

REMEDIAL ACTION WORK PLAN

Case File No. SR-09-1958

Residential Property

33 Exchange Street
Plat 85/1, Lots 87 & 382
East Greenwich, Rhode Island

Prepared For:

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3 Cole Circle
East Greenwich, Rhode Island 02818

Prepared By:



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Project No. **201942**

May 2021

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

TABLE OF CONTENTS

| | | |
|------|---|----|
| 1.0 | INTRODUCTION..... | 3 |
| 1.1 | Previous Environmental Investigations | 3 |
| 1.2 | Site and Project Description | 5 |
| 2.0 | REMEDIAL OBJECTIVES (Section 1.10.2) | 5 |
| 3.0 | REMEDIAL ACTION WORK PLAN (Section 1.10.1) | 6 |
| 3.1 | Remedial Objectives (Section 1.10.02) | 6 |
| | 3.1.1. Groundwater Objectives (Section 1.10.02, 1) | 6 |
| | 3.1.2. Surface Water and Sediment Objectives (Section 1.10.02, 2)..... | 6 |
| | 3.1.3. Soil Objectives (Section 1.10.02, 3)..... | 6 |
| | 3.1.4. Air Objectives (Section 1.10.02, 4)..... | 7 |
| 3.2 | Proposed Remedy (Section 1.10.03)..... | 7 |
| 3.3 | Remediation of Impacted Groundwater (Section 1.10.04) | 9 |
| 3.4 | Limited Design Investigation (Section 1.10.05) | 9 |
| 3.5 | Points of Compliance (Section 1.10.06)..... | 9 |
| 3.6 | Proposed Schedule For Construction and Remediation (Section 1.10.07)..... | 9 |
| 3.7 | Contractors/Consultants (Section 1.10.08) | 9 |
| 3.8 | Site Plan (Section 1.10.09) | 10 |
| 3.9 | Design Standards and Technical Specification (Section 1.10.10) | 10 |
| | 3.9.1 Air Specifications..... | 11 |
| | 3.9.2 Groundwater Specifications | 11 |
| | 3.9.3 Soil Specifications | 11 |
| 3.10 | Set-Up Plans (Section 1.10.11)..... | 11 |
| 3.11 | Effluent Disposal (Section 1.10.12)..... | 11 |
| 3.12 | Contingency Plan (Section 1.10.13) | 12 |
| 3.13 | Operating Log (Section 1.10.14) | 12 |
| 3.14 | Security Procedures (Section 1.10.15)..... | 12 |
| 3.15 | Shut-Down, Closure and Post-Closure Requirements (Section 1.10.16)..... | 12 |
| 3.16 | Institutional Controls and Notices (Section 1.10.17)..... | 12 |
| 3.17 | Compliance Determination (Section 1.10.18) | 13 |
| 3.18 | Certification Requirements..... | 14 |

FIGURES:

- Figure 1: Location Plan
- Figure 2: Tax Assessor’s Map
- Figure 3: Site Plan
- Figure 4: Building Plan
- Figure 5: Site Capping Plan
- Figure 6: Wash Station Design

APPENDICES:

- Appendix A Soil Management Plan
- Appendix B Operating Log

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

1.0 INTRODUCTION

Redwood Environmental Group, LLC (Redwood), on behalf of Grenier Properties, LLC of East Greenwich, Rhode Island (property owner), has prepared this Remedial Action Work Plan (RAWP) and Soil Management Plan (SMP) in accordance with the *Rhode Island Department of Environmental Management's (RIDEM's) Office of Land Revitalization & Sustainable Materials Management (OLRSMM) re-codified 250-RICR-140-30-1, the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations)*, consistent with the RI Administrative Procedures Act for the properties at 32 & 33 Exchange Street, East Greenwich, Rhode Island (the Site). The objective of the RAWP is to document how remediation of soil containing Lead in excess of RIDEM's Method 1 Residential Direct Exposure Criteria (RDEC) and/or, Industrial/Commercial Direct Exposure Criteria (I/CDEC) and/or GB Leachability Criteria (GBLC) will be implemented on the Site identified by Town of East Greenwich Tax Assessor's Plat Map 85/1, Lot 87 and Plat 85/1, Lot 382, corresponding to 32 and 33 Exchange Street, respectively. Figure 1 is a Site Location Plan, Figure 2 is a Town of East Greenwich Plat Map, Figure 3 shows the Site Plan (current day), Figure 4 shows the Building Plan, Figure 5 shows the Site Capping Plan and Figure 6 shows the Wash Station Design Plan.

1.1 Previous Environmental Investigations

The following documents represent the existing environmental information for this site:

1. Hazardous Material Release Notification, received by The Rhode Island Department of Environmental Management (RI DEM) on July 23, 2019 and prepared by Redwood;
2. Letter Report, Soil and Ground Water Sampling, Residential Property, 32 & 33 Exchange Street, East Greenwich, Rhode Island 02818, received by RI DEM on July 23, 2019 and prepared by Redwood;
3. Letter Report, Soil and Ground Water Sampling, Residential Property, 32 & 33 Exchange Street, East Greenwich, RI 02818, dated November 29, 2019, received by the Department on January 7, 2020 and prepared by Redwood;
4. Site Investigation Report, received by the RI DEM on January 21, 2020 and prepared by Redwood;
5. SIR Addendum, 32 & 33 Exchange Street, Plat 85/1, Lots 87 & 382, East Greenwich, Rhode Island 02818, received by the Department on May 3, 2020, and prepared by Redwood;
6. Public Comment Response Letter, 32 & 33 Exchange Street, Plat 85/1, Lots 87 & 382, East Greenwich, Rhode Island 02818, received by the Department on July 30, 2020, and prepared by Redwood;
7. SIR Addendum No. 2, RI DEM File - SR-09-1958, Grenier Properties, LLC, received by the Department on July 30, 2020, and prepared by Redwood; and
8. RI DEM Remedial Decision Letter dated March 29, 2021.

In order to meet the requirements of Section 1.10 Remedial Action Work Plan of the RIDEM Remediation Regulations, Redwood prepared a Site Investigation Report (SIR) for the Site dated January 2020. The SIR summarized the findings of an initial soil sampling (June 2019) and subsequent soil and ground water sampling (November 2019). A summary of the investigation activities is provided below.

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

June 2019-Soil Sampling Results-RCRA 8 Metals

Redwood selected 4 points across the Site and using a shovel, dug down approximately 12 to 18 inches into the soil. Soils were then collected from the sidewalls of the hole and placed in laboratory glassware. The soils were delivered to a Rhode Island Certified laboratory for RCRA-8 Metal analysis by U.S. EPA Method 6010. RCRA-8 metals include Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver were identified with concentrations which were compared to RI DEM Residential Direct Exposure Criteria (RDEC) applicable to the Site. Only lead was identified above the RDEC of 150 milligrams per kilograms (mg/kg). Soil samples 201942-SS2-060419 and 201942-SS3-060419 were identified with lead at concentrations of 424 mg/kg and 197 mg/kg, respectively. All other metals listed above were either identified with low level concentrations or concentrations below the laboratory reporting limits for that metal.

June 2019-Soil Sampling Results- VOCs, TPH

Using the same locations where the RCRA-8 Metals soil samples were collected, surface soils were collected from the sidewalls of the hole and placed in laboratory glassware. The soils were delivered to a Rhode Island Certified laboratory for the following analysis:

- Volatile organic compounds (VOCs) by U.S. EPA Method 8260 and
- Total Petroleum Hydrocarbons (TPH) by U.S. EPA Method 8100M

The laboratory results of VOCs and TPH were compared to the RI DEM RDEC applicable to the Site. No VOCs or TPH were identified above RDEC standards applicable to the Site.

Site Investigation Report (SIR)

On November 6, 2019, Redwood was on Site with New England Geotech of Jamestown, Rhode Island to perform three (3) soil borings, of which all were finished as ground water monitoring wells (designated as MW-1, MW-2 and MW-3). The installation performed used a truck-mounted Geoprobe direct-push machine. The object of this investigation was to collect soils samples from surface soils and soils at depth to confirm soil quality as it relates to, SVOCs, PCBs, TPH, VOCs, EPH and VPH. Soil samples were collected continuously from the surface to the water table utilizing 5-foot acetate Geoprobe samplers. Each soil sample was field screened for Total Organic Vapor (TOV) using the jar-headspace technique (plastic soil bags were used instead of jars) and a Photoionization Detector (PID) equipped with a 10.6eV lamp calibrated with isobutylene to a benzene standard. Soils were generally characterized using a Modified Burmiester Classification System and along with PID results, visual and olfactory observations were documented on Boring Logs. In general, SVOCs and PCBs were collected from surface soils and TPH, VOCs, EPH and VPH were collected from depth.

Based on the observed water table depth (14-16 feet), three (3), 1-inch PVC monitoring wells were installed to a depth of approximately 20 feet bgs. The well screen was installed to straddle the water table/soil interface and riser pipe was installed to the ground surface. Filter sand was installed in the annular space to the top of the screen and bentonite seal material installed above the filter sand. A road box was installed at the surface grade.

On November 7, 2019, Redwood personnel were on Site to collect a ground water sample from monitoring well MW-1, MW-2 and MW-3. Prior to sampling, Redwood measured each well for depth to

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

ground water, depth to well bottom and for the presence of separate phase product using an oil/water interface probe (IP). No separate phase product was identified. To sample the well, Redwood utilized low flow sampling equipment including a variable speed peristaltic pump, dedicated silicone tubing and disposable down well plastic tubing. Approximately three (3) well volumes of water were purged from each well before the ground water sample was collected. The ground water was clear to the naked eye in all well purging and sampling. Samples collected did not exhibit unusual odors. The ground water samples were submitted to ESS Lab for VOC analysis by US EPA Method 8260 in laboratory supplied glassware with proper preservation.

In addition to VOC analysis, RI DEM requested EPH and VPH analysis by MA DEP methods. Samples were collected and placed in appropriate laboratory supplied glassware for the aforementioned analysis.

Laboratory results for soils did not identify VOCs, SVOCs, TPH, PCBs VPH or EPH above laboratory reporting limits and considered Non-Detected. No VOCs, VPH or EPH were identified above laboratory reporting limits for the ground water samples and considered to be Non-Detected. As such, the soil and ground water samples were not above regulatory standards applicable to the Site.

As part of the SIR, Redwood incorporated the findings of the June 2019 sampling.

1.2 Site and Project Description

The Site is located at 32 & 33 Exchange Street in a dense residential area of East Greenwich, Rhode Island. According to the Town of East Greenwich Tax Assessor's field cards accessed through the East Greenwich Tax Assessor's website, the Site is comprised of two tax assessor lots including Lots 87 and 382 on the tax assessor's Plat Map 85/1. Together the lots are approximately 0.479 acres in size. The Site is currently owned by Grenier Properties, LLC of East Greenwich, Rhode Island as recorded in the East Greenwich Land Records Book 1393, Page 272 with a recording date of March 22, 2018. The Site is occupied by an abandoned 2-story colonial house with basement and two small sheds. The Site is zoned as LHOD, Local Historic Overlay District.

Proposed development of the Site is a residential condominium project with affordable housing units.

2.0 REMEDIAL OBJECTIVES (Section 1.10.2)

Based on the investigations performed by Redwood at the Site, Redwood has concluded that lead is present in surface soils above regulatory standards applicable to the Site. Section 1.8.4 (Development of Remedial Alternatives) of the Remediation Regulations, in summary, requires that the SIR contain a minimum of two remedial alternatives other than the no action/natural attenuation alternative.

Initially, Redwood and RI DEM agreed to a remedial alternative that included a combination of excavation and off-site disposal of lead impacted soils, encapsulation of contaminated soils by construction of sitewide engineered controls and implementation of an institutional control in the form of an Environmental Land Usage Restriction (ELUR). However, a cost benefit analysis of this remedial alternative compared to installing geotextile fabric and 1-foot of crushed stone and/or clean fill Site-wide proved that the later was a more cost-effective choice for the project. This remedial objective would provide for the encapsulation of contaminated soils by construction of

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

Site-wide engineered controls and implementation of an institutional control in the form of an ELUR.

Lead impacted soil will be excavated only to provide for installations of foundations and utilities. The contaminated soils will be stockpiled initially and then re-used as backfill around the foundations. The geotextile fabric and 1-foot of clean fill capping scenario will be implemented after backfilling is complete. Some impacted soil will be used to fill a former building foundation at the Site as well. Proposed engineered controls include placement of a geotextile fabric overlain with 1-foot of clean soil/crushed stone, placement of two (2) feet of clean fill material (optional as needed), placement of one 1-foot of clean fill with a 4-inch asphalt cover, in addition to the final building footprint, asphalt pavement and concrete walkways. The ELUR, to be recorded on the property deed, will restrict certain activities on the entire site and will also ensure that the engineered cap is not disturbed. The ELUR will include a post-construction Soil Management Plan (SMP), which will outline the procedures for managing the regulated soils on site should disturbances below the cap be required.

3.0 REMEDIAL ACTION WORK PLAN (Section 1.10.1)

Redwood prepared this RAWP to address requirements of Section 1.10 of the Remediation Regulations. Redwood arranged this RAWP to facilitate RI DEM review by organizing the RAWP to reflect the organization of Section 1.10.0 of the Remediation Regulations. Each of the following sections addresses a specific section of the Remediation Regulations, noting the relevant section in parentheses.

3.1 Remedial Objectives (Section 1.10.02)

The overall remediation objective for soil is to encapsulate impacted Site soils and provide engineered controls at a minimum level of protection consistent with geotextile fabric overlain with 1-foot of clean fill material or equivalent. Proposed engineered controls include placement of a geotextile fabric overlain with 1-foot of clean soil and/or crushed stone, placement of 2-feet of clean fill material (optional), placement of one (1) foot of clean fill with a four (4) inch asphalt cover, in addition to the final building footprint, asphalt pavement and concrete walkways. These remediation activities, in the aggregate, will prevent direct exposure to impacted soils at the Site.

3.1.1. Groundwater Objectives (Section 1.10.02, 1)

The objective for Site groundwater is the applicable GB Groundwater Objectives. As ground water has not been identified with VOCs above standards applicable to the Site, no active remediation of ground water will be performed as part of this RAWP.

3.1.2. Surface Water and Sediment Objectives (Section 1.10.02, 2)

As no impacts to surface water or sediment exist, remediation of surface water or sediment is not required.

3.1.3. Soil Objectives (Section 1.10.02, 3)

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

The overall objective for soil remediation is to encapsulate Site impacted soil with engineered barriers as stated in Section 3.1 above. An ELUR will be implemented to maintain Site conditions and restrict activities that might otherwise result in human exposure to the contaminants.

3.1.4. Air Objectives (Section 1.10.02, 4)

The hazardous substances found in soil at the Site is Lead. Lead was identified in the surface soils and these surface soils will be capped Site-wide as stated in Section 3.1 above. Engineered barriers (i.e. geotextile fabric overlain with 1-foot of clean fill or crushed stone, construction of building foundation and asphalt and concrete paved surfaces) will encapsulate the impacted soils. Lead is not expected to affect the air quality after the project completion. During times of impacted soil disturbance as part of the construction activities, air quality monitoring equipment will be utilized to track fugitive dust impacts at the downgradient property boundary.

3.2 Proposed Remedy (Section 1.10.03)

This remedial remedy would encapsulate contaminated soils by construction of Site-wide engineered controls and implementation of an institutional control in the form of an ELUR.

Lead impacted soil will be excavated only to provide for installations of foundations and utilities. The excavated contaminated soils will be re-used as backfill around the foundations. An encapsulating capping scenario will be implemented after backfilling is complete. Some impacted soil will be used to fill a former building foundation at the Site as well. The engineered controls include placement of a geotextile fabric overlain with 1- foot of clean soil/crushed stone, placement of two (2) feet of clean fill material (optional as needed), placement of one 1-foot of clean fill with a 4-inch asphalt cover, in addition to the final building footprint, asphalt pavement and concrete walkways will prevent access to the impacted soils. If excess impacted soils remain at the end of the project, this soil will be disposed of off-Site at a licensed facility, such as the Rhode Island Resource Recovery Corporation (RIRRC) landfill. An ELUR will be recorded on the property deed and will restrict certain activities on the entire Site and will also ensure that the engineered cap is not disturbed. The ELUR will include a post-construction Soil Management Plan (SMP), which will outline the procedures for managing the regulated soils on site should disturbances below the cap be required.

The remedial remedy will be implemented at the start of the project as described in the steps presented below.

Step 1- Install Air Quality Monitoring System and Wash Station

Prior to any work at the Site, the Air Quality Monitoring (AQM) system will be installed to monitor contaminated soil fugitive dust. The system includes two air quality monitoring instruments and one weather station unit. The AQM units will be placed downgradient at the Site perimeter by professionally trained engineers to properly record fugitive dust during the disturbance of contaminated soils. Weekly report of air monitoring data will be uploaded to RI DEM. After capping is complete, the AQM will not be needed unless additional contaminated soils will be disturbed. Should the AQM results suggest contaminated fugitive dust has been generated, a reassessment of best management practices (BMPs) to suppress the dust will be performed.

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

A small wash station will be installed at the entrance to the Site. This station will be used to wash equipment/vehicles before leaving the Site during the period of time that equipment/vehicles are handling or in contact with contaminated soil. After the Site is capped, the wash station will not be needed. If contaminated soils are to be disturbed and equipment/vehicles will be leaving the Site, the equipment/vehicles will utilize the wash station. The wash water will be disposed at a proper facility along with the soil (if any) generated.

Step 2- Demolition of Existing Building

Heavy equipment is expected in the rear of the building to demolish the building and load the debris into roll-off containers. Grenier plans to install geotextile fabric and 1-foot of crushed stone on the south and east sides of the building for heavy equipment, roll off containers and trucks to traverse. The geotextile fabric along with the 1-foot of crushed stone will eliminate the disturbance of the contaminated soils and prevent contaminated fugitive dust generation.

Step 3- Excavation of Foundation for New Building along Exchange Street

A new building with a basement will be located at the entrance to the Site along Exchange Street. A majority of the basement footprint of the new building is within the footprint of the former Site building. Some excavation of contaminated soils will be necessary to fully install the new foundation. Any excess excavated soils will be stockpiled and covered with 6-mil plastic and will eventually be re-used as backfill for the foundation. The elevation of the backfill around the foundation will be 1-foot minus to allow for the installation of the geofabric and 1-foot of clean fill. Any areas outside the footprint of the new building which requires backfill will be filled with Site soils and properly capped. Concurrent with the foundation installation, the new entrance of the Site will be covered with geotextile fabric and capped with either 1-foot of crushed stone or clean fill.

Step 4- Cap Driveway to Rear of Site

Working from west to east, the driveway area (which will be driveway and parking area at project end) to the rear of the Site will be capped with geotextile fabric and either 1-foot of crushed stone or 1-foot of clean fill. This capped area will provide access for vehicles to the rear (eastern portion) of the Site, limit exposure to contaminated soils and limit generation of contaminated fugitive dust.

Step 5- Installation of Three Building Foundations

Foundations will be excavated for three buildings at the rear of the Site. Contaminated soils generated from the foundation excavations will be stockpiled on Site and covered with 6-mil plastic until such time that the soils can be re-used as backfill as stated above in Step 3. These buildings will not have basements. Plastic will be placed over the contaminated soils within the foundation walls and concrete poured to seal the contaminated soils beneath. Contaminated soils generated from the foundation installation will be re-used around the foundations. If excess contaminated soils exist, these soils will be stockpiled and covered with 6-mil plastic for future use below the Site cap or disposed off-Site at a proper facility. Geotextile fabric and 1-foot of clean fill will be installed around the foundations and the rear of the Site capping this portion of the Site. At this time, the entire Site should be capped with geotextile fabric and either 1-foot of crushed stone or clean fill.

Step 6- Utility Installation

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

Utilities will be excavated from Exchange Street to the interior of the Site. Using the geotextile fabric as a guide, clean fill or stone will be removed and temporarily stockpiled for re-use. Excavation of contaminated soils will be performed to install the necessary utilities at the Site. The contaminated soils will be stockpiled on and covered with 6-mil plastic until such time that the soil will be re-used to backfill the utility trenches. The backfill will be to 1-foot minus to allow for the installation of geotextile fabric and 1-foot of clean fill. This process will be performed for all utility trenches on the Site. At this point, the excavation and disturbance of contaminated soils will be complete. The Site will be fully capped with geotextile fabric and 1-foot of stone and/or clean fill and general construction of buildings will commence. The AQM will not be need as disturbance of the contaminated soil will have been completed. If at a future point(s) it is necessary to excavate beneath the cap, the AQM will be utilized for the period of time the contaminated soils are exposed.

3.3 Remediation of Impacted Groundwater (Section 1.10.04)

As ground water has not been identified with constituents above regulatory standards for GB Ground Water Classification areas, no remediation of ground water is planned.

3.4 Limited Design Investigation (Section 1.10.05)

As required by RI DEM in the Letter Response to SIR Public Comments dated August 24, 2020, a Limited Design Investigation (LDI) will be performed as part of the RAWP and include an additional soil sample at the location identified as #2 on attached Figure 3 (Site Plan) where gasoline was allegedly poured on the ground. The sample will be collected from a depth greater than 2 feet below ground surface and analyzed for total petroleum hydrocarbons.

3.5 Points of Compliance (Section 1.10.06)

The points of compliance for soil will be those soils brought to the Site to complete the minimum level of compliance with geofabric and 1-foot of clean fill or 2-foot cover of clean fill, throughout the Site. As some impacted soils will remain in place, the only remaining portion of the soil remedy other than engineering controls to be implemented is obtaining RI DEM approval of the draft ELUR and recording the ELUR in the Town of East Greenwich Land Evidence Records. At the conclusion of the construction at the Site, Redwood will prepare a Site Closure Report summarizing all the remedial activities performed at the Site.

3.6 Proposed Schedule For Construction and Remediation (Section 1.10.07)

This RAWP and attached SMP describe the remedy for the Site and will be implemented at the proposed time of Site construction in 2021. The draft ELUR is being prepared and will be submitted to RI DEM for review once the Remedial Approval Letter has been received by Redwood. Once approved, and at the conclusion of the project, the ELUR will be recorded in the Town of East Greenwich Land Evidence records and a recorded copy will be forwarded to RIDEM within 15 days.

3.7 Contractors/Consultants (Section 1.10.08)

Redwood has conducted site investigations to date and no other consultants are anticipated to be involved in implementation of the remedy with the exception of a consultant to perform fugitive dust

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

monitoring. The planned development of the Site is being handled by a general contractor. Contacts for this remediation project are as follows:

Site Owner: Grenier Properties LLC
3 Cole Circle
East Greenwich, RI 02818
Contact: Mr. Tim Grenier
Phone: (401) 527-0524
Email: greniergroup@cox.net

Lead Environmental Consultant: Redwood Environmental Group, LLC.
10 Elmgrove Avenue
Providence, RI 02906
Contact: Mr. Gary S. Kaufman, Principal/Senior Project Mgr.
Phone: (401) 270-7000
Email: gkaufman@redwoodenv.com

Air Monitoring Consultant: Thielsch Engineering, Inc.
195 Frances Avenue
Cranston, RI 02910
Contact: Matthew Colman, PE
Phone: (401) 467-6454 X 3061
Email: mcolman@thielsch.com

Construction Manager: Grenier Properties LLC
3 Cole Circle
East Greenwich, RI 02818
Contact: Mr. Tim Grenier
Phone: (401) 527-0524
Email: greniergroup@cox.net

Figure

3.8 Site Plan (Section 1.10.09)

A Location Plan is attached as Figure 1. A copy of the Town of East Greenwich Plat Map is included as Figure 2. Figure 3 shows the Site Plan (current day). Figure 4 shows the Building Plan and Figure 5 shows the Site Capping Plan.

3.9 Design Standards and Technical Specification (Section 1.10.10)

Although no actual remediation systems are required for this remedial program, a tire wash station is required for vehicles leaving the Site after contact with lead impacted soils. The tire wash station will be an excavation approximately 15 feet long by 10 feet wide and 3 feet deep filled with medium sized

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

aggregate. The tires will be sprayed down with a garden hose. The sediment will lay within the aggregate and the water will naturally flow through the aggregate and ground surface. A copy of the wash station design is provided in Figure 6.

3.9.1 Air Specifications

Grenier will provide AQM (through a professional air quality consultant) for contaminated dust at the downwind property perimeter during all activities involving the *disturbance of lead impacted soil*. The dust monitoring device will be capable of calibration, setting a threshold action level alarm for particulate dust concentrations, and continuous logging of data for documentation and reporting purposes. A summary of all air monitoring results suitable for posting to the RI DEM's dedicated site web page shall be prepared and submitted to the RI DEM on a weekly basis. The summary shall include an indication of any detected exceedances of any action levels during the monitoring period and a complete description of how any detected exceedances were responded to and how the causes were controlled or resolved.

3.9.2 Groundwater Specifications

As ground water has not been affected by the soil contamination, no ground water remediation will be performed.

3.9.3 Soil Specifications

As noted above, the remedy for soil will consist of the encapsulation of Lead impacted soils using geotextile fabric and clean fill as well as the proposed building foundations asphalt parking surfaces, concrete walkways or equivalent.

3.10 Set-Up Plans (Section 1.10.11)

As stated in Section 3.2, Step 1 above, the AQM equipment will be set up prior to work commencing at the Site. Temporary chain-link construction fencing will be placed around the perimeter of the Site. The fencing will be 6-feet in height and include construction fabric to limit the lateral dust migration. Hay bales (or equivalent) will be used to provide erosion control along the base of the construction fencing around the Site. Water will also be used as a Best Management Practice (BMP) to control contaminated fugitive dust migration. The contaminated soil, during excavation and stock piling activities, will be wetted down. Upon ending tasks for the day, all contaminated soil piles will be covered with 6-mil plastic. A decontamination wash station will be installed at the exit of the Site to remove contaminated soils from the exterior of trucks and equipment leaving the Site and only if equipment/vehicles have come in contact with contaminated soils. Vehicles and equipment that have not been in contact with contaminated soils can exit the Site without utilizing the wash station.

3.11 Effluent Disposal (Section 1.10.12)

Soils to be removed (if necessary) from the Site will be fully characterized for disposal at the Rhode Island Resource Recover Corporation (RIRRC) located in Johnston, Rhode Island. Decontaminated water from the wash station will be properly disposed off-Site as needed. Sludge generated by the washing will be re-used as backfill.

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

3.12 Contingency Plan (Section 1.10.13)

As the remedy includes the capping of the Site with geofabric overlain with 1-foot of clean soil preventing access to the contaminated soil no alternative or contingency plan has been prepared.

3.13 Operating Log (Section 1.10.14)

An operating log will be completed on a daily basis during remedial activities at the Site. A copy of this log is provided in Appendix B.

3.14 Security Procedures (Section 1.10.15)

Grenier and Redwood do not anticipate security issues related to the remedial activities at the Site and therefore, have not prepared security procedures. However, the fencing will be secured each day upon leaving the Site.

3.15 Shut-Down, Closure and Post-Closure Requirements (Section 1.10.16)

At such time that the remedial activities are completed, any and all equipment related to the remedial activities will be removed from the Site and Redwood will prepare a Post-Closure Report summarizing the remedial activities performed and completed at the Site. In addition, a recorded copy of the ELUR will be provided to RIDEM within 15 days of its recording at East Greenwich Land Records.

3.16 Institutional Controls and Notices (Section 1.10.17)

Since the remedial objectives for soil are the Method 1 Soil Objectives, jurisdictional contaminants (Lead) will remain in place at depth. As such, there will be a need for implementation of institutional controls in the form of an ELUR.

The public notice provisions outlined in Section 1.8.7 of the Remediation Regulations have been completed. Public comments were received within the 10-day period and requests were made to extend the comment period an extra 10 days for a total of 20 days which culminated in an RI DEM Letter Response to SIR Public Comments dated August 24, 2020. This letter indicated the following must be followed as part of this remediation project as agreed upon in the SIR Addendum #2 dated November 1, 2020.

1. The final RI DEM approved RAWP and SMP must include best management practices for controlling and preventing contaminated dust generation and managing contaminated dust migration from the property during work activities, including at a minimum maintaining a water supply (e.g. water truck) onsite to keep excavations and soil piles wetted, securely covering all soil piles when not actively adding or removing soil and at the end of each work day, installation of a temporary security construction fence around the Site with appropriate dust proof covering, providing appropriate sedimentation and erosion controls (i.e. hay bales lining the inside base of the construction fence), securely covering all trucks removing contaminated soil from the property to prevent potential releases of contaminated fugitive dust, providing appropriate decontamination of all equipment used on site having contact with contaminated soil, constructing a temporary lined

REMEDIAL ACTION WORK PLAN
32 & 33 Exchange Street, East Greenwich, Rhode Island

decontamination pad where trucks are cleaned before leaving the site and including provisions to collect excess decontamination water to prevent infiltration or runoff, and documentation and certification that the required remedial measures were properly followed and work was performed in accordance with all approvals and requirements

2. The final RI DEM approved RAWP and SMP must include the performance of Air Quality Monitoring for contaminated fugitive dust at the downwind property perimeter during all activities involving the disturbance of regulated soil. The selected dust monitoring device should be capable of calibration, setting a threshold action level alarm for particulate dust concentrations, and continuous logging of data for documentation and reporting purposes. A summary of all air monitoring results suitable for posting to the RI DEM's dedicated site web page shall be prepared and submitted to the RI DEM on a weekly basis during remedial activities. The summary shall include an indication of any detected exceedances of any action levels during the monitoring period and a complete description of how any detected exceedances were responded to and how the causes were controlled or resolved.

3. Acknowledgement by Redwood that RI DEM policy requires that soil on a regulated Site that has not been analyzed or otherwise characterized is presumed to be impacted until it has been demonstrated through sampling and analysis to not be impacted, and must therefore be managed in accordance with the final RI DEM approved RAWP and SMP.

4. Acknowledgement by Redwood that they and any subcontractors operating at the Site, will follow the final RI DEM approved RAWP and SMP as approved, with the understanding that intentional or unintentional failure to follow the requirements could result in potential temporary work stoppages, violations and administrative penalties or fines.

5. Inclusion of a Limited Design Investigation in the RAWP with collection of an additional soil sample at the location identified as #2 where gasoline was allegedly poured on the ground, at a depth of greater than 2 feet below ground surface and analyzed for total petroleum hydrocarbons.

3.17 Compliance Determination (Section 1.10.18)

Compliance with the Soil Objectives will be demonstrated through photographic documentation of the cap confirming cap thickness, analytical reports for the clean fill, as well as the recording of the ELUR and SMP.

FIGURES
&
APPENDIX A
SOIL MANAGEMENT PLAN
&
APPENDIX B
OPERATING LOG

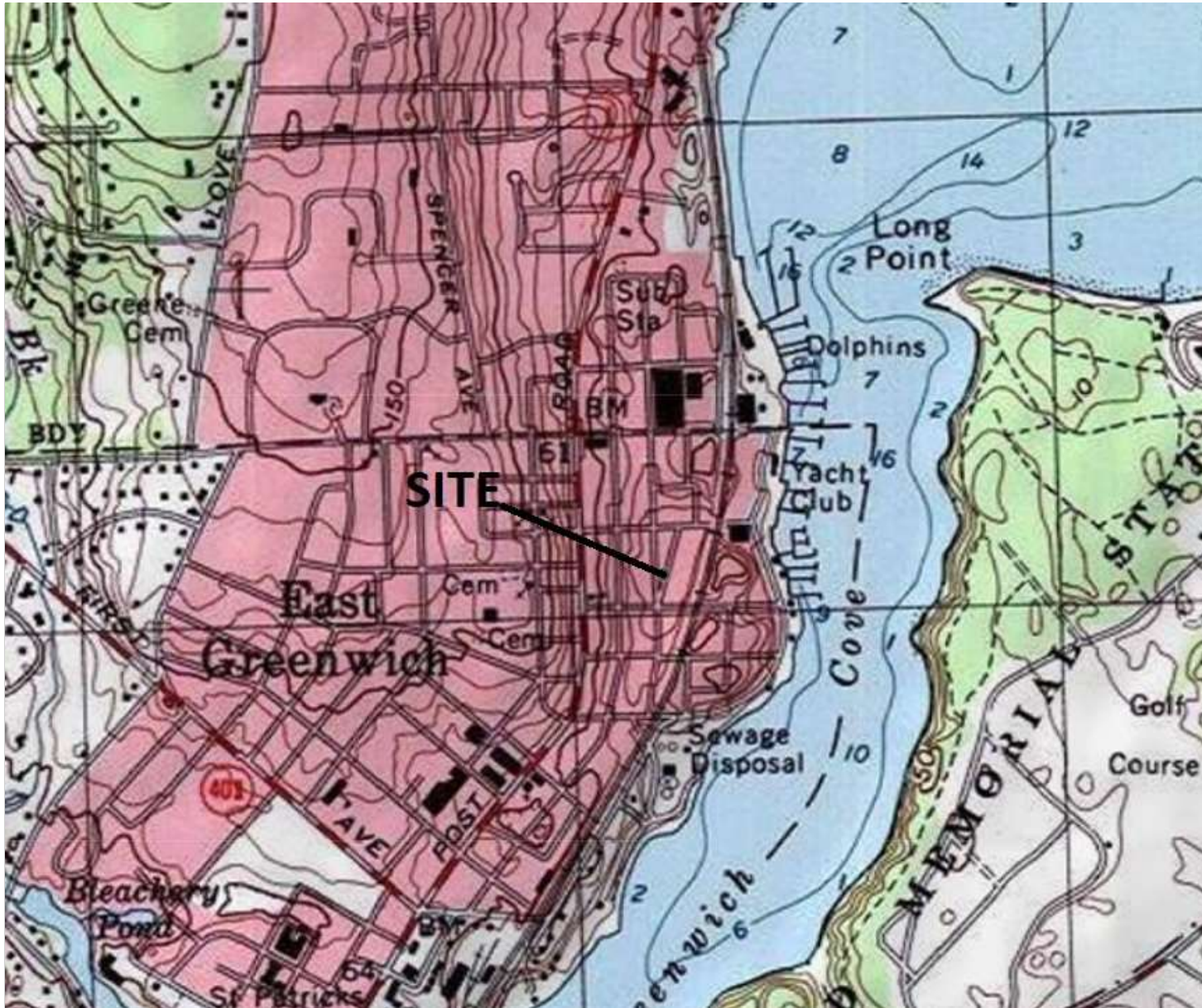


FIGURE 1
LOCATION PLAN



SITE INVESTIGATION REPORT
RESIDENTIAL PROPERTY
32 & 33 EXCHANGE STREET
EAST GREENWICH, RHODE ISLAND

NORTH
PROJECT NO. 201942



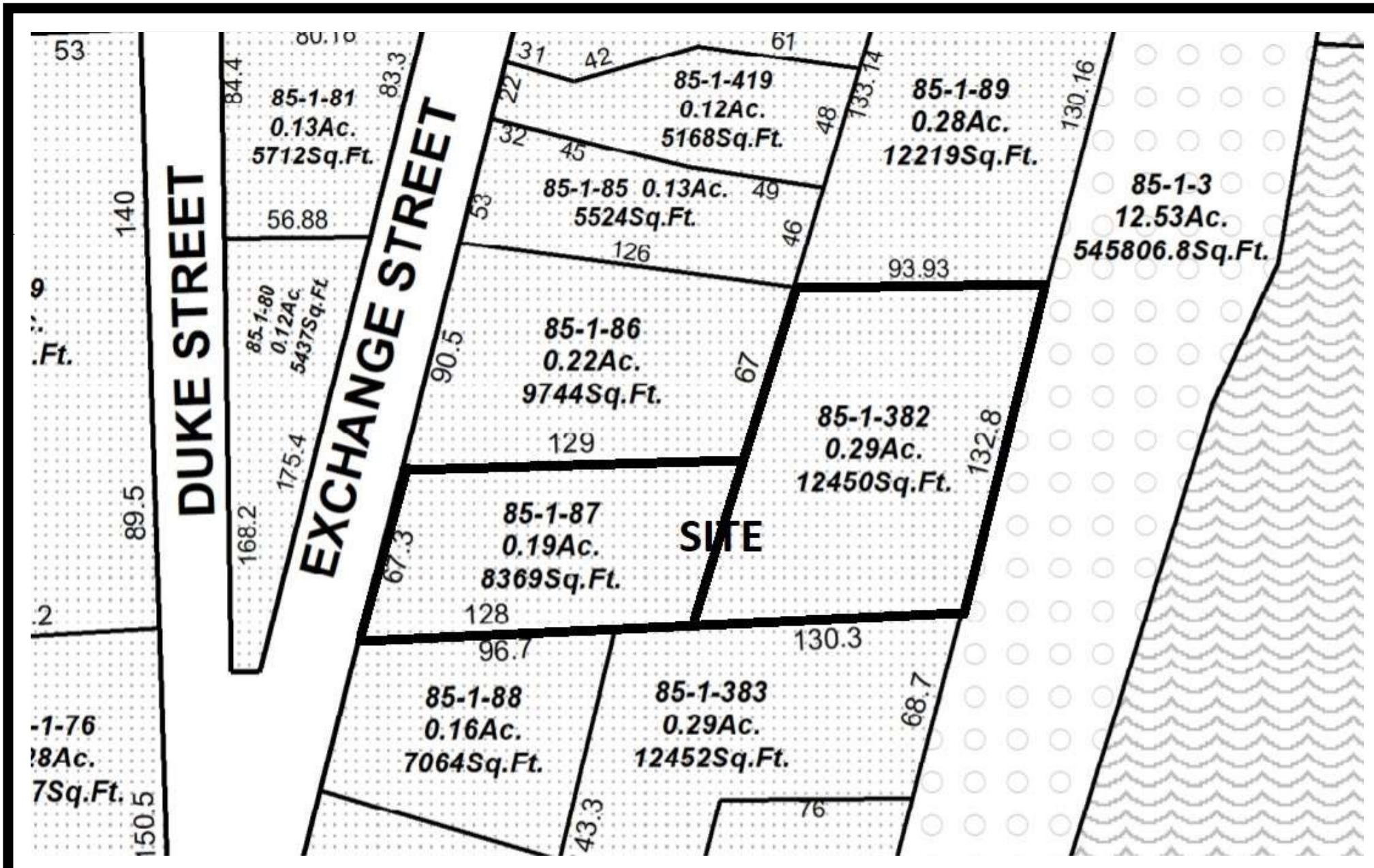


FIGURE 2
PLAT MAP



REMEDIAL ACTION WORK PLAN
RESIDENTIAL PROPERTY
32 & 33 EXCHANGE STREET
EAST GREENWICH, RHODE ISLAND



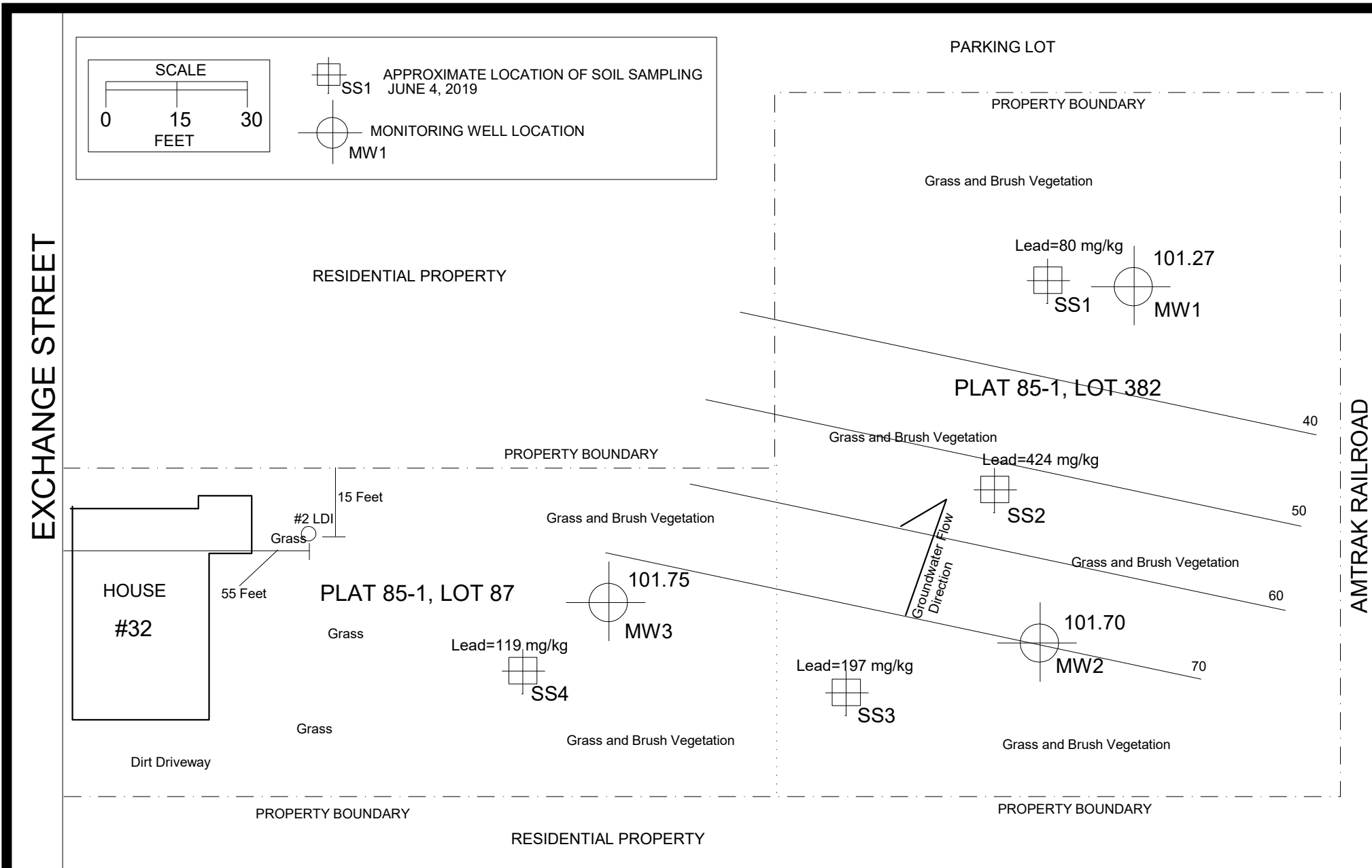


FIGURE 3

SITE PLAN



SITE INVESTIGATION REPORT
 RESIDENTIAL PROPERTY
 32 & 33 EXCHANGE STREET
 EAST GREENWICH, RHODE ISLAND

NORTH
 PROJECT NO. 201942





FIGURE 4

BUILDING PLAN



REMEDIAL ACTION WORK PLAN
RESIDENTIAL PROPERTY
32 & 33 EXCHANGE STREET
EAST GREENWICH, RHODE ISLAND

NORTH
PROJECT NO. 201942





FIGURE 5

SITE CAPPING PLAN

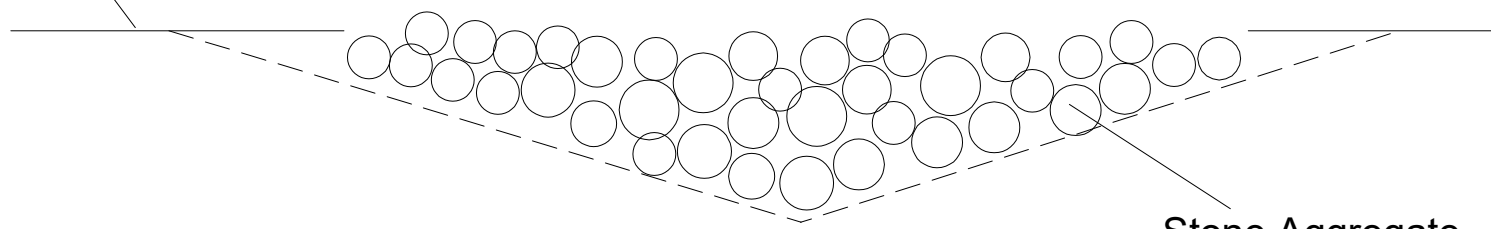


REMEDIAL ACTION WORK PLAN
 RESIDENTIAL PROPERTY
 32 & 33 EXCHANGE STREET
 EAST GREENWICH, RHODE ISLAND

NORTH
 PROJECT NO. 201942



Surface Grade



Stone Aggregate

3 Feet

15 Feet

FIGURE 6

WASH STATION



REMEDIAL ACTION WORK PLAN
RESIDENTIAL PROPERTY
32 & 33 EXCHANGE STREET
EAST GREENWICH, RHODE ISLAND

NORTH
PROJECT NO. 201942





APPENDIX A
SOIL MANAGEMENT PLAN

**Soil Management Plan
Commercial Property
32 & 33 Exchange Street
East Greenwich, Rhode Island
RIDEM File No. SR-09-1958**

This Soil Management Plan (SMP) has been prepared to establish procedures that will be followed should future construction/maintenance activities at the at the above referenced addresses (the "Site") require the need to manage soils excavated from the subsurface or when existing Site surfaces / Rhode Island RI DEM of Environmental Management (RI DEM) approved engineered controls (asphalt, concrete, landscaping and/or foundations) are disturbed. The plan serves to supplement, and will be initiated by, the RI DEM notification requirement established by the Environmental Land Use Restriction (ELUR) for the property.

Background

The Site is located 32 and 33 Exchange Street in a residential section of East Greenwich, Rhode Island. According to the City of East Greenwich Tax Assessor's field cards, the Site is comprised of two tax assessor lots including Lot 87 and Lot 382 on the tax assessor's Plat Map 85/1 and corresponds to 32 and 33 Exchange Street, respectively. Through subsurface investigations performed at the Site, the Site soils were identified with Lead concentrations above 150 milligrams per kilograms, which is the Method 1 Direct Exposure Criteria applicable to the Site.

The RI DEM approved remediation for soil is to encapsulate impacted Site soils and provide engineered controls at a minimum level of protection consistent with geotextile fabric overlain with 1-foot of clean fill material or equivalent. Proposed engineered controls include placement of a geotextile fabric overlain with 1- foot of clean soil and/or crushed stone, placement of 2- feet of clean fill material (optional), placement of one (1) foot of clean fill with a four (4) inch asphalt cover, in addition to the final building footprint, asphalt pavement and concrete walkways. These remediation activities, in the aggregate, will prevent direct exposure to impacted soils at the Site. An institutional control in the form of an Environmental Land Use Restriction (ELUR) is recorded on the property deed as part of the remedy such that the 1-foot of fill and geofabric, asphalt cap, concrete walkways and buildings are properly maintained and restricted activities do not occur in the future. The use of engineering and institutional controls as regulated by RI DEM, are necessary in order to prevent direct exposure to regulated soils and soils which exceed the RI DEM's Method 1 Direct Exposure Criteria.

Applicable Area

This SMP pertains to the entire Site which includes Plat Map 85/1, Lots 87 & 382. See attached Site figure.

Soil Management

The direct exposure pathway is the primary concern at the Site. Individuals engaged in activities at the Site may be exposed through incidental ingestion, dermal contact, or inhalation of vapors or entrained soil particles if proper precautions are not taken. Therefore, the following procedures will be followed to minimize the potential of exposure.

During Site work, the appropriate precautions will be taken to restrict unauthorized access to the Site.

During all Site/earth work, dust suppression (e.g. watering, etc) techniques must be employed at all times. In addition, air monitoring for fugitive dust downgradient of the activities must be employed.

In the event that an unexpected observation or situation arises during Site work, such activities will immediately stop. Workers will not attempt to handle the situation themselves but will contact the appropriate authority for further direction.

In the event that certain soils on Site were not previously characterized, these soils are presumed to be regulated until such time that it is demonstrated to the RI DEM, through sampling and laboratory analysis that they are not regulated. (For example, presumptive remedies or locations of previously inaccessible soil.)

If excess soil is generated / excavated from the Site, the soil is to remain on-Site for analytical testing, to be performed by an environmental professional, in order to determine the appropriate disposal and/or management options. The soil must be placed on and covered with polyethylene/plastic sheeting during the entire duration of its staging and secured with appropriate controls to limit the loss of the cover and protect against storm-water and / or wind erosion (e.g. hay bales, silt fencing, rocks, etc).

Excavated soils will be staged and temporarily stored in a designated area of the Site. Within reason, the storage location will be selected to limit the unauthorized access to the materials (e.g., away from public roadways/walkways). No regulated soil will be stockpiled on-Site for greater than 60 days without prior RI DEM approval.

In the event that stockpiled soils pose a risk or threat of leaching hazardous materials, a proper leak-proof container (e.g. drum or lined roll-off) or secondary containment will be utilized.

Soils excavated from the Site may re-used as fill below 2-feet on residential property. Otherwise, the soil will be stockpiled and characterized for disposal off-Site.

Site soils, which are to be disposed of off-site, must be done so at a licensed facility in accordance with all local, state, and federal laws. Copies of the material shipping records associated with the disposal of the material shall be maintained by the Site owner and included in the annual inspection report for the Site.

Best soil management practices should be employed at all times and regulated soils should be segregated into separate piles (or cells or containers) as appropriate based upon the results of analytical testing, when multiple reuse options are planned (e.g. reuse on-Site, reuse at a RI DEM approved Industrial/Commercial property, or disposal at a RI DEM approved licensed facility).

All non-disposable equipment used during the soil disturbance activities will be properly decontaminated as appropriate prior to removal from the Site. All disposable equipment used during the soil disturbance activities will be properly containerized and disposed of following completion of the work. All vehicles utilized during the work shall be properly decontaminated as appropriate prior to leaving the Site.

At the completion of Site work, all exposed soils are required to be recapped with RI DEM approved engineered controls consistent or better than the Site surface conditions prior to the work that took place. These measures must also be consistent with the RI DEM approved ELUR recorded on the property. Any clean fill material brought on Site is required to meet the RI DEM's Method 1 Residential Direct Exposure Criteria or be designated by an Environmental Professional as Non-Jurisdictional under the Remediation Regulations. The Annual Inspection Report for the Site, or Closure Report if applicable, should include either analytical sampling results from the fill demonstrating compliance or alternatively include written certification by an Environmental Professional that the fill is not jurisdictional.

Groundwater Management

No Site groundwater will be used for potable purposes.

Worker Health and Safety

To ensure the health and safety of on-Site workers, persons involved in the excavation and handling of the material on Site are required to wear a minimum of Level D personal protection equipment, including gloves, work boots and eye protection. Workers are also required to wash their hands with soap and water prior to eating, drinking, smoking, or leaving the Site. A BASIC HEALTH AND SAFETY PLAN IS PROVIDED AT THE END OF THIS DOCUMENT.

RI DEM Approval

In accordance with Section A iii of the ELUR, no soil at the Site is to be disturbed in any manner without prior written permission of the RI DEM's Office of Waste Management, except for minor inspections, maintenance, and landscaping activities that do not disturb the

contaminated soil at the Site. As part of the notification process, the Site owner shall provide a brief written description of the anticipated Site activity involving soil excavation. The notification should be submitted to the RI DEM no later than 60 days prior to the proposed initiation of the start of Site activities. The description shall include an estimate of the volume of soil to be excavated, a list of the known and anticipated contaminants of concern, a Site figure clearly identifying the proposed areas to be excavated/disturbed, the duration of the project and the proposed disposal location of the soil.

Following written Notification, the RI DEM will determine the post closure reporting requirements. Significant disturbances of regulated soil will require submission of a Closure Report for RI DEM review and approval documenting that the activities were performed in accordance with this SMP and the RI DEM approved ELUR. Minor disturbances of regulated soil may be documented through the annual certification submitted in accordance with Section H (Inspection & Non-Compliance) of the RI DEM approved ELUR. The RI DEM will also make a determination regarding the necessity of performing Public Notice to abutting property owners/tenants concerning the proposed activities. Work associated with the Notification will not commence until written RI DEM approval has been issued. Once RI DEM approval has been issued, the RI DEM will be notified a minimum of two (2) days prior to the start of activities at the Site. Shall any significant alterations to the RI DEM approved plan be necessary, a written description of the proposed deviation, will be submitted to the RI DEM for review and approval prior to initiating such changes.

BASIC HEALTH AND SAFETY PROCEDURES

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. The procedures are intended as a general guideline for basic, short-term excavation activity conducted at the Site and it should be noted that more Site-specific health and safety procedures may be provided in a Site-Specific Health and Safety Plan provided by the Site contractor.

Based on the type of chemical constituents present at the Site (i.e., Lead, Poly-nuclear Aromatic Hydrocarbons [PAHs], Total Petroleum Hydrocarbons [TPH]), the potential routes of exposure to on-Site excavation workers include dermal contact (absorption) or accidental ingestion of impacted soil, and the possible injection of contaminants through broken skin. As contaminants released at the Site are not volatile in nature, inhalation hazards are not anticipated. Utilization of the appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure to petroleum-impacted media while performing work at the Site.

Personal Protective Equipment

In general, the level of protection which will be used by workers will be determined by the task which the person is performing; however, at least Level D PPE will be worn at all times while performing excavation activities at the Site. Level D PPE will, at a minimum, consist of the following PPE:

1. Appropriate work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Nitrile gloves/inner latex or PVC gloves;
4. Hard hat; and
5. Work coveralls.

If Level C or higher level of PPE is determined to be necessary to complete a specific task, a Site-specific health and safety plan will be developed for the work to be performed.

Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work at the Site, the following general health and safety guidelines will be followed during the performance of any excavation activities. Adherence to these guidelines will reduce the potential worker exposure to lead and TPH impacted media.

2. All remedial work conducted on-Site shall be coordinated through a designated Redwood Environmental Group, LLC (Redwood) employee or contractor's designated employee responsible for the implementation of the requirements of the Site-specific Remedial Action Work Plan (RAWP), and these basic health and safety procedures.
2. All spectators will remain at a safe distance from the excavation and under no circumstances will approach the excavation without the consent of the responsible Redwood or contractor's designated employee.
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures.
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and

avoid unnecessary contact with objects in an excavation.

6. Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible contractor's employee as to suspected exposures.
7. All equipment used in an excavation shall be properly cleaned and maintained in good working order. Equipment shall be inspected for signs of defect and/or contamination before use.
8. Eating, drinking, chewing gum, and smoking shall be prohibited in active excavation areas.
9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of Site personnel from the excavation and the re-evaluation of the hazard and the level of protection.

In Case of Serious Exposure or Injury

In the event of serious chemical exposure or worker injury, the responsible contractor's designated employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided as Appendix A. (CALL 911) Convey the following information:
 - a) Nature of emergency,
 - b) Location of victim,
 - c) Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
 - d) Length of exposure, and
 - e) Hazards which may be involved in rescue or treatment;
2. If taken to a hospital, notify the hospital of the background of the problem:
 - a) Potential for hospital contamination,
 - b) Any contaminated items and the nature of the contamination, and
 - c) Estimated arrival time.

Emergency Phone Numbers

| Emergency Coordinator | Name | Telephone Number |
|----------------------------------|--------------|-------------------------|
| General Contractor-Grenier Group | Tim Grenier | 401-527-0524 |
| Environmental Consultant | Gary Kaufman | Cell: 401-639-1602 |

| RESPONSE AGENCY | PHONE NUMBER |
|---|---|
| Ambulance | 911 |
| Police | 911 |
| Fire | 911 |
| RI DEM Office of Compliance & Inspection, Emergency Response Program | (401) 222-4700 (business hours) (401) 222-3070 (non-business hours emergencies) |
| U.S. EPA Hazardous Materials Spills | (800) 424-8802 |
| Poison Control Center | 1-800-222-1222 |
| Dig Safe | 1-888-DIG SAFE |
| Hospital | |
| Rhode Island Hospital (ER) 2 Dudley Street Providence, Rhode Island | 401-444-4000 |



APPENDIX B
OPERATIONS LOG
