



PROGRAM LETTER

May 25, 2017

File No. SR-26-0934A

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

Mr. Jesse Edmands
Project Manager
National Grid
40 Sylvan Road
Waltham, MA 02451

RE: Tidewater Manufactured Gas Plant (former)
Tidewater Street
Pawtucket, Rhode Island
Plat Map 65B / Lots 647, 648 & 649

Dear Mr. Edmands:

On November 9, 2011, the Rhode Island Department of Environmental Management's (the Department) Office of Waste Management (OWM) enacted the amended Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations). The purpose of these regulations is to create an integrated program requiring reporting, investigation and remediation of petroleum and hazardous material contaminated sites in order to eliminate and/or control threats to human health and the environment in an efficient manner. A Program Letter is a document used by the Department to signify that a Site Investigation has been completed and that a Performing Party must conduct public notice in accordance with Rules 7.07(A)(ii) and 7.09 of the Remediation Regulations concerning the findings of the investigation and the proposed remedial alternatives.

In the matter of the above-referenced property (the Site), the Department's OWM is in receipt of the following documentation submitted pursuant to the Remediation Regulations in response to the reported release at the Site:

1. Work Study Plan, Remedial Investigation for Valley Gas Company, Pawtucket, Rhode Island, received by the Department in December 1986, and prepared by Goldberg-Zoino & Associates, Inc.;
2. Proposal for Preliminary Assessment at a Former Gas Plant Site, received by the Department on April 23, 1987, and prepared by Roy F. Weston, Inc. (Weston);
3. Investigation Work Plan for the No. 1 Station Site, received by the Department on November 5, 1987, and prepared by Weston;

4. Investigations at the No. 1 Station Site, received by the Department in May 1988, and prepared by Weston;
5. Underground Storage Tank Closure Completion Report, Blackstone Valley Electric Company, No. 1 Station, Thornton Street, Pawtucket, Rhode Island, received by the Department on May 29, 1991, and prepared by M&E Zecco, Inc.;
6. Letter Re: Letter of Responsibility, Case No. 95-022, Tidewater Manufactured Gas Plant Site, Pawtucket, Rhode Island, received by the Department on December 1, 1995, and prepared by Isaacson, Rosenbaum, Woods & Levy, P.C.;
7. Addendum to the Work Plan/Response to Comments, Draft Work Plan for Remedial Investigation, Tidewater Former Manufactured Gas Plant Site, Pawtucket, Rhode Island, received by the Department on June 10, 1996, and prepared by Eastern Utilities (EU);
8. Remedial Investigation at the Tidewater Site, Pawtucket, Rhode Island, received by the Department on December 30, 1996, and prepared by Atlantic Environmental Services, Inc. (AES);
9. Tidewater Site, Additional Background Surface-Soil Sampling, Pawtucket, Rhode Island, Summary Report, received by the Department on June 6, 1997, and prepared by GEI Consultants, Inc./Atlantic Environmental Division (GEI/AED);
10. Addendum to the Tidewater Site Additional Background Surface-Soil Sampling, Pawtucket, Rhode Island, received by the Department on January 9, 1998, and prepared by GEI/AED;
11. Tidewater Site, Application for Variance, Pawtucket, Rhode Island, received by the Department on January 9, 1998, and prepared by GEI/AED;
12. Hazardous Material Release Notification, New England Gas Company, Tidewater Street, Pawtucket, Rhode Island, received by the Department on November 4, 2004, and prepared by New England Gas Company (NEGC);
13. Abutter Notification, Site Investigation Activities, Former Tidewater Manufactured Gas Plant, Pawtucket, Rhode Island, received by the Department on March 22, 2006, and prepared by Vanasse Hangen Brustlin, Inc. (VHB);
14. Short-Term Response Action Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on January 21, 2007, and prepared by GZA GeoEnvironmental, Inc. (GZA);
15. Release Notification, The Narragansett Electric Company d/b/a/National Grid, Polychlorinated Biphenyl Release, Pawtucket #1 Substation, Pawtucket, Rhode Island, received by the Department on June 7, 2007, and prepared by Ransom Environmental Consultants, Inc. (REC);

16. Notice to Abutter, Sediment Sampling, Tidewater Manufactured Gas Plant (MGP) & Pawtucket No. 1 Power Station Site, Pawtucket, Rhode Island, received by the Department on July 3, 2008, and prepared by Arcadis;
17. Sediment Investigation Work Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on July 3, 2008, and prepared by GZA GeoEnvironmental, Inc. (GZA);
18. Sediment Investigation Work Plan, Former Tidewater Facility, received by the Department on July 7, 2008, and prepared by Arcadis;
19. Release Notification, The Narragansett Electric Company d/b/a/ National Grid, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on June 17, 2009, and prepared by VHB;
20. Tidewater Sediment Data Report, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on June 26, 2009, and prepared by Anchor QEA, LLC (Anchor);
21. Response to Comments Dated February 25, 2009, Pawtucket No. 1 Station Self Implementing plan to Address PCB-Impacted Soil, 6 Thornton Street, Pawtucket, Rhode Island, received by the Department on March 24, 2009, and prepared by GZA;
22. Notice to Abutter, Environmental Site Investigation, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on April 16, 2009, and prepared by GZA;
23. Notice of Release, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on November 4, 2009, and prepared by GZA;
24. Supplemental Site Investigation Work Plan (SWIPP), Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on November 23, 2009, and prepared by GZA;
25. Remedial Summary Report – Response to Stormwater Release, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on November 25, 2009, and prepared by GZA;
26. Short-Term Response Action Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on December 4, 2009, and prepared by GZA;
27. Short-Term Response Action Summary Report, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on February 1, 2010, and prepared by GZA;
28. Multiple Site Response Action Status Reports, received by the Department starting on February 1, 2010, with monthly periodic submittals ongoing through the present day, and prepared by GZA;

29. Gas Holder Demolition – Ruptured Vactor Hose, Former Gas Holder Dismantling, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on September 30, 2010, and prepared by GZA;
30. Short-Term Response Action Plan Closure Report, MGP-Residuals Roadway Remediation, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on October 1, 2010, and prepared by GZA;
31. Short-Term Response Action Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on October 1, 2010, and prepared by GZA;
32. Supplemental Site Investigation Work Plan (SWIPP) Addendum, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on October 15, 2010, and prepared by GZA;
33. Former Gas Holder Dismantling Project, Status Update, Former Tidewater MGP and Power Plant Site, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on October 26, 2010, and prepared by GZA;
34. Multiple Upcoming Site Response Action Reports, received by the Department starting on November 19, 2010, with weekly or biweekly periodic submittals ongoing through the present day, and prepared by GZA;
35. Short-Term Response Action Plan (Revised), Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on January 10, 2011, and prepared by GZA;
36. Letter Response to the Department's Request Pursuant to Air Pollution Control Regulation No. 14, received by the Department on January 11, 2011, and prepared by National Grid;
37. Site Investigation Data Report, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on January 13, 2011, and prepared by GZA;
38. Short-Term Response Action Plan (Revised), Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on January 18, 2011, and prepared by GZA;
39. Release Notification, Gas Regulator Station, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on April 14, 2011, and prepared by GZA;
40. Evaluation of Applicability of Air Pollution Control Regulation No. 9 & Air Quality Monitoring Program, Natural Gas Regulator Station Upgrade Project, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on April 19, 2011, and prepared by GZA;
41. Materials Management Plan, Natural Gas Regulator Reconstruction Activities, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on April 29, 2011, and prepared by GZA;

42. Air Quality Monitoring, Natural Gas Regulator Station Upgrade Project, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on May 5, 2011, and prepared by GZA;
43. Evaluation of Applicability of Air Pollution Control Regulation No. 9, Proposed Above Ground Former Processing Pipe Removal Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on June 23, 2011, and prepared by GZA;
44. Gasholder Nos. 7 and 8 Decommissioning and Demolition Completion Report, Former Tidewater MGP and Power Plant Site, Tidewater Street, Pawtucket, Rhode Island, received by the Department on July 8, 2011, and prepared by GZA;
45. Remedial Alternative Evaluation Report, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on July 29, 2011, and prepared by GZA;
46. Notice to Abutter, Short-Term Response Action - Pipe Removal, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on August 1, 2011, and prepared by GZA;
47. Site Characterization and Performance-Based Disposal Plan, Natural Gas Regulator Station Area, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on August 9, 2011, and prepared by GZA;
48. Supplemental Site Investigation Work Plan (SSIWP) Addendum, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on August 12, 2011, and prepared by GZA;
49. Short-Term Response Action Completion Report, Former Process Pipe Removal, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on September 22, 2011, and prepared by GZA;
50. Completion Report, Performance-Based PCB Remedial Activities, Natural Gas Regulator Station Area, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on November 3, 2011, and prepared by GZA;
51. Evaluation of Applicability of Air Pollution Control Regulation No. 9, Substation Upgrade Earthwork Activities, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on February 13, 2012, and prepared by GZA;
52. Community Interviews Notice, Tidewater Site Cleanup, Merry and Tidewater Streets, Pawtucket, Rhode Island, received by the Department on June 1, 2012, and prepared by National Grid;
53. Response to Comments, Evaluation of Applicability of Air Pollution Control Regulation No. 9 – Substation Upgrade Earthwork Activities, Former Tidewater Facility, Pawtucket,

- Rhode Island, received by the Department on June 14, 2012, and prepared by GZA;
54. Response to July 5, 2012 Letter, Evaluation of Applicability of Air Pollution Control Regulation No. 9 – Substation Upgrade Earthwork Activities, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on July 27, 2012, and prepared by GZA;
 55. Notice to Abutter and Interested Parties, Proposed Electrical Substation Upgrades, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on August 10, 2012, and prepared by GZA;
 56. Site Investigation Report Addendum, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on September 11, 2012, and prepared by GZA;
 57. Summary of June 2012 Waterline Repair and Hydrant Replacement Activities, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on September 12, 2012, and prepared by GZA;
 58. Summary of Air Quality Monitoring during Substation Earthwork, Former Tidewater MGP and Power Plant Pawtucket, Rhode Island, received by the Department on September 28, 2012, and prepared by GZA;
 59. Notice to Abutter and Interested Parties, DRAFT Public Involvement Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on November 26, 2012, and prepared by GZA;
 60. Multiple Weekly Air Monitoring Data Reports, received by the Department starting on December 21, 2012, with periodic submittals ongoing through April 4, 2014, and prepared by GZA.
 61. Notice to Abutters and Interested Parties, Public Meeting to Discuss DRAFT Public Involvement Plan, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on January 14, 2013, and prepared by GZA;
 62. Presentation from January 29, 2013, Public Involvement Plan Meeting, received by the Department on January 29, 2013, and prepared by GZA;
 63. Meeting Summary - January 29, 2013, Draft Public Involvement Plan, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on February 15, 2013, and prepared by GZA;
 64. Notice to Abutters and Interested Parties, Community Outreach Session, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on March 4, 2013, and prepared by GZA;
 65. Response to Public Comments, Draft Public Involvement Plan, Former Tidewater MGP and

- Power Plant Site Pawtucket, Rhode Island, received by the Department on March 22, 2013, and prepared by GZA;
66. Supplemental Site Investigation Work Plan, Soil Gas Sampling and Analysis, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on May 2, 2013, and prepared by GZA;
 67. Notice to Abutter, Supplemental Site Investigation Work Plan Addendum – Soil Gas Quality, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on June 13, 2013, and prepared by GZA;
 68. Fact Sheet - Tidewater Site, Assessing the Quality of Soil Gas Near Neighboring Properties, received by the Department on August 28, 2013, and prepared by GZA;
 69. Site Investigation Report Addendum, Soil Gas Sampling and Analysis, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on October 1, 2013, and prepared by GZA;
 70. Public Involvement Plan, Former Tidewater Facility and Former Power Plant, Tidewater and Merry Streets, Pawtucket, Rhode Island, received by the Department on October 15, 2013, and prepared by GZA;
 71. Supplemental Site Investigation Work Plan, Limited Soil and Groundwater Sampling and Analysis, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on February 7, 2014, and prepared by GZA;
 72. Supplemental Site Investigation Work Plan, Limited Soil and Groundwater Sampling and Analysis, Former Tidewater Facility Pawtucket, Rhode Island, received by the Department on February 26, 2014, and prepared by GZA;
 73. Meeting Summary – March 6, 2013, Soil Gas Data, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on March 26, 2014, and prepared by GZA;
 74. Site Investigation Report Addendum, Focused Soil and Groundwater Sampling and Analysis, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on July 9, 2014, and prepared by GZA;
 75. Fact Sheet - Tidewater Site, Assessing the Quality of Soil and Groundwater near the Natural Gas Regulator Station, received by the Department on July 21, 2014, and prepared by GZA;
 76. Summary of Soil Gas Sampling – SG-105S, Former Tidewater Facility, Pawtucket, Rhode Island, received by the Department on October 1, 2014, and prepared by GZA;
 77. Groundwater Monitoring Report - 2013, Former Tidewater Facility and Merry Street, Pawtucket, Rhode Island, received by the Department on October 31, 2014, and prepared by GZA;

78. Planned Building Demolition, Former Tidewater MGP and Power Plant Site, Pawtucket, Rhode Island, received by the Department on April 27, 2015, and prepared by GZA;
79. Fact Sheet - Removal Of On-Site Structures, Former Tidewater MGP and Power Plant Site, received by the Department on June 8, 2015, and prepared by GZA;
80. Release Notification, Former Tidewater Manufactured Gas Plant (MGP), Case Number 95-002, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on August 24, 2015, and prepared by GZA;
81. Release Notification, Former Tidewater Manufactured Gas Plant (MGP), Case Number 95-002, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on September 23, 2015, and prepared by GZA;
82. Groundwater Monitoring Report - 2014, Former Tidewater Facility and Merry Street, Pawtucket, Rhode Island, received by the Department on December 7, 2015, and prepared by GZA;
83. Short Term Response Action Plan – South Washout Area, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on January 25, 2016, and prepared by GZA;
84. Annual Groundwater Monitoring Report - 2015, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on April 22, 2016, and prepared by GZA;
85. Short Term Response Action (STRA) Completion Report – South Washout Area, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on September 23, 2016, and prepared by GZA;
86. Annual Groundwater Monitoring Report - 2016, Former Tidewater Facility, 200 Taft Street, Pawtucket, Rhode Island, received by the Department on January 18, 2017, and prepared by GZA; and
87. Site Investigation Report (SIR) Addendum, Former Tidewater Facility, RIDEM File No. SR-26-0934A, RIDEM Case Number: 95-022 Street, Tidewater Street, Pawtucket, Rhode Island, received by the Department on May 23, 2017, and prepared by GZA.

The Department regards the information provided in these reports as meeting the requirements pursuant to Rule 7.08 of the Remediation Regulations. The preferred remedial alternative proposes the following remedy:

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). Physical containment of Non-Aqueous Phase Liquid (NAPL) contamination on the Site by the construction of a 1,400 linear foot 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, but will include wing walls and integral NAPL recovery wells immediately north and south of the transmission tower area to facilitate NAPL containment. 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. The proposed engineered cap shall be subject to review and approval by the Rhode Island Coastal Resources Management Council (RI CRMC) and the Department's Office of Water Resources (OWR) Water Quality Certification (WQC) Program for consistency with the requirements of those programs, and the final approved design shall be described in the Remedial Action Work Plan (RAWP) for the Site.

Performance of periodic focused NAPL collection and recovery immediately upgradient of the containment wall from a series of newly installed shallow and deep collection and recovery well pairs and other site monitoring wells where NAPLs have historically accumulated. Light Non-Aqueous Phase Liquid (LNAPL) recovery activities will be performed either manually via periodic removal with peristaltic pumps or passively with oil collection traps installed within the wells. Dense Non-Aqueous Phase Liquid (DNAPL) recovery activities will be performed manually via periodic removal with peristaltic pumps or suction pumps. Performance of periodic NAPL gauging and groundwater quality monitoring from a network of newly installed shallow/deep NAPL monitoring wells downgradient of the containment wall and select monitoring wells on the Site. Performance of Limited Design Investigations (LDIs) to estimate potential effects of the containment wall on local groundwater mounding and flow patterns, and to evaluate the potential existence of subsurface obstructions to construction of the containment wall or its proposed layout. Performance of a utility survey to determine the location and depth of active utilities present on the Site in order to properly incorporate these utilities into the design of the engineered cap and containment wall. Calculation and modeling of potential emissions from the remediation and construction activities to evaluate the applicability of the Department's Office of Air Resources (OAR) Air Pollution Control Regulation No. 9 - Air Pollution Control Permits. Design and implementation of an air quality control and monitoring program that is protective of both on-Site workers and the surrounding community during the remedy implementation phase of the project.

An Environmental Land Usage Restriction (ELUR) will be recorded on the property deed, restricting certain activities on the entire Site and ensuring that the engineered cap and containment wall are not disturbed. The ELUR will require the performance of annual inspections to document the status of the ELUR and the condition of the engineered controls. The ELUR shall include a Soil Management Plan (SMP), which will address potential future activities that disturb on-site soils. The ELUR, once approved by the Department, shall be recorded for the property (Plat Map 65B / Lots 647, 648 & 649) in the Land Evidence Records for the City of Pawtucket and a recorded copy forwarded back to the Department.

Please be advised that this Program Letter is limited to the investigation and proposed remediation of the terrestrial upland portion of the Site, and does not preclude additional investigation and/or remediation activities related to sediments impacted by historic or ongoing releases of hazardous materials at or from the Site.

The Department acknowledges that the site investigation activities are complete, except for the Limited Design Investigation activities associated with the design of the containment wall and engineered caps. The Department is not yet able to formally approve the SIR, however, due to the necessity to first allow the public to comment on the technical feasibility of the preferred remedial alternative. Rules 7.07(A)(ii) and 7.09 of the Remediation Regulations outline the requirements for public notice after the SIR is deemed complete to all abutting property owners, tenants, easement holders, the municipality and the Environmental Justice Focus Area, regarding the substantive findings of the completed investigation and the opportunity for public review and comment on the technical feasibility of the preferred remedial alternative. Please submit a draft notification to the Department via E-mail for review and approval prior to distribution. A boilerplate notification to be distributed can be found online at <http://www.dem.ri.gov/programs/wastemanagement/site-remediation/index.php>. The Department will require a copy of the approved public notice letter and a list of all recipients upon issuance.

The Department will formally approve the SIR in the form of a Remedial Decision Letter (RDL) once Public Notice is completed and upon Department approval of all final responses to relevant public comments. At that point, the Department will require submission of the Remedial Action Work Plan (RAWP) and draft versions of the ELUR and SMP, for review and approval in accordance with Sections 8.00 and 9.00 of the Remediation Regulations. Upon receipt of the RDL, be prepared to submit the Remedial Action Approval Application Fee of one thousand dollars (\$1,000.00) in check form made payable to General Treasurer -State of Rhode Island directly to the Office of Management Services.

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.

Sincerely,



Joseph T. Martella II
Senior Engineer
Office of Waste Management

cc: Kelly Owens, RIDEM/OWM
Ronald Gagnon, RIDEM/OCTA
Ruth Gold, RIDEM/OAR
Neil Personeus, RIDEM/OWR/WQC
Barbara Morin, RIDOH/Center for Healthy Homes & Environment
Tracy A. Silvia, RI CRMC

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
Mary Murray, Francis J. Varieur Elementary School
Dania Alejandra Flores-Heagney, EJLRI
Michele Leone, National Grid
James J. Clark, GZA