



ORDER OF APPROVAL

March 5, 2020

File No. SR-26-0934A

(Formerly Case No. Case No. 95-022)

CERTIFIED MAIL

Mr. Kenneth E. Lento
Project Manager - Site Investigation & Remediation
National Grid
40 Sylvan Road
Waltham, MA 02451

RE: Tidewater Coal Gasification
Tidewater Street
Pawtucket, Rhode Island
Plat Map 54B / Lot 826, Plat Map 65B / Lots 662, 645, 647, 649 and portions of Lot 648
and portions of Plat Map 67B / Lots 11 and 21

Dear Mr. Lento:

Enclosed please find the Order of Approval (the Order) for the proposed Remedial Action Work Plan (RAWP), received June 15, 2018, for the limited removal and proper disposal of source material from three (3) identified potential source areas, physical containment of non-aqueous phase liquid (NAPL) impacts via installation of a containment wall along the downgradient riverfront portion of the Site, encapsulation of impacted soils via the installation of an engineered control cap over the entire site consisting of an impermeable cap in areas of the Site where infiltration through soil impacts would likely impact underlying groundwater, and a permeable cap in remaining portions of the Site where soil impacts are limited and unlikely to impact underlying groundwater, focused NAPL recovery from a network of wells, periodic long-term groundwater. In addition, the remedy will include natural attenuation monitoring, implementation of an Air Quality Monitoring (AQM) Plan during remedial activities, installation of a vapor barrier below the new substation control house, implementation of an Environmental Land Usage Restriction (ELUR) on the entire property with an associated Soil Management Plan (SMP), and annual cap and containment wall inspections and maintenance at the abovementioned property. Please review the stipulations of this Order thoroughly to ensure your compliance with the requirements.

The Department understands that National Grid is currently in discussions with a developer that has expressed interested in leasing the northern half of the Tidewater property. The Department acknowledges that discussions are preliminary, and any impacts on the approved remedy are not known at this time. Please be advised that if the proposed development moves forward and requires significant changes to the approved remedy, then those changes will need to be submitted to the Department for review and approval prior to the Department issuing an Order of Approval Addendum. In the meantime, issuing this Order approving the currently proposed remedy allows

National Grid to move forward with an important scheduled infrastructure project (new electrical substation) on the southern half of the property that is not part of, and should not be impacted by, any pending future northern area development.

Please notify this office 48 hours prior to the beginning of any work related to the remediation of the property. If you have any questions regarding this letter or would like the opportunity to meet with Department personnel, please contact me by telephone at (401) 222-2797, ext. 7109, or by E-mail at joseph.martella@dem.ri.gov.

This Order shall be recorded in the land evidence records of the City of Pawtucket within thirty (30) days of execution and a recorded copy returned to the Department within fifteen (15) days of recording.

Sincerely,



Joseph T. Martella II
Principal Engineer
Office of Waste Management

cc: Terrence D. Gray, RIDEM/Deputy Director for Environmental Protection
Leo Hellested, RIDEM/OWM
Kelly Owens, RIDEM/OWM
Ronald Gagnon, RIDEM/OCTA
Ruth Gold, RIDEM/OAR
Nick Pissani, RIDEM/OWR/Storm Water
Charles Horbert, RIDEM/OWR
Neil Personeus, RIDEM/OWR/WQC
Dr. Michael Byrns PhD, RIDOH/Center for Healthy Homes & Environment
Tracy A. Silvia, RI CRMC
Richard Lucia, RI CRMC
Michael S. Wierbonics, ACOE/Regulatory Division
Dylan M. Zelazo, Pawtucket Mayor's Office
Susan Mara, Pawtucket Planning
Michael D. Cassidy, Pawtucket Planning
Andrew Silvia, Pawtucket/DPW
Robert Billington, Blackstone Valley Tourism Council
Gerard Charbonneau, Chairman, Pawtucket School Committee
Julie Nora, Ph.D., International Charter School
Carolyn Sheehan, Blackstone Academy
Bridget Boucher, Francis J. Varietur Elementary School
Ms. Dania Alejandra Flores-Heagney, Environmental Justice League of Rhode Island
Michele Leone, National Grid
David J. Rusczyk, GZA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

In the matter of the application for Remedial Action Approval at:
Tidewater Coal Gasification
Tidewater Street
Pawtucket, Rhode Island
File No. SR-26-0934A

ORDER OF APPROVAL

In the above entitled matter wherein The Narragansett Electric Company d/b/a National Grid (National Grid) in their capacity as Owner and Responsible Party for the remediation of the property located at Tidewater Street (the Site), Pawtucket (Plat 54B / Lot 826, Plat 65B / Lots 662, 645, 647, 649 and portions of Lot 648 and portions of Plat 67B / Lots 11 and 21), filed with the Rhode Island Department of Environmental Management (the Department) the following document(s), which collectively fulfill the requirements of 250-RICR-140-30-1, Section 1.10 (Remedial Action Work Plan) of the Department's Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations), codified January 8, 2019 consistent with the RI Administrative Procedures Act:

1. Remedial Action Work Plan, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, Site Remediation File No. SR-26-0934A/ (Formerly RIDEM Case No. 95-022), received by the Department on June 15, 2018, and prepared by GZA GeoEnvironmental, Inc. (GZA);
2. Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, RIDEM Case No. 95-022 / Site Remediation File No. SR-26-0934, received by the Department on April 2, 2019, and prepared by GZA;
3. Remedial Action Work Plan Addendum, Site Remediation File No. SR-26-0934A/Formerly RIDEM Case No. 95-022, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on May 31, 2019, and prepared by GZA; and
4. Electronic Mail, Subject: RE: Tidewater Remedy, received by the Department on February 28, 2020, and prepared by GZA.

These documents describe a plan to remediate existing contamination pursuant to Rhode Island General Laws 23-19.14-1 et seq. and the Department's Remediation Regulations, in accordance therewith.

It is the Department's intent that all conditions set forth in this Order of Approval (Order) shall remain in full force and effect unless specifically altered by the Department in writing. Furthermore, this letter continues to place primary responsibility for the construction, operation, maintenance, and monitoring of the approved Remedial Action Work Plan (RAWP) and its associated implementation on National Grid. As the Responsible Party and Performing Party,

National Grid is expected to implement the RAWP in an expeditious and professional manner that prevents non-compliance with this Order and said RAWP, and is protective of human health and the environment.

Upon consideration thereof, the Department of Environmental Management's Office of Waste Management (OWM) approves said plan or means to remediate contamination through this Order provided that:

1. Implementation of the RAWP at the Site shall be initiated within twelve (12) months of execution of this Order.
2. The OWM shall receive written notification forty-eight (48) hours prior to the initiation of any remedial activities.
3. Prior to initiating any remedial activities, the Department shall be provided with a list of all contractors, and their respective contact information, that will be used on Site to complete the remedial work described in the Department approved RAWP. The Department shall be notified, when feasible, a minimum of five (5) working days in advance of any changes in contractors and/or consultants involved with the remedial work on this Site. The notification must be promptly supplied in writing with complete contact information for each new contractor or consultant (including but not limited to company name and address, contact name and address, contact telephone number and e-mail address).
4. All work must be performed in accordance with all applicable regulations and the Department approved RAWP, inclusive of schedules, and must be consistent with Section 1.12 of the Remediation Regulations.
5. The remediation goals shall be consistent with Section 1.9.1 of the Remediation Regulations and shall be achieved by the following remedial plan:
 - a. Limited removal and proper disposal of source material from three (3) identified potential source areas (the former tank UGGT-1, raceway structures and an area of crystallized naphthalene);
 - b. Physical containment of Non-Aqueous Phase Liquid (NAPL) contamination on the Site by the construction of a steel sheet piling wall along the downgradient riverfront, extending approximately 25 to 40 feet below ground surface (bgs) and keyed approximately two (2) feet into the underlying till layer. The containment wall will not be continuous in the area of the electrical transmission towers (southeast portion of the Site) due to safety concerns associated with construction in the vicinity of the high voltage overhead transmission lines and electrical distribution submarine cables, but will include wing walls immediately north of the transmission tower area and integral NAPL recovery wells south of the transmission tower area to facilitate NAPL containment;
 - c. Construction of an engineered control cap over the entire site consisting of an impermeable cap in areas of the Site where infiltration through soil impacts would

likely impact underlying groundwater, and a permeable cap in remaining portions of the Site where soil impacts are limited and unlikely to impact underlying groundwater. The impermeable cap shall consist of up to two (2) feet of clean imported soil (minimum of 1 foot), an underlying drainage system, all underlain by an impermeable layer (i.e., geomembrane or clay layer). The permeable cap shall consist of a minimum of one (1) foot of clean imported soil with an underlying geotextile;

- d. Capping a freshwater wetland in the northern portion of the Site to mitigate direct contact with the potentially impacted soils in this area. The cap will be designed as a permeable cap to allow groundwater to continue to support the wetland and the area will be restored with wetland soils and plantings;
 - e. Post remediation restoration of vegetated areas within 200 feet of the coastal feature as applicable and in accordance with Rhode Island Coastal Resources Management Council (CRMC) requirements;
 - f. Focused NAPL gauging and recovery from a network of existing and newly installed recovery wells;
 - g. Periodic long-term groundwater natural attenuation monitoring from a network of existing and newly installed groundwater monitoring wells;
 - h. As part of pending upgrades/expansion of the active electrical substation at the Site, installation of a vapor barrier below the new substation control house;
 - i. Implementation of an Air Quality Monitoring (AQM) Plan during remedial activities;
 - j. Implementation of an Environmental Land Usage Restriction (ELUR) on the entire property with an associated Soil Management Plan (SMP), and
 - k. Annual cap and containment wall inspections and maintenance.
6. The focused NAPL recovery and monitored natural attenuation (MNA) remediation goal shall be consistent with Section 1.9.1 of the Remediation Regulations achieved by the collection of NAPL from a network of recovery wells and periodic long-term groundwater monitoring as outlined in the RAWP. Specifically, the Groundwater Objectives shall be removal of all NAPL and compliance with the Method 1 GB Groundwater Objectives.
 7. National Grid, and their consultant, are aware of the points of compliance requirements and Section 1.9.8 of the Remediation Regulations for offsite GB groundwater exceedances and Section 1.9.8 requires a Performing Party(s) to meet compliance with the GB groundwater objectives for all contaminants of concern at the property line.
 8. The remedial objectives for groundwater at the Site shall be the GB Groundwater Objectives, as specified in the Department's Remediation Regulations.
 9. Sampling and analysis of all media involved in the Remedial Action shall be conducted in strict accordance with the RAWP, the Remediation Regulations, and the requirements of this Order.
 10. Groundwater samples shall be collected from monitoring wells on an annual basis for five (5) years from a total of 27 monitoring wells which include 22 existing monitoring wells (MW-7, MW-310S, MW-310D, MW-311, MW-201, MW-208, MW-312D, MW-326D, MW-333S,

MW-333D, M&E MW-2, MW-6, MW-109, MW-314S, MW-314D, MW-316S, MW-316D, MW-337, MW-107, MW-318S, MW-334S, MW-334D) and five (5) new monitoring wells. All groundwater samples shall be laboratory analyzed for volatile organic compounds (VOCs) until all monitoring wells demonstrate a minimum of three (3) consecutive rounds of sampling where concentrations of VOCs in the groundwater are below the GB groundwater objectives. Groundwater samples collected from the initial sampling round after implementation of the remedy (baseline) will also be analyzed for volatile petroleum hydrocarbons/extractable petroleum hydrocarbons (VPH/EPH) via the Massachusetts's Department of Environmental Protection (MA DEP) Method. Groundwater samples from well locations exhibiting elevated initial VPH/EPH concentrations will continue to be analyzed for the MADEP VPH/EPH method.

11. The NAPL gauging and recovery program will be focused at 17 existing monitoring wells (MW-210, MW-3, MW-312S, MW-313S, MW-313D, MW-326S, MW-335S, MW-335D, M&E MW-5, MW-4, MW-303, MW-339S, MW-33D, MW-341, MW-1, MW-320S, and MW-320D) and the 13 new recovery wells. The NAPL gauging and recovery program will be performed quarterly for the first year after installation of the containment wall. After the first year, the frequency of the NAPL gauging and recovery activities will be modified to semi-annual (twice per year). Subsequent modifications to the frequency will be based on observations made and subject to Department approval. When measurable amounts of NAPL are no longer detected in a well in the NAPL recovery program after 1 year of gauging, the monitoring well will then be added into the natural attenuation monitoring program. Reductions in the frequency of groundwater monitoring and NAPL gauging, or removal of monitoring or gauging locations, shall be subject to Department review and approval.
12. All excavated regulated soil, if not approved for encapsulation onsite, shall be disposed of off-site at an appropriately licensed disposal facility in accordance with all local, State, and Federal laws. Copies of the material shipping records and manifests associated with the disposal of the material shall be included along with the Closure Report.
13. Areas of the site where contaminated soils are to be excavated must be staged and temporarily stored in a designated area, as proposed in the RAWP, of the site with proper polyethylene covers, with the exception of certain areas where excavated impacted soils are being placed directly on ground over other impacted soils because of significant regrading requirements, and are subject to eventual placement under an impermeable cap and above the groundwater table. Any stockpiled materials, including clean fill, must be underlain and covered with polyethylene sheeting and be secured at the end of each day with all appropriate erosion and sediment controls to limit the loss of the cover and protect against storm-water and wind erosion (i.e. hay bales, rocks, silt fencing). These appropriate sedimentation and erosion controls must be in place and in proper working order at all times until all disturbed areas are stabilized and capped as proposed. Within reason, the storage location will be selected to limit the unauthorized access to the materials (i.e. away from public roadways/walkways). No regulated soil will be stockpiled on-site for greater than thirty (30) days. In the event that stockpiled soils pose a risk or threat of leaching hazardous materials, a proper leak-proof container (i.e. drum or lined roll-off) or secondary containment will be required and utilized. Saturated materials will be staged within lined

saturated material management areas, and if grossly impacted with NAPL will be segregated from the less visibly impacted material, dried for shipment and subsequently disposed off-Site to a permitted facility. Less visibly impacted saturated material will be amended with a drying agent & reused as fill below the impermeable engineered cap to the maximum extent practicable.

14. The OWM no longer requires the submittal of analytical data prior to clean fill being brought to a Site. It is the sole responsibility of the Performing Party and their consultant to analyze the material, certify that the material meets the Department's Residential Direct Exposure Criteria (RDEC), as defined by the Remediation Regulations, for all constituents, and is suitable for use on the Site. The OWM strongly suggests that enough representative samples of the clean fill are collected prior to moving the material to the Site to satisfy the Performing Party and their consultant that the material meets the RDEC. Please note that the OWM reserves its rights to sample the fill, if suspect, to confirm compliance with the RDEC.
15. All regulated soil remaining onsite shall be encapsulated by an engineered control consistent with those described in the Department approved RAWP.
16. Dust suppression techniques (i.e. watering) must be employed at all times during all soil disturbing/handling activities at the site in order to minimize the generation of fugitive dust
17. Please note that it is Department policy regarding groundwater monitoring to require three (3) consecutive sampling rounds exhibiting concentrations below the GB Groundwater Objectives prior to the issuance of a Letter of Compliance.
18. Following recording of the ELUR, the site shall be maintained and annually inspected to evaluate the compliance status of the site with the ELUR. Within thirty (30) days of each annual inspection, an evaluation report shall be prepared and submitted to the OWM detailing the findings of the inspection and noting any compliance violations at the site.
19. Any changes in the activities detailed in the RAWP shall be reported to the OWM by telephone within one (1) working day and in writing within five (5) business days.
20. Status reports with laboratory results will be due annually, at the OWM for review within thirty (30) days of each sampling event. During remedial activities the Department shall be provided with weekly Perimeter Air Quality Monitoring Reports suitable for posting to the Department's Tidewater web page.
21. Results of all environmental sampling shall be sent to Joseph T. Martella, Office of Waste Management, 235 Promenade Street, Providence, RI 02908.
22. National Grid or a future property owner may request an alteration of the compliance sampling frequency. All requests must be submitted in writing to the Department, and are subject to final Department review and approval.

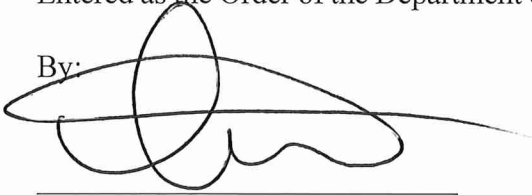
23. The OWM shall be immediately notified of any Site or operational condition that results in non-compliance with this Order.
24. Any interruptions of the remedy shall be reported to the OWM's Joseph T. Martella by telephone within one (1) working day and in writing within seven (7) days of occurrence.
25. All waste derived from installation and operation of the remedy shall be disposed of in accordance with the RAWP, the Department's Rules and Regulations for Hazardous Waste Management, the Rules and Regulations for Composting Facilities and Solid Waste Management Facilities, and the Regulations for the Rhode Island Pollutant Discharge Elimination System, as well as any other applicable local, State, or Federal regulations and policies. Documentation of proper disposal shall be provided to the OWM.
26. This Order does not remove National Grid's obligation to obtain any other necessary permits from other local, State, or Federal agencies.
27. National Grid shall have this Order recorded in the City of Pawtucket Land Evidence Records for the subject property within thirty (30) days of execution of this Order and prior to any remedial activities. A copy of the recorded Order (stamped with the book and page number) must be submitted to the Department within fifteen (15) days of recording.
28. Within ninety (90) days of the Department approved conclusion of remedial actions at the Site, submit a Closure Report, detailing the Remedial Action, current Site status, groundwater monitoring results, and all disposal documentation to the OWM.
29. Based upon the results of groundwater monitoring, the Department reserves its rights to require additional remedial actions or monitoring at the Property to achieve final compliance at the Site, if warranted.
30. No hazardous waste shall be accepted from any off-site sources for treatment, storage or disposal at the Site.
31. Closure and removal of the remedial system(s) at the conclusion of the remedy will be contingent upon final Department approval.
32. A revised updated draft ELUR and post-construction SMP shall be submitted electronically, in redline/strikeout format, for Department review and approval. Within sixty (60) days of completion of the work described in the Department approved RAWP, the final Department approved ELUR shall be recorded in the City of Pawtucket Records for the property and stamped, certified copy returned to the Department within fifteen (15) days of recording. Upon receipt of the recorded (stamped) ELUR, the OWM will issue an Interim Letter of Compliance.
33. Within thirty (30) days of each annual ELUR inspection of the remedy, an evaluation report shall be prepared and submitted to the OWM detailing the findings of the inspection and noting any compliance violations at the site.

This Order shall remain in full force and effect provided said RAWP is implemented in a manner satisfactory to the Department of Environmental Management. Failure to comply with all points outlined in the Department approved RAWP and stipulated in this Order shall result in the revocation of this Order of Approval and may result in the issuance of a Notice of Violation against the Performing Party.

This Order shall be subject to modification or revocation in accordance with law.

Entered as the Order of the Department of Environmental Management this 5TH day of March, 2019.

By:



Matthew D. DeStefano
Deputy Chief, Office of Waste Management
Department of Environmental Management