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May 26, 2016
GZA File No. 03.0033554.00

Mr. Joseph Martella
RI Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Re: Proposed Upcoming Groundwater Monitoring Activities
642 Allens Avenue Former MGP Site
Providence, Rhode Island
RIDEM Case No. 98-004 / Site Remediation File No. SR-28-1152

Dear Mr. Martella:

On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is pleased to present to the Rhode Island Department of Environmental Management (RIDEM) a summary of proposed upcoming groundwater monitoring activities at the Site.

As discussed at our February 17, 2016 and April 20, 2016 meetings, several large facility projects are proposed at the Site, certain of which are scheduled to begin in July 2016. Based on our discussions, National Grid plans on submitting Short Term Response Action Plans (STRAPs) for these projects to the RIDEM Office of Waste Management for review and approval. Several of these projects will likely entail grade changes and/or disturbance to the ground surface, thus impacting certain of the existing groundwater monitoring well network at the Site. This letter provides a summary of proposed modifications to the groundwater monitoring activities in anticipation of these redevelopment projects. Specifically, the following presents the proposed closure of certain existing monitoring wells (pre-construction) and the proposed interim groundwater monitoring program (during construction), as well as a brief discussion of the proposed post-development re-installation of certain monitoring wells and the proposed post-development groundwater monitoring program.

Site Description and History

The Site is located at 642 Allens Avenue in the southeastern portion of the City of Providence, Rhode Island and is identified as Assessor's Plat (A.P.) 56, Lots 5, 273, 316 and 317, and A.P. 101, Lot 1. The Site consists of approximately 42 acres with frontage on Allens Avenue to the west and bounded to the east by the Providence River. It is adjoined to the northwest by Motiva/Texaco, and to the south by Terminal Road, the former Sun Oil/Providence Port facility, and New England Bituminous Terminal Corporation. Currently, active natural gas regulation and distribution, gas construction storage, a compressed natural gas (CNG) fueling station, (LNG) storage and distribution, and cement storage and distribution activities are conducted at the 642 Allens Avenue property. The below table presents a summary of the Site current use:



A.P.	Lot	Current Owner	Address	Current Use(s)
101	1	National Grid	642 Allens Avenue 670 Allens Avenue	Natural Gas Construction Storage Natural Gas Regulation and Distribution CNG Fueling Station
56	5	National Grid	642 Allens Avenue	Natural Gas Construction Storage Natural Gas Regulation and Distribution
56	273	National Grid	139 Terminal Road	Cement Storage and Distribution
56	316	National Grid	121 Terminal Road	LNG Facility
56	317	National Grid	121 Terminal Road	Access Road

The Site is generally level with gentle slopes towards the Providence River. The Site is entirely enclosed and secured by chain-link fencing and barbed wire. Based on several rounds of investigations performed at the Site, subsurface conditions generally consists of urban fill underlain by organic silt, glacial outwash and glacial till. The depth to bedrock is generally more than 100 feet below ground surface (bgs). Groundwater is generally encountered within the fill unit, is classified as GB or not suitable for drinking water use without treatment, and flows towards the tidally influenced Providence River.

A United States Army rifle range operated at the Site in the late 1800s, prior to the use of the Site as a MGP. From 1910 until 1954, a MGP operated at the Site producing coal gas, carbureted water gas, and high-BTU oil gas. MGP by-products were routinely managed through recovery, storage, recycling, reprocessing, and resale. Such by-products included coke, coal tar, ammonia, toluene, and benzene. B.P. Clapp operated an ammonia works at the 642 Allens Avenue property beginning in 1910, and managed the recycling and sale of ammonia by products. The United States Government operated a toluene facility at the Site for a short period of time during 1918. By 1954, coal gasification operations at the Site had ceased. From 1952 until the 1960s, a liquefied petroleum gas distribution plant operated on the Site. Gulf Oil had a facility at the Site to store kerosene from 1957 to 1971. A Liquefied Natural Gas (LNG) facility has operated on the eastern and southeastern portions of the Site since 1972. The southeastern portion of the Site has been utilized for cement storage and distribution since 1961. Propane storage and distribution occurred at the Site from the 1960s to the 1980s for peak shaving purposes.

Regulatory History

RIDEM issued a Letter of Responsibility (LOR) dated February 13th, 1998 to Providence Gas Company. The Site was listed as State Site #98-004 (RIDEM File No. SR-28-1152) following the issuance of the LOR.

The Site is listed with RIDEM due to certain soil and groundwater impacts at concentrations in excess of Method 1 standards as defined in the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Resources last amended in November 2011 (Remediation Regulations). Investigation activities have been conducted at the Site in several phases since 1994 and have been documented in several reports submitted to RIDEM. Constituents detected include, total petroleum hydrocarbons (TPH), cyanide, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and certain inorganic compounds (primarily arsenic and lead). Sporadic observations of light non-aqueous phase liquids (LNAPL) have been made in certain Site monitoring wells. In addition, residual materials have been observed in former manufactured gas processing areas.

A Soil Management Plan (SMP) was established for the Site and submitted to RIDEM on August 31, 2010; a revised SMP was later submitted on September 12, 2012. The SMP was prepared to establish procedures to be followed should construction or maintenance activities require the need to manage soils and/or groundwater. The SMP



includes procedures for soil screening/disposal requirements, soil stockpile management and erosion controls, dust controls, capping requirements, decontamination protocols for equipment leaving the Site, requirements for import of soils, basic dewatering guidelines and management of non-soils (such as asphalt or concrete). The SMP is similar to what would be recorded with an Environmental Land Usage Restriction (ELUR) and has been followed at the Site for numerous facility projects.

As discussed during a November 2013 meeting with RIDEM and subsequent project communications with the Department, GZA, on behalf of National Grid, is currently preparing a Site Investigation Report (SIR) Addendum to document results of more recent (2014) investigation efforts. The SIR Addendum will also present the preferred remedial approach for the Site and will consist of progressive engineered capping to be performed concurrent with facility upgrades, groundwater monitoring and institutional controls. The SIR Addendum is anticipated to be submitted to RIDEM in late summer 2016. The results of recent groundwater monitoring at the Site will be summarized in the SIR Addendum.

Existing Groundwater Monitoring Program

VHB (on behalf of the New England Gas Company) implemented a groundwater monitoring program at the Site in 2003. The groundwater monitoring program was briefly described in the December 1998 RAWP submitted to RIDEM. The groundwater monitoring program was altered several times between 2003 and 2014 to reflect ownership changes and availability of monitoring wells at the Site.

The existing groundwater monitoring program at the Site was implemented in 2015 (after the completion of GZA's more recent 2014 investigation effort) and consists of semi-annual full gauging round of all on-Site monitoring wells (currently seventy-four (74) monitoring wells) including NAPL recovery (if detected) and annual groundwater sampling of select monitoring wells (twenty-one (21) wells). The monitoring wells sampled on an annual basis were selected based on aerial coverage and a review of historic data. Fourteen (14) of the monitoring wells are located on the western portion of the Site currently occupied by the natural gas regulator (RCA-1, RCA-3, RCA-11, RCA-12R, VHB-1, VHB-3, VHB-6, VHB-7, VHB-8, VHB-10, VHB-21, GZ-301D, GZ-304D and GZ-309D) and seven (7) are located at the LNG facility (RCA-22, RCA-28, RCA-36, RCA-38, VHB-13, GZ-314D and GZ-314D). Wells included in the existing groundwater monitoring program are shown on the attached Figure 1 – *Existing Groundwater Monitoring Program*. Groundwater samples are collected via low-flow sampling protocol. During purging of the wells, groundwater is monitored for temperature, conductivity, dissolved oxygen, pH, oxidation-reduction potential (ORP), and turbidity in an effort to obtain stabilization of the field indicator parameters prior to sampling. Groundwater samples are submitted for analysis of VOCs via EPA Method 8260B.

The May 2016 groundwater monitoring round will be the last round completed under the existing groundwater monitoring program. Results will be documented in the SIR Addendum.

Proposed June 2016 Monitoring Well Decommissioning

Based on the current schedule and disturbance limits of the planned facility projects, National Grid proposes to decommission thirty-eight (38) of the seventy-four (74) available monitoring wells located at the Site: RCA-3, RCA-5, RCA-11, RCA-14, RCA-20, RCA-32, RCA-38, RCA-40, VHB-3, VHB-6, VHB-7, VHB-8R, VHB-10, VHB-13, VHB-18, VHB-21, VHB-22, VHB-23, CHES RW-1, CHES RW-2, CHES RW-3, CHES RW-4, CHES RW-5, RW-1, U-1, GZ-204A, GZ-216, GZ-311D, GZ-312D, GZ-312S, GZ-313D, GZ-314D, GZ-314S, GZ-315D, GZ-318D, GZ-320D, GZ-401, and GZ-403. Two (2) inactive monitoring wells (RCA-7 and RCA-13) will also be decommissioned during this effort. Thirty-six



(36) of the on-Site available monitoring wells will not be decommissioned. Locations of the proposed wells to be decommissioned are shown on the attached Figure 2 – *Monitoring Well Decommissioning Plan*. Each well will be decommissioned in accordance with Appendix 1 of RIDEM's June 2010 Groundwater Quality Rules. If possible, the PVC riser and screen sections shall be removed and the borehole will be filled with grout. If the PVC riser and screen sections cannot be removed, the PVC riser and screen segments shall be cut off at least 4 feet below the ground surface and the monitoring well will be decommissioned utilizing grout with the tremie method. A GZA field engineer will be on the Site to record well decommissioning activities and a decommissioning log will be prepared for each location.

A portion (thirteen (13) monitoring wells) of the proposed decommissioning work falls within 200-feet of the coastal feature, and as such, is subject to the jurisdiction of the Coastal Resource Management Council (CRMC). GZA will prepare a CRMC permit application package associated with completion of the proposed decommissioning program. Due to the relatively non-invasive nature of the work, we have assumed that completion of the proposed subsurface exploration program will fall under a "Finding of No Significant Impact" (FONSI).

The proposed decommissioning work will be completed in accordance with a Site Specific Health and Safety Plan that addresses the applicable requirements of 29 CFR 1920.120 and 1926.65. These procedures will be followed to be protective of worker safety as well as safety to nearby receptors. Prior to work beginning, an exclusion zone will be set-up around the equipment to limit access to the work area. This exclusion zone will be maintained and modified as needed during the proposed work activities. All spoils from the work will be immediately containerized within labeled and sealed 55-gallon drums for future off-Site transport and disposal. During intrusive operations, GZA personnel will also collect periodic TVOC readings of worker breathing zone and work zone perimeter (i.e., 50 feet from the drill rig). For worker breathing zone, the TVOC action limit will be set at 20 ppmv. The work zone perimeter action limit will be set at 1 ppmv TVOC. In the event that these levels are triggered, work will immediately stop and a different course of action will be determined by GZA. All excess liquids and solids from well decommissioning activities shall be containerized in 55-gallon drums for off-Site disposal at an appropriate facility.

Upon completion of this work, a summary letter detailing the well decommissioning effort performed will be submitted to RIDEM.

Proposed Interim Groundwater Monitoring Program

While facility redevelopment activities are on-going, National Grid proposes an interim groundwater monitoring program which includes the remaining available monitoring wells (i.e., those thirty-six (36) wells not decommissioned as described above). The interim groundwater monitoring program will consist of a semi-annual full gauging round and NAPL recovery (if detected) of the remaining thirty-six (36) available monitoring wells and annual groundwater sampling of select monitoring wells. The monitoring wells sampled on an annual basis were selected to provide adequate aerial coverage based on a review of historic data. Seven (7) of the monitoring wells are located within the natural gas regulation portion of the Site (RCA-1, RCA-12R, RCA-15, VHB-1, GZ-301D, GZ-304D and GZ-309D) and six (6) are located at the LNG facility (RCA-22, RCA-34, RCA-36, VHB-20, GZ-201, and GZ-319D). Wells included in the interim groundwater monitoring program are shown on the attached Figure 3 – *Interim Groundwater Monitoring Program*. Groundwater samples will be collected consistent with the current program described above. Purge water generated during groundwater sampling will be field-screened for total VOCs with a PID and then placed in 55-gallon drums for subsequent characterization and off-Site disposal at a



National Grid approved facility. Any recovered NAPL will be segregated from the purgewater to the extent practical, placed in a 55-gallon drum for subsequent characterization and off-Site disposal at a National Grid approved facility.

The interim monitoring program is intended to be implemented until facility projects are completed at the Site. Based on current project schedule, it is expected that the proposed interim groundwater monitoring program will begin in 2017 and continue through 2020, pending regulatory approvals and construction schedules. The results of this interim monitoring will be documented in annual Groundwater Monitoring Reports which will be submitted to RIDEM.

Proposed Post-Development Monitoring Well Installation and Groundwater Monitoring Program

After facility projects are completed at the Site (currently anticipated in 2020, however, the construction window may extend further than the anticipated schedule), select monitoring wells will be replaced/installed and the proposed post-development groundwater monitoring program will be implemented. At this time, National Grid proposes to install fifteen (15) replacement monitoring wells (RCA-3R, RCA-5R, RCA-40R, VHB-3R, VHB-7R, VHB-10R, VHB-18R, VHB-21R, VHB-22R, VHB-23R, GZ-311DR, GZ-313DR, GZ-315DR, GZ-318D and GZ-320DR) and four (4) new monitoring wells (GZ-500S, GZ-500D, GZ-501S and GZ-501D) to be completed at the locations shown on Figure 4 – *Post-Development Monitoring Well Installation Plan and Groundwater Monitoring Program*.

Following installation of the wells, a post-development groundwater sampling program will be initiated similar to the existing monitoring program.

As the proposed post-development well installation and groundwater monitoring work is expected to be at least approximately three (3) years away, it is anticipated that GZA, on behalf of National Grid, will submit a *Site Investigation Work Plan (SIWP)* with final proposed locations to RIDEM for review and approval prior to performing this work. The SIWP will also include a summary of the proposed groundwater monitoring program, including sampling frequency and parameters.

Should you have any questions or comments regarding the information presented herein, please do not hesitate to contact the undersigned or Amy Willoughby from National Grid at (401) 258-5410.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Sophia Narkiewicz, P.E.
Project Engineer

Margaret S. Kilpatrick, P.E.
Senior Project Manager

James J. Clark, P.E.
Senior Principal



MSK/tlb
Attachments:

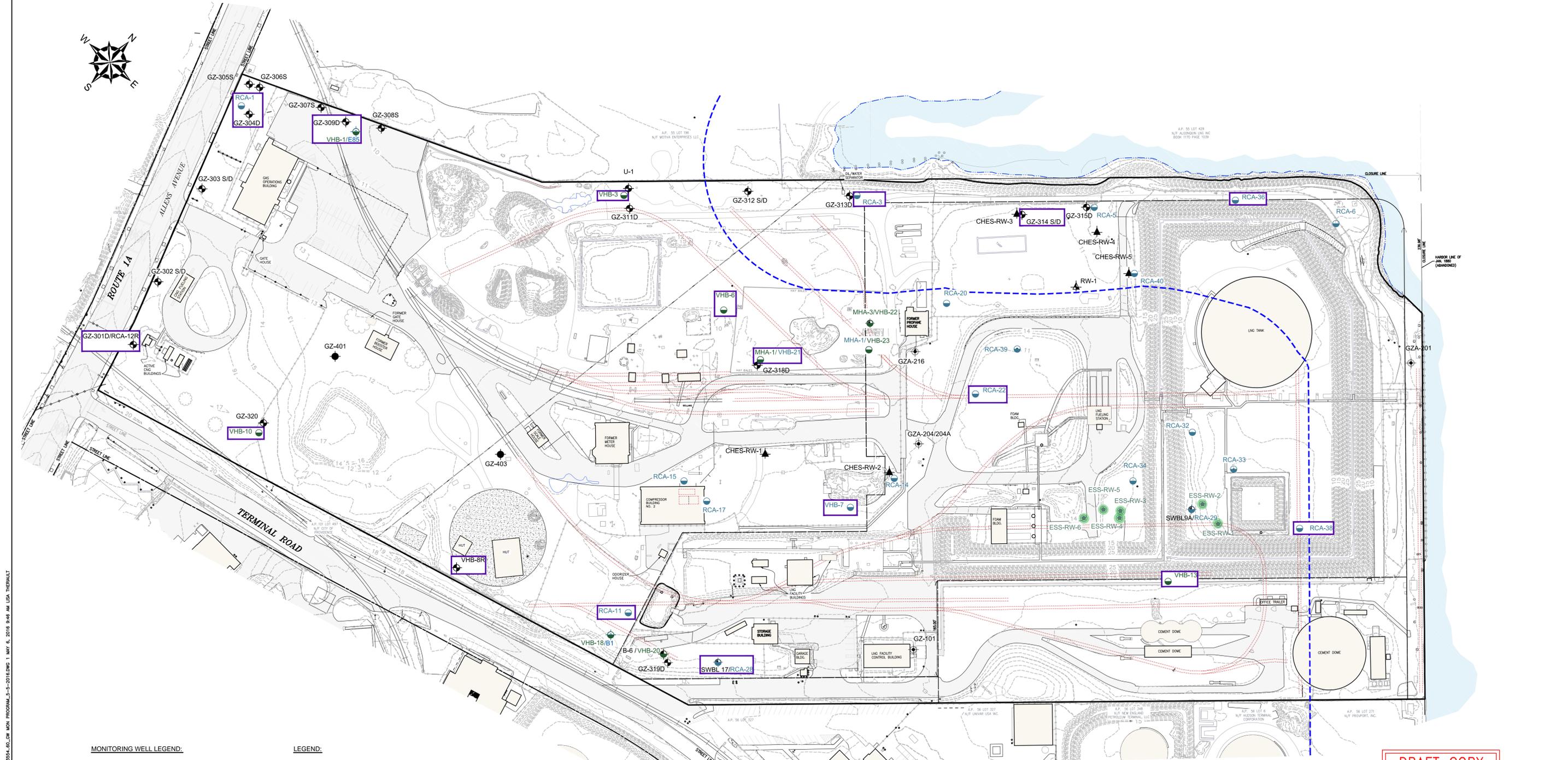
- Figure 1 *Existing Groundwater Monitoring Program*
- Figure 2 *Monitoring Well Decommissioning Plan*
- Figure 3 *Interim Groundwater Monitoring Program*
- Figure 4 *Post-Development Monitoring Well Installation Plan and Groundwater Monitoring Program*

cc: Amy Willoughby, National Grid

\\GZAProv1\Jobs\ENV\33554.abu\Work\Monitoring Wells\Summary Letter\33554 Groundwater Monitoring Summary Letter 5-26-16 Final.docx



FIGURES



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MONITORING WELL LEGEND:

- GZ-401 ● MONITORING WELL INSTALLED BY GZA IN 2015
- GZ-314 S/D ● MONITORING WELL INSTALLED BY GZA IN 2014
- GZA-206 ● MONITORING WELL INSTALLED BY GZA IN 2005
- VHB-7 ● MONITORING WELL INSTALLED BY VHB IN 2002 AND 2003
- F47 ● TEMPORARY WELL POINT INSTALLED BY ESS IN 1999 AND 2000
- 1 ● TEMPORARY WELL POINT INSTALLED BY ESS IN 1999
- RCA-40 ● MONITORING WELL INSTALLED BY ESS IN 1996
- RW-1 ▲ RECOVERY WELL INSTALLED BY CHES OBSERVED BY GZA IN 2014
- CHES-RW-1 ▲ RECOVERY WELL INSTALLED BY CHES OBSERVED BY VHB IN 2002
- ESS-RW-1 ● RECOVERY WELL INSTALLED BY ESS IN 1999 AND 2000
- RECOVERY WELLS
- WELL IS CURRENTLY INCLUDED IN ANNUAL GROUNDWATER MONITORING PROGRAM

LEGEND:

- PROPERTY LINE
- - - INTERIOR PROPERTY LINE
- EXISTING BUILDING
- STEEL POST
- PILING
- EDGE OF WATER
- FENCE
- RAILROAD TRACKS
- - - EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
- - - EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- PAVEMENT
- CONCRETE PAD

GENERAL NOTES:

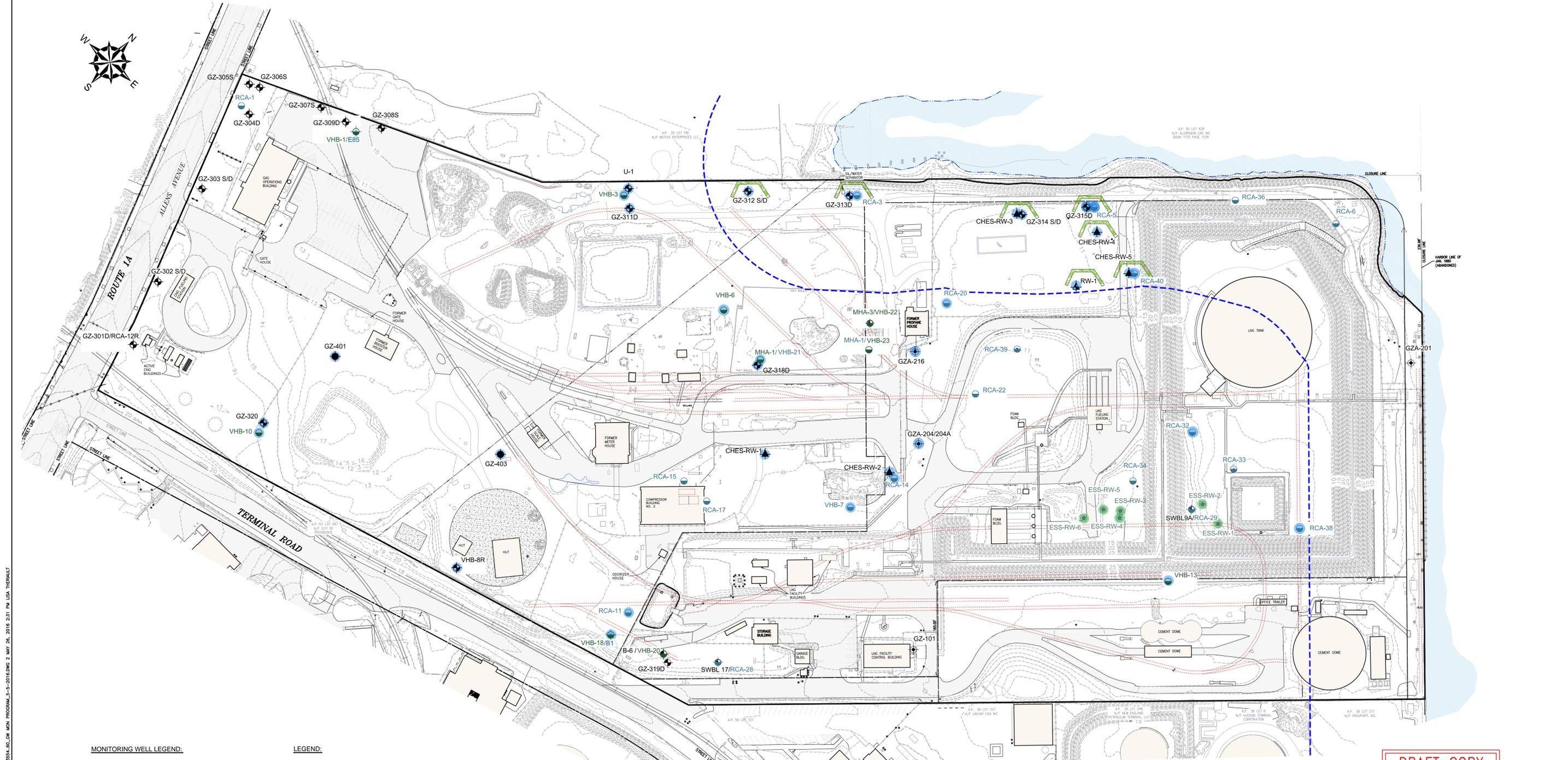
- 1) EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC CAD FILE "ACAD-7257PL.DWG" PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG
 - ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS BETWEEN 2011 AND 2015.
- 2) PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3.
- 3) EXPLORATION LOCATION PLAN WAS DEVELOPED FROM THE FOLLOWING:
 - SITE PLANS PROVIDED BY RCA IN THE RIDEM-SUBMITTED JUNE 28, 1998 "PHASE 1B FIELD CHARACTERIZATION INVESTIGATION" PREPARED ON BEHALF OF THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - SITE PLANS PROVIDED BY VHB IN THE RIDEM-SUBMITTED NOVEMBER 2002 "REMEDIAL ACTION CLOSURE REPORT" PREPARED ON BEHALF OF THE NEW ENGLAND GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - FIGURE 3 "EXPLORATION LOCATION PLAN" PREPARED BY GZA GEOENVIRONMENTAL, INC. (GZA) ON BEHALF OF CHICAGO BRIDGE AND IRON (C&I) IN JULY 2005. PLANS PROVIDED BY NATIONAL GRID.
 - FIGURE 35 "TEST BORINGS UNDER SASSAFRAS POINT PLAT" DATED JUNE 5, 1912 PREPARED BY THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - DRAWING 3 "WHARF FACILITIES - BULKHEAD REBUILDING - CROSS SECTIONS" DATED JANUARY 11, 1973 PREPARED BY PARSONS, BRINCKERHOFF, QUADE AND DOUGLAS ON BEHALF OF THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
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- ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS BETWEEN 2011 AND 2015.
- 4) THE LOCATION OF THE EXPLORATIONS AND MONITORING WELLS AT THE SITE WERE APPROXIMATELY DETERMINED AND HAVE BEEN ALIGNED AND ADJUSTED FOR THE "BEST FIT" AND THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
- 5) HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
- 6) VERTICAL DATUM IS BASED ON NAVD 1988 (MSL) FROM BASE MAPPING PROVIDED BY VHB.
- 7) SELECT PRESENTED SITE UTILITIES WERE TAKEN FROM HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND HAVE BEEN ALIGNED AND ADJUSTED FOR THE "BEST FIT" AND THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED. UTILITIES ARE SHOWN FOR REFERENCE ONLY. OTHER LOCATIONS MAY EXIST.

THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

642 ALLENS AVENUE PROVIDENCE, RHODE ISLAND			
CURRENT (INCLUDING MAY 2016 ROUND) GROUNDWATER MONITORING PROGRAM			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists		PREPARED FOR: nationalgrid	
PROJ MGR: MSK	DESIGNED BY: SDN	REVIEWED BY: SDN	CHECKED BY: SDN
DATE: MAY, 2016	PROJECT NO. 33554.60	DRAWN BY: LDT	SCALE: AS NOTED
		REVISION NO. 0	FIGURE 1
			SHEET NO. 1 OF 4

2016 - GZA - GeoEnvironmental, Inc. - GZA-JA-DWG-33554.60-MKH-T010005-CAD-DWG-GROUNDWATER MONITORING PROGRAM-33554.60-DWG MON PROGRAM-3-5-2016.DWG 1 MAY 6, 2016 9:46 AM LISA THERIAULT



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- WELL PLANNED TO BE DECOMMISSIONED

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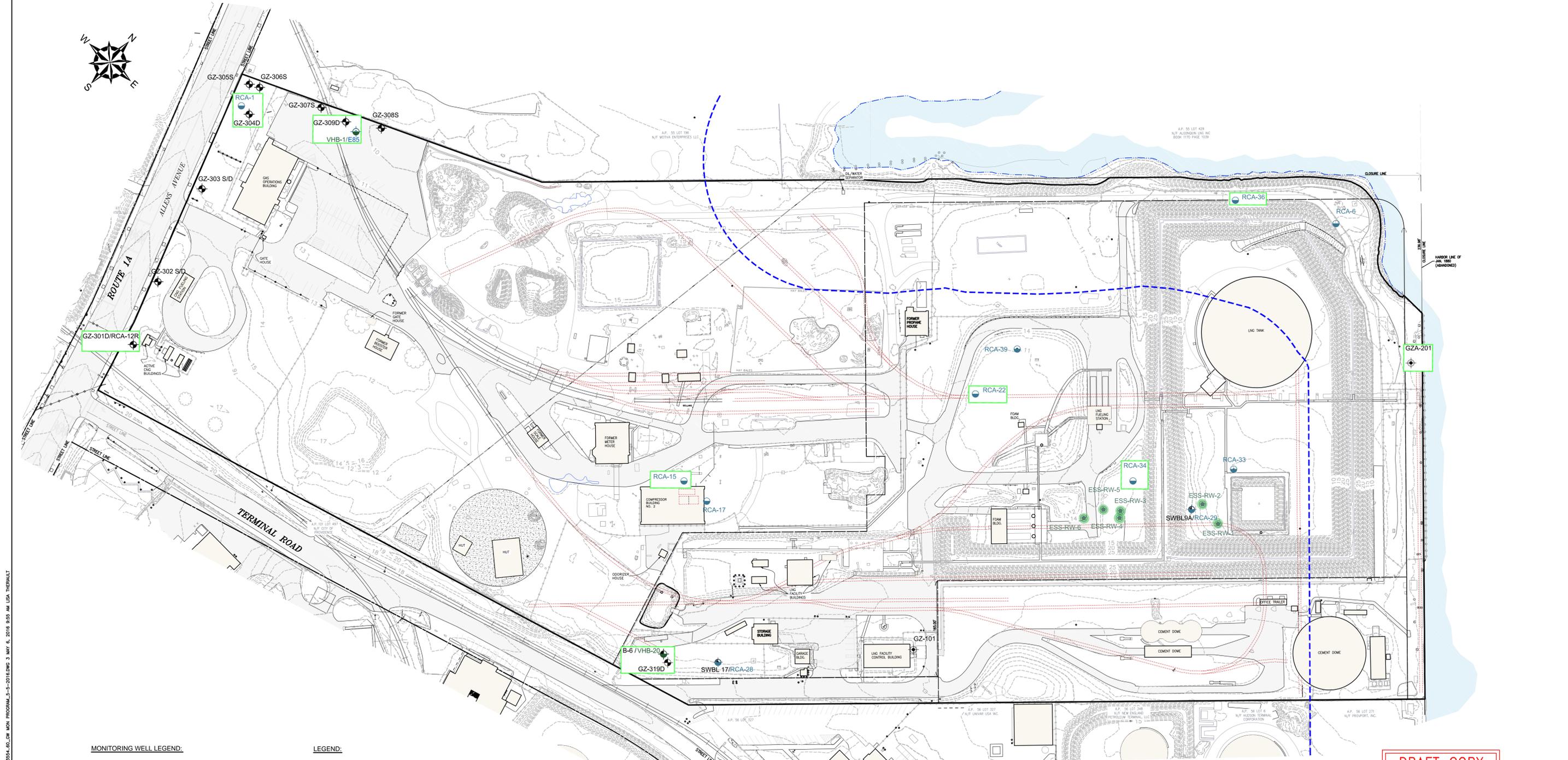
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 - SITE PLANS PROVIDED BY RCA IN THE RIDEM-SUBMITTED JUNE 28, 1998 "PHASE IB FIELD CHARACTERIZATION INVESTIGATION" PREPARED ON BEHALF OF THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
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- 4) THE LOCATION OF THE EXPLORATIONS AND MONITORING WELLS AT THE SITE WERE APPROXIMATELY DETERMINED AND HAVE BEEN ALIGNED AND ADJUSTED FOR THE "BEST FIT" AND THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
- 5) HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
- 6) VERTICAL DATUM IS BASED ON NAVD 1988 (MSL) FROM BASE MAPPING PROVIDED BY VHB.
- 7) SELECT PRESENTED SITE UTILITIES WERE TAKEN FROM HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND HAVE BEEN ALIGNED AND ADJUSTED FOR THE "BEST FIT" AND THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED. UTILITIES ARE SHOWN FOR REFERENCE ONLY. OTHER LOCATIONS MAY EXIST.

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642 ALLENS AVENUE PROVIDENCE, RHODE ISLAND			
MONITORING WELL DECOMMISSIONING PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid www.nationalgrid.com		
PROJ MGR: MSK DESIGNED BY: SDN DATE: MAY, 2016	REVIEWED BY: SDN DRAWN BY: LDT PROJECT NO.: 33554.60	CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0	FIGURE 2 SHEET NO. 2 OF 4



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MONITORING WELL LEGEND:

- GZ-401 ● MONITORING WELL INSTALLED BY GZA IN 2015
- GZ-314 S/D ● MONITORING WELL INSTALLED BY GZA IN 2014
- GZA-206 ● MONITORING WELL INSTALLED BY GZA IN 2005
- VHB-7 ● MONITORING WELL INSTALLED BY VHB IN 2002 AND 2003
- F47 ● TEMPORARY WELL POINT INSTALLED BY ESS IN 1999 AND 2000
- 1 ● TEMPORARY WELL POINT INSTALLED BY ESS IN 1999
- RCA-40 ● MONITORING WELL INSTALLED BY ESS IN 1996
- RW-1 ▲ RECOVERY WELL INSTALLED BY CHES OBSERVED BY GZA IN 2014
- CHES-RW-1 ▲ RECOVERY WELL INSTALLED BY CHES OBSERVED BY VHB IN 2002
- ESS-RW-1 ● RECOVERY WELL INSTALLED BY ESS IN 1999 AND 2000
- RECOVERY WELLS
- WELL IS PLANNED TO BE INCLUDED IN INTERIM ANNUAL GROUNDWATER MONITORING PROGRAM

LEGEND:

- PROPERTY LINE
- - - INTERIOR PROPERTY LINE
- ▭ EXISTING BUILDING
- STEEL POST
- PILING
- EDGE OF WATER
- FENCE
- RAILROAD TRACKS
- - - EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
- - - EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- ▭ PAVEMENT
- ▭ CONCRETE PAD

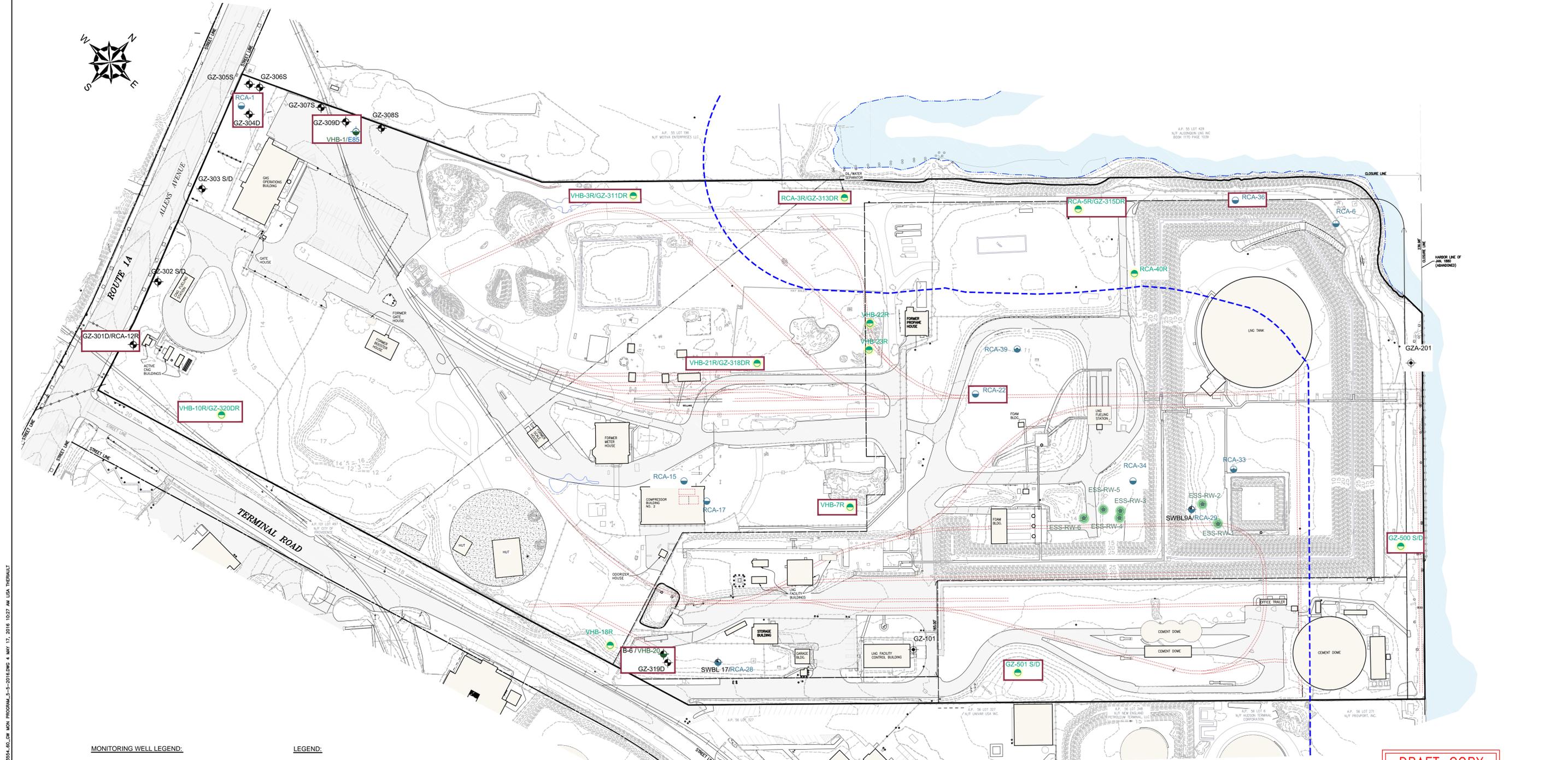
GENERAL NOTES:

- 1) EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC CAD FILE "ACAD-7257PL.DWG" PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG
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- 2) PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3.
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 - SITE PLANS PROVIDED BY RCA IN THE RIDEM-SUBMITTED JUNE 28, 1998 "PHASE II FIELD CHARACTERIZATION INVESTIGATION" PREPARED ON BEHALF OF THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - SITE PLANS PROVIDED BY VHB IN THE RIDEM-SUBMITTED NOVEMBER 2002 "REMEDIAL ACTION CLOSURE REPORT" PREPARED ON BEHALF OF THE NEW ENGLAND GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - FIGURE 3 "EXPLORATION LOCATION PLAN" PREPARED BY GZA GEOENVIRONMENTAL, INC. (GZA) ON BEHALF OF CHICAGO BRIDGE AND IRON (C&I) IN JULY 2005. PLANS PROVIDED BY NATIONAL GRID.
 - FIGURE 35 "TEST BORINGS UNDER SASSAFRAS POINT PLAT" DATED JUNE 5, 1912 PREPARED BY THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
 - DRAWING 3 "WHARF FACILITIES - BULKHEAD REBUILDING - CROSS SECTIONS" DATED JANUARY 11, 1973 PREPARED BY PARSONS, BRINCKERHOFF, QUADE AND DOUGLAS ON BEHALF OF THE PROVIDENCE GAS COMPANY. PLANS PROVIDED BY NATIONAL GRID.
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642 ALLENS AVENUE PROVIDENCE, RHODE ISLAND			
INTERIM GROUNDWATER MONITORING PROGRAM			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists	PREPARED FOR: nationalgrid		
PROJ MGR: MSK	DESIGNED BY: SDN	REVIEWED BY: SDN	CHECKED BY: SDN
DRAWN BY: LDT	DATE: MAY, 2016	PROJECT NO.: 33554.60	SCALE: AS NOTED
			REVISION NO.: 0
			FIGURE 3
			SHEET NO. 3 OF 4



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MONITORING WELL LEGEND:

- GZ-401 ● MONITORING WELL INSTALLED BY GZA IN 2015
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- CHES-RW-1 ▲ RECOVERY WELL INSTALLED BY CHES OBSERVED BY VHB IN 2002
- ESS-RW-1 ● RECOVERY WELL INSTALLED BY ESS IN 1999 AND 2000
- RECOVERY WELLS
- VHB-7R ● PROPOSED NEW / REPLACEMENT WELLS (POST-DEVELOPMENT)
- WELL IS PLANNED TO BE INCLUDED IN POST-DEVELOPMENT GROUNDWATER MONITORING PROGRAM

LEGEND:

- PROPERTY LINE
- - - INTERIOR PROPERTY LINE
- EXISTING BUILDING
- STEEL POST
- PILING
- EDGE OF WATER
- FENCE
- RAILROAD TRACKS
- - - 10' - EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
- - - 11' - EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- PAVEMENT
- CONCRETE PAD

GENERAL NOTES:

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642 ALLENS AVENUE PROVIDENCE, RHODE ISLAND			
POST-DEVELOPMENT WELL REPLACEMENT AND GROUNDWATER MONITORING PROGRAM			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists	PREPARED FOR: nationalgrid	FIGURE 4	
PROJ MGR: MSK DESIGNED BY: SDN DATE: MAY, 2016	REVIEWED BY: SDN DRAWN BY: LDT PROJECT NO.: 33554.60	CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0	SHEET NO. 4 OF 4

2016 - GZA GeoEnvironmental, Inc. - GZA-JA-DWA-13554.60-MKH-TDRS-CAD-DWG-GROUNDWATER MONITORING PROGRAM-13554.60-DWG MON PROGRAM-1-5-2016.DWG 4 MAY 17, 2016 10:27 AM LISA THERIAULT