94. All documents submitted by Respondent to EPA during the implementation of this Order shall be available to the public unless claimed as privileged or confidential pursuant to applicable law. In addition, EPA may release all such documents to NYSDEC, and NYSDEC may make those documents available to the public unless Respondent conforms to applicable New York State law and regulations regarding confidentiality. Respondent shall not assert a claim of privilege or confidentiality regarding any monitoring or hydrogeologic data, any information specified under Section 104(e)(7)(F) of CERCLA, or any other chemical, scientific or engineering data relating to the Work performed hereunder.

XV. COMPLIANCE WITH OTHER LAWS

95. Respondent shall undertake all action that this Order requires in accordance with the requirements of all applicable local, state, and federal laws and regulations, unless an exemption from such requirements is specifically provided by law or in this Order. The activities conducted pursuant to this Order, if approved by EPA, shall be considered consistent with the NCP.

96. As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and the NCP, no permit shall be required for any portion of the Work conducted entirely on-Site, including temporary modifications to the operation of the Flushing Tunnel and the RH-034 and OH-007 outfalls. Where any portion of the Work requires a federal or state permit or approval, Respondent shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

97. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XVI. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

98. Upon the occurrence of any event during performance of the Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately orally notify the RPM or, in the event of his/her unavailability, the Regional Duty Officer at 732-906-6850, and the National Response Center at (800) 424-

8802. Respondent shall also submit a written report to EPA within seven (7) days after the onset of such an event, setting forth the events that occurred and the measures taken or to be taken, if any, to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. The reporting requirements of this Paragraph are in addition to, not in lieu of, reporting under CERCLA Section 103, 42 U.S.C. §9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. §11004.

99. In the event of any action or occurrence during Respondent's performance of the requirements of this Order that causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health, welfare or the environment, or cause potential or actual adverse impacts to upland structures, Respondent shall immediately take all appropriate action to prevent, abate or minimize the threat and shall immediately notify EPA as provided in the preceding paragraph. Respondent shall take such action in accordance with applicable provisions of this Order. In the event that EPA determines that (a) the activities performed pursuant to this Order, (b) significant changes in conditions at the Site or (c) emergency circumstances occurring at the Site pose a threat to human health or the environment, EPA may direct Respondent to stop further implementation of any actions pursuant to this Order or to take other and further actions reasonably necessary to abate the threat.

100. Nothing in the preceding paragraph shall be deemed to limit any authority of the United States to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XVII. MODIFICATIONS

101. No informal advice, guidance, suggestion or comment by EPA regarding reports, plans, specifications, schedules or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain such formal approval as may be required by this Order and to comply with all requirements of this Order.

XVIII. DELAY IN PERFORMANCE

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

103. Respondent shall notify EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to the RPM as soon as Respondent knows that a delay might occur. Respondent shall adopt all reasonable measures to

avoid or minimize any such delay. Within two (2) days after notifying EPA by telephone, Respondent shall provide written notification fully describing the nature of the delay, any justification for the delay, any reason why Respondent 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 have been or will be taken to mitigate the effect of the delay. Increased cost or expense associated with the implementation of the activities called for in this Order is not a justification for any delay in performance.

XIX. ENFORCEMENT, WORK TAKEOVER AND RESERVATION OF RIGHTS

104. a. Any willful violation of, or failure or refusal to comply with, any provision of this Order may subject Respondent to civil penalties up to the maximum amount authorized by law. CERCLA § 106(b)(1), 42 U.S.C. § 9606(b)(1). As of the date of issuance of this Order, the statutory maximum amount is \$59,017 per violation per day, under Sections 109 and 122(l) of CERCLA, 42 U.S.C. §§ 9609 and 9622(l), and the Debt Collection and Improvement Act of 1996 (see Civil Monetary Penalty Inflation Adjustment Rule, 85 Fed. Reg. 83818 (December 23, 2020)), and 40 C.F.R. § 19.4. This maximum amount may increase in the future, as EPA amends its civil penalty amounts through rulemaking pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990 (Public Law 101-410, codified at 28 U.S.C. § 2461), as amended by the Federal Civil Penalties Inflation Adjustment Act Improvement Act of 2015 (Section 701 of Public Law 114-74)). The maximum amount to be applied to any violation may be set as the most recent maximum amount set forth in 40 C.F.R. § 19.4 as of the date that the U.S. District Court assesses any such penalty. Respondent also may be subject to punitive damages in an amount at least equal to but not more than three times the amount of any costs incurred by the United States as a result of such willful violation, or failure or refusal to comply with this Order, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. 105. § 9607(c)(3).

b. If Respondent willfully violates or fails or refuses to comply with this Order or any portion thereof, EPA may unilaterally carry out the actions required by this Order, 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.

c. Nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law. EPA reserves the right to bring an action against Respondent 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 or the Site. In addition, nothing in this Order shall limit EPA's authority under Section XXI (Financial Assurance). As provided in Paragraph 1 and Section IV(E) (Respondent's Noncompliance with City RD UAO and Tank AOC), EPA has determined that Respondent has willfully violated, or failed or refused to comply with the

City RD UAO and the Tank AOC, and that Respondent's noncompliance has delayed work required under these orders. EPA expressly reserves its right to seek all appropriate relief, including without limitation statutory and stipulated penalties, for Respondent's past noncompliance with the City RD UAO and Tank AOC and for any future noncompliance with these orders or any other orders issued by EPA with respect to Respondent. EPA's issuance of the Work Schedule, attached hereto as Appendix B and incorporated into this Order, is not intended to constitute, nor shall it be deemed to be, a waiver or compromise of rights of EPA or the United States to bring an administrative or judicial action seeking penalties, injunctive relief, or any other appropriate relief for Respondent's noncompliance with any order issued by EPA with respect to the Site.

XX. OTHER CLAIMS

106. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent or Respondent's employees, agents, contractors, or consultants in carrying out any action or activity pursuant to this Order. The United States or EPA shall not be held out as or deemed a party to any contract entered into by Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Order.

107. Nothing in this Order constitutes or shall be construed as a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Order for any liability that Respondent or other persons may have under CERCLA, other statutes, or the common law, including but not limited to any claims of the United States for injunctive relief, costs, damages, and interest under Sections 106(a) and 107 of CERCLA, 42 U.S.C. §§ 9606(a) and 9607. Nothing herein shall constitute a finding that any Respondent is the only responsible party with respect to the release and threatened release of hazardous substances at and from the Site.

108. Nothing in this Order shall affect any right, claim, interest, defense, or cause of action of any party hereto with respect to third parties.

109. Nothing in this Order shall be construed to constitute preauthorization under Section 111(a)(2) of CERCLA, 42 U.S.C. §9611(a)(2), and 40 CFR § 300.700(d).

XXI. FINANCIAL ASSURANCE

110. In order to ensure completion of the Work, Respondent shall secure financial assurance, initially in the amount of \$1,100,000,000 ("Estimated Cost of the Work"). The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA or under the "Financial Assurance - Orders" category on the Cleanup Enforcement Model Language and

Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>, and satisfactory to EPA. Respondent may use multiple mechanisms if they are limited to trust funds, surety bonds guaranteeing payment, and/or letters of credit.

a. A trust fund: (1) established to ensure that funds will be available as and when needed for performance of the Work; (2) administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency; and (3) governed by an agreement that requires the trustee to make payments from the fund only when the Director of the Superfund and Emergency Management Division advises the trustee in writing that: (i) payments are necessary to fulfill Respondent's obligations under the Order; or (ii) funds held in trust are in excess of the funds that are necessary to complete the performance of Work in accordance with this Order;

b. A surety bond, 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, guaranteeing payment or performance in accordance with Paragraph 115 (Access to Financial Assurance);

c. An irrevocable letter of credit, issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency, guaranteeing payment in accordance with Paragraph 115 (Access to Financial Assurance);

d. A demonstration by Respondent that it meets the relevant financial test criteria of Paragraph 112;

e. A guarantee to fund or perform the Work executed by a company (1) that is a direct or indirect parent company of Respondent or has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with Respondent; and (2) can demonstrate to EPA's satisfaction that it meets the financial test criteria of Paragraph 112; or

f. Such other form of financial assurance as EPA may approve in writing.

111. **Standby Trust.** If Respondent seeks to establish financial assurance by using a surety bond, a letter of credit, or a corporate guarantee, Respondent shall at the same time establish and thereafter maintain a standby trust fund, which must meet the requirements specified in Paragraph 109.a, and into which payments from the other financial assurance mechanism can be deposited if the financial assurance provider is directed to do so by EPA pursuant to Paragraph 115 (Access to Financial Assurance). An originally signed duplicate of the standby trust agreement must be submitted, with the other financial mechanism, to EPA in accordance with Paragraph 111. Until the standby trust fund is funded pursuant to Paragraph 115 (Access to Financial Assurance), neither payments into the standby trust fund nor annual valuations are required.

112. Within thirty (30) days after the Effective Date, Respondent shall submit to EPA proposed financial assurance mechanisms in draft form in accordance with Paragraph for EPA's review. Within sixty (60) days after the Effective Date, or thirty (30) days after EPA's approval of the form and substance of Respondent's financial assurance, whichever is later, Respondent shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the EPA contacts set forth in Paragraph 84.b and to:

Chief, Resource Management/Cost Recovery Section
Program Support Branch
Superfund and Emergency Management Division
U.S. Environmental Protection Agency, Region 2
290 Broadway, 18th Floor
New York, New York 10007-1866
keating.robert@epa.gov.

113. If Respondent seeks to provide financial assurance by means of a demonstration or guarantee under Paragraph 109.d or Paragraph 109.e, Respondent must, within sixty (60) days after the Effective Date:

a. Demonstrate that:

(1) Respondent or guarantor has:

- i. Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5;
- ii. Net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee;
- iii. Tangible net worth of at least \$10 million; and
- iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

- (2) The Respondent or guarantor has:
- i. A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's;
 - ii. Tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee;
 - iii. Tangible net worth of at least \$10 million; and
 - iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and
- b. Submit to EPA for Respondent or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from EPA or under the "Financial Assurance – Orders" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>.

114. Respondent shall diligently monitor the adequacy of the financial assurance. If Respondent becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, Respondent shall notify EPA of such information within thirty (30) days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify Respondent of such determination. Respondent shall, within thirty (30) days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. Respondent shall follow the procedures of Paragraph 116 (Modification of Amount, Form, or Terms of Financial Assurance) in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Respondent's inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this Order.

115. Respondent providing financial assurance by means of a demonstration or guarantee under Paragraph 109.d or Paragraph 109.e must also:

- a. Annually resubmit the documents described in Paragraph 112.b within ninety (90) days after the close of Respondent's or guarantor's fiscal year;
- b. Notify EPA within thirty (30) days after Respondent or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and
- c. Provide to EPA, within thirty (30) days of EPA's request, reports of the financial condition of Respondent or guarantor in addition to those specified in Paragraph 112.b.; EPA may make such a request at any time based on a belief that Respondent or guarantor may no longer meet the financial test requirements of this Section.

116. Access to Financial Assurance

a. If EPA determines that Respondent (1) has ceased implementation of any portion of the Work, (2) is seriously or repeatedly deficient or late in their performance of the Work, or (3) is implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice ("Performance Failure Notice") to Respondent and the financial assurance provider regarding Respondent's failure to perform. Any Performance Failure Notice issued by EPA will specify the grounds upon which such notice was issued and will provide Respondent a period of ten (10) days within which to remedy the circumstances giving rise to EPA's issuance of such notice. If, after expiration of the 10-day period specified in this Paragraph, Respondent has not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Performance Failure Notice, then, in accordance with any applicable financial assurance mechanism, EPA may at any time thereafter direct the financial assurance provider to immediately: (1) deposit any funds assured pursuant to this Section into the standby trust fund; or (2) arrange for performance of the Work in accordance with this Order.

b. If EPA is notified by the provider of a financial assurance mechanism that it intends to cancel the mechanism, and Respondent fails to provide an alternative financial assurance mechanism in accordance with this Section at least thirty (30) days prior to the cancellation date, EPA may, prior to cancellation, direct the financial assurance provider to deposit any funds guaranteed under such mechanism into the standby trust fund for use consistent with this Section.

117. Modification of Amount, Form, or Terms of Financial Assurance. Respondent may submit, on any anniversary of the Effective Date or following Respondent's request for, and EPA's approval of, another date, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to the EPA individual(s)

referenced in Paragraph 111, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, a description of the proposed changes, if any, to the form or terms of the financial assurance, and any newly proposed financial assurance documentation in accordance with the requirements of Paragraphs 109 and 110 (Standby Trust). EPA will notify Respondent of its decision to approve or disapprove a requested reduction or change. Respondent may reduce the amount or change the form or terms of the financial assurance only in accordance with EPA's approval. Within thirty (30) days after receipt of EPA's approval of the requested modifications pursuant to this Paragraph, Respondent shall submit to the EPA individual(s) referenced in Paragraph 111 all executed and/or otherwise finalized documentation relating to the amended, reduced, or alternative financial assurance mechanism. Upon EPA's approval, the Estimated Cost of the Work shall be deemed to be the estimate of the cost of the remaining Work in the approved proposal.

118. Release, Cancellation, or Discontinuation of Financial Assurance. Respondent may release, cancel, or discontinue any financial assurance provided under this Section only: (a) after receipt of documentation issued by EPA certifying completion of the Work; or (b) in accordance with EPA's written approval of such release, cancellation, or discontinuation.

XXI. INSURANCE

119. At least fourteen (14) days prior to commencing any on-site Work under this Order, Respondent shall secure, and shall maintain for the duration of the Work being performed pursuant to this Order, commercial general liability insurance with limits of liability of \$1 million per occurrence, automobile liability insurance with limits of liability of \$1 million per accident, and umbrella liability insurance with limits of liability of \$5 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondent pursuant to this Order. Within the same period, Respondent shall provide EPA with certificates of such insurance and, if requested, a copy of each insurance policy. Respondent shall submit such certificates and, if requested, copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Work being performed pursuant to Order, Respondent 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 Respondent in furtherance of this Order. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXIII. INTEGRATION/APPENDICES

120. In the event of a conflict between any provision of this Order and the provisions of any document attached to this Order or submitted or approved pursuant to this Order, the provisions of this Order shall control.

121. The following documents are attached to and incorporated into this Order:

Appendix A is the ROD (weblink)

Appendix B is the Work Schedule

XXIV. TERMINATION AND SATISFACTION

122. Upon a determination by EPA that the Work required pursuant to this Order has been fully carried out in accordance with this Order, EPA will so notify Respondent in writing.

XXV. OPPORTUNITY TO CONFER, EFFECTIVE DATE

123. This Order shall be effective fourteen (14) days after receipt by Respondent, unless a conference is timely requested pursuant to Paragraph 123 below. If such a conference is timely requested, this Order shall become effective seven (7) days following the date the conference is held, unless the Effective Date is modified by EPA. All times for performance of ordered activities shall be calculated from this Effective Date.

124. Respondent may, within thirteen (13) days after receipt of this Order, request a conference with EPA to discuss this Order. If requested, the conference shall occur within twenty-one (21) days of Respondent's request for a conference. The conference shall be held by telephone or videoconference.

125. If a conference is held, Respondent may present any information, arguments, or comments regarding this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondent 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 Respondent's request, Respondent may appear in person or by an attorney or other representative.

126. A request for a conference must be made by telephone to Brian Carr, Assistant Regional Counsel, Office of Regional Counsel, EPA Region 2, telephone (212) 637-3170, followed by written confirmation emailed that day to Mr. Carr at carr.brian@epa.gov.

XXVI. NOTICE OF INTENT TO COMPLY

127. Respondent shall provide, not later than seven (7) days after the Effective Date, written notice to EPA stating whether it will comply with the terms of this Order. If Respondent does not unequivocally commit to perform the work required by this Order, it shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondent's written notice shall describe, using facts that exist on or prior to the Effective Date, any "sufficient cause" defenses asserted by Respondent under Sections 106(b) and 107(c)(3) of CERCLA. Respondent's written notice shall be sent to Brian Carr, Assistant Regional Counsel, Office of Regional Counsel, EPA Region 2, 290 Broadway, 17th floor, New York, New York 10007-1866, or by email to carr.brian@epa.gov. The absence of a response by EPA to the notice required by this Paragraph shall not be deemed to be an acceptance of Respondent's assertions.

By: Evangelista, Pat Digitally signed by Evangelista, Pat
Date: 2021.03.29 15:26:24 -04'00'
PAT EVANGELISTA
Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency
Region 2

March 29, 2021
Date

Appendix A: ROD

Currently available at <https://semspub.epa.gov/work/02/692106.pdf>

Appendix B – Schedule

All work shall be performed as soon as possible, but shall be completed no later than the dates set forth below, after which, the next step shall be commenced as soon as possible.

A. RH-034 Tank

1. Complete CP-2 work: December 31, 2026
2. Complete CP-3 procurement: April 30, 2026
3. Commence CP-3 work: July 1, 2026
4. Complete CP-3 work and commence operations: March 31, 2029

B. OH-007 Tank

1. Complete CP-1 procurement: May 31, 2023
2. Commence CP-1 work: June 1, 2023
3. Complete CP-1 work: June 1, 2024
4. Complete CP-2 procurement: February 29, 2024
5. Commence CP-2 work: March 1, 2024
6. Complete CP-2 work: October 1, 2026
7. Complete CP-3 procurement: April 30, 2026
8. Commence CP-3 work: May 1, 2026
9. Complete CP-3 work and commence operations: May 1, 2028

C. OH-007 Tank RD

1. Complete Tank Design procurement: May 31, 2021
2. Submit to EPA Updated Basis of Design Report: August 30, 2021
3. Submit to EPA CP-1: May 31, 2022
4. Submit to EPA CP-2: May 31, 2023
5. Submit to EPA CP-3: August 30, 2023

D. Salt Lot and 2nd Avenue Bulkhead Removal Action

1. Complete bulkhead procurement: December 31, 2021
2. Commence bulkhead construction: January 1, 2022
3. Complete bulkhead construction sufficient to support dredging: December 31, 2022
4. Complete final bulkhead construction: March 31, 2023

Gowanus Canal Superfund Site

Amendment to March 29, 2021 Administrative Order for Remedial Action, Removal Action,
and Remedial Design, Index No. CERCLA-02-2021-2010 (Order)

Paragraphs 73.a-f. of the Order are hereby amended as follows:

- a. CSO Tank Construction: Respondent shall construct the RH-034 Tank and OH-007 Tank following EPA approval of the 100% designs for each respective tank, in accordance with those designs and within the time frames set forth in Appendix B. Any locations proposed by Respondent to be used in connection with the construction of the OH-007 Tank shall be subject to EPA approval, and whatever access or property interest is needed for those EPA-approved locations shall be obtained by Respondent so as to meet the time frames set forth in Appendix B.
- b. CSO Tank Operation and Maintenance: Following completion of construction of the RH-034 and OH-007 Tanks, respectively, Respondent shall properly operate and maintain such Tanks. Respondent shall submit to EPA a quarterly report summarizing the operation and maintenance status of such Tanks, including the volume of water treated, the total amount of solids that entered the treatment system, and the amount of solids captured (as weight of materials shipped off-Site). Respondent shall submit the proposed form and contents of the quarterly reports for EPA approval.
- c. Stormwater Controls: Beginning upon the Effective Date of this Order, Respondent shall ensure appropriate implementation of applicable City regulations for sewer connections (Chapter 31 of Title 15 of the Rules of the City of New York) and stormwater control regulations and standards, as set forth in the ROD and as may be updated in City regulations and guidelines, for project plan approvals within the Gowanus Canal sewershed, to ensure that hazardous substances and solids from additional stormwater and sewage loads do not compromise the effectiveness of the remedy, and the permanent CSO control measures by exceeding their design capacity. When implementing or approving municipal sewer infrastructure upgrades which discharge stormwater to the Canal, and/or private stormwater controls along the banks of the Canal, stormwater shall be separated to the maximum extent practicable, and such stormwater discharges shall be treated pursuant to paragraph 73.d., below. Commencing on January 31, 2022, Respondent shall submit to EPA an annual report summarizing the major project plan approvals and completions for the preceding calendar year within the Gowanus Canal sewershed, as well as the projected net changes in sanitary and stormwater loadings related to completed projects. Respondent shall submit the proposed form and contents of the annual reports for EPA approval.
- d. Separated Outfall Treatment Units: Beginning upon the Effective Date of this Order, Respondent shall install, operate and maintain EPA-approved treatment units at all newly constructed or upgraded City-owned separated stormwater outfalls, including street end discharges, at the Site. Respondent shall continue to operate and maintain any existing treatment units previously installed at City-owned separated storm water outfalls at the Site. Respondent shall require the installation, operation, and maintenance of treatment units at all privately owned separated stormwater outfalls at the Site that are

approved by Respondent after the Effective Date and are not otherwise covered by a NYSDEC discharge permit with discharge limits and treatment. The treatment units required by this subparagraph shall have the capacity to effectively separate oil contamination and capture solids from stormwater runoff, prior to discharging to the Canal. The responsibility to install, operate and maintain EPA-approved treatment units at separated stormwater outfalls discharging any stormwater from City-owned property or streets may be delegated to private property owners as part of redevelopment plan approvals, but Respondent shall track, oversee and remain responsible for such Work. Commencing on January 31, 2022, Respondent shall submit to EPA an annual report summarizing the location of such treatment units and their maintenance status, including the amounts of oil and solids removed from each unit, and the results of semi-annual testing of the water at the exit point of the treatment units to ensure the functionality of the units. The treatment unit testing shall include solids content, VOCs, SVOCs, and heavy metals. Respondent shall submit the proposed form and contents of the annual reports for EPA approval. Respondent shall request EPA approval for treatment units on a project-by-project basis, or, as appropriate, for a set of standardized units.

e. CSO Solids Monitoring: Respondent shall monitor post-dredging CSO solids contaminant levels pursuant to an EPA-approved Monitoring Plan (“Plan”). The Plan shall include periodic in-Canal monitoring of surface sediment recontamination levels and annual tracking of CSO solids loading from each CSO outfall, including a detailed description for how the CSO outfall solids loading is calculated, for the purpose of determining whether CSO solids removal will be required to mitigate impacts to sediment from CSO discharges. The Plan shall be submitted for EPA approval by October 31, 2021, and the City shall submit the proposed form and content of the monitoring to be reported pursuant to the Plan for EPA approval at least 60 days prior to this date. In-Canal monitoring consistent with the Plan shall begin one year after EPA notifies Respondent that capping is completed in RTA 1. The CSO solids outfall loading monitoring shall begin as early as June 1, 2022, to establish a baseline for CSO solids loading.

f. CSO Solids Maintenance Dredging: If EPA so directs, based on the monitoring performed pursuant to paragraph 73.e, Respondent shall perform CSO solids maintenance dredging. Such work shall be performed in accordance with a work plan and schedule approved by EPA. If the CSO solids maintenance dredging results in any damage or impacts to the cap system, Respondent shall be responsible for cap repairs. Respondent shall coordinate and cooperate with respondents to EPA enforcement instruments for implementation of the CSO and in-Canal remedies, including for mitigation and repair of CSO maintenance dredging impacts to the cap.

By: PAT EVANGELISTA
Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency, Region 2

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June 29, 2021
Date