TTI ENVIRONMENTAL, INC.
1253 NORTH CHURCH STREET, MOORESTOWN, NJ 08057

TTI Project No. 23-227
Date: November 20, 2023

REMEDIAL ACTION WORKPLAN

PROGRAM INTEREST NO. 021388
CASE TRACKING NO. LSR230001

SITE LOCATION:
Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
Camden, Camden County, New Jersey 08103

PREPARED FOR:
Camden Redevelopment Agency
520 Market Street, Suite 1300
Camden, New Jersey 08101
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1 INTRODUCTION

TTI Environmental, Inc. (TTI) was commissioned by the Camden Redevelopment Agency (CRA) (Person Responsible for Conducting Remediation) to prepare this Remedial Action Workplan (RAWP) for a site located at1115 Chestnut Street (Block 1302, Lot 1), Camden, Camden County, New Jersey "Site," (PI No. 021388). A regional site location map depicting the Site is presented as Figure 1.0.

This RAWP was prepared in accordance with New Jersey Administrative Code (NJAC) 7:26E Technical Requirements for Site Remediation, specifically Section 5.5. The New Jersey Department of Environmental Protection (NJDEP) has set a Remedial Action Regulatory Timeframe of March 25, 2029 for this case. A Case Inventory Document (CID) and Authorization Form have been prepared for submission to the NJDEP through the Online Portal for this RAWP.

2 REMEDIAL INVESTIGATION SUMMARY

On behalf of CRA, TTI prepared a Site Investigation/Remedial Investigation Report (SIR/RIR) for the site. The SIR/RIR was dated March 24, 2023 and was submitted to NJDEP on August 18, 2023. The SIR/RIR included an Initial Receptor Evaluation (IRE) and documented the investigation of twelve areas of concern (AOCs) associated with the site. A Site Diagram is included as Figure 2.0 and an Area of Concern Map is included as Figure 3.0. A summary of the investigation of each AOC included in the SIR/RIR is provided below:

2.1 AOC 1A, 1B, and 1C: Three Heating Oil USTs

A SI was conducted of the three heating oil underground storage tanks (USTs) including the collection of soil samples from the immediate vicinity of the USTs. Soil samples collected from the vicinity of the USTs were analyzed per NJDEP Table 2-1 Guidance for the investigation of No. 2 Heating Oil and NJDEP Table 2-1 Guidance for the investigation of No. 4 and No. 6 Heating Oil. The soil samples returned no exceedances of applicable NJDEP standards.

TTI recommended the removal of the three heating oil USTs per NJDEP UST removal guidance. TTI also recommended the registration of the three USTs be properly updated with the NJDEP following their removal.

2.2 AOC 1D and 1E: Two Unknown USTs

A SI was conducted of AOCs 1D and 1E including the collection of soil samples from the immediate vicinity of the USTs. Soil samples collected from the vicinity of the USTs were analyzed per NJDEP Table 2-1 Guidance for the investigation of No. 2 Heating Oil and NJDEP Table 2-1 Guidance for the investigation of No. 4 and No. 6 Heating Oil. No exceedances of applicable NJDEP standards were detected in the samples.

TTI also collected samples of residual product in the two USTs for petroleum fingerprint analysis. The petroleum fingerprint analysis concluded that AOC 1D (the eastern UST) contains No. 2 fuel oil and AOC 1E (the western UST) contains a mixture of No. 2 and No. 6 fuel oil.

TTI recommended the removal of the two USTs per NJDEP UST removal guidance. TTI also recommended the registration of the three USTs be properly updated with the NJDEP following their removal.

2.3 AOC 2: Former Loading/Unloading Area

A SI/RI was conducted to investigate AOC 2. Mercury was discovered in exceedance of the NJDEP Migration to Groundwater Remediation Standards (MGW) in the vicinity of AOC 2. TTI conducted additional sampling in the area of AOC 2 and delineated the mercury contamination. TTI utilized compliance averaging of the mercury concentrations detected in soil samples collected at AOC 2 to obtain attainment of the MGW for mercury.

TTI recommends no further investigation of AOC 2.

2.4 AOC 3: Potential Historic Fill Material and AOC 4: Potential Buried Debris

TTI conducted a SI/RI of AOCs 3 and 4. SI sampling of AOCs 3 and 4 identified benzo(a)pyrene and lead above the NJDEP RID-SRS in TP-4 and TP-6 respectively. TTI conducted additional soil sampling to delineate benzo(a)pyrene contamination to a 10-foot wide by 10-foot long by 5-foot deep volume of soil. Additional soil sampling was conducted to delineate lead contamination to a 20 feet wide by 15 feet long by 5-foot deep volume of soil. Contaminated soils associated with AOCs 3 and 4 remain at the site.

TTI recommended the hotspot remediation of soils impacted by AOCs 3 and 4. TTI recommends a virtual institutional control be established for historic fill-related contaminants in groundwater at the site.

2.5 AOC 6: Former Transformer Room

TTI conducted a SI of AOC 6 including the collection and analysis of four soil samples for extractable petroleum hydrocarbons (EPH) EPH and polychlorinated biphenyls (PCBs) with potential expansion for polycyclic aromatic hydrocarbons (PAHs). The soil samples returned no exceedances of applicable NJDEP standards.

TTI recommended no further investigation of AOC 6.

2.6 AOC 7: Former Rail Lines

TTI conducted a SI of AOC 7 including the collection and analysis of three soil samples. The soil samples returned exceedances of the MGW for various metals. TTI attributes the exceedances of MGW to the site-wide presence of historic fill material. Groundwater at the site is assumed to be impacted by historic fill material and exceedances of the MGW do not require further investigation per NJDEP guidance.

TTI recommended no further investigation of AOC 7.

2.7 AOC 8: Former Pottery Manufacturing Operation

TTI conducted a SI to investigate AOC 8 including the collection and analysis of ten soil samples for Target Compound List/Target Analyte List (TCL/TAL). The soil samples returned no exceedances of applicable NJDEP standards.

TTI recommended no further investigation of AOC 8.

2.8 AOC 9: Former Coal Pile

A SI/RI was conducted to investigate AOC 9. Mercury was discovered in exceedance of the NJDEP MGW in the vicinity of AOC 9. TTI conducted additional sampling in the area of AOC 9 and delineated the mercury contamination. A site-specific MGW standard was developed for the site using Synthetic Precipitation Leaching Procedure (SPLP) analysis of soil samples analyzed for mercury during the investigation of AOC 9. The site-specific MGW for mercury is 0.293 mg/kg. TTI utilized compliance averaging of the mercury concentrations detected in soil samples collected at AOC 9 to obtain attainment of the site-specific MGW for mercury. No further action is necessary of mercury in association with AOC 9.

Benzo(a)anthracene was detected in exceedance of the NJDEP MGW in the vicinity of AOC 9. TTI conducted additional sampling in the area of AOC 9 and delineated the benzo(a)anthracene contamination. Remediation is necessary of MGW exceedances only if the contamination is present in soil within two feet of groundwater. The minimum depth to groundwater at the site is approximately 13 feet bgs. Vertical delineation of benzo(a)anthracene confirmed that the contamination is not present below five feet bgs. No further action is necessary of benzo(a)anthracene in association with AOC 9.
Benzo(a)pyrene was detected in exceedance of the NJDEP RID-SRS in the vicinity of AOC 9. TTI conducted additional sampling in the area of AOC 9 and delineated the extent of benzo(a)pyrene contamination in soil. TTI recommends the hotspot remediation of soils impacted by benzo(a)pyrene associated with AOC 9.

2.9 AOC 10: Historical Fire

A SI was conducted to investigate AOC 10. The SI included the collection and analysis of seven soil samples for volatile organic compounds (VOCs), PAHs, and Target Analyte List (TAL) Metals. The soil samples returned no exceedances of applicable NJDEP standards.

TTI recommended no further action for AOC 10.

2.10 Site Description

The site is an irregularly shaped, a 1.98-acre unimproved parcel of land that formerly included several manufacturing facilities that burned down in June 2011. Grass lawn currently covers the site. The site is located in an urban setting within Camden City, New Jersey. A regional site location map, an aerial diagram, a parcel map, and geophysical maps are included in Figures .

2.11 Physical Setting

2.11.1 Topography/Geology/Soils/Hydrogeology

The site is approximately 11 feet above mean sea level and is located within the Coastal Plain Physiographic Province. The site slopes gently in the south-southeasterly direction and the nearest surficial body of water is the Cooper River approximately 0.32-mile northeast of the site.

The site is underlain by the Potomac Formation of the Upper Cretaceous/Lower Cremanian Age. The bedrock lithology includes fine- to coarse-grained sand interbedded with white, red or yellow clay. The surficial geology at the site is identified as the Cape May Formation, Unit 2, which includes a lithology of sand, pebble gravel, minor silt, clay, peat, and cobble gravel.

Soils at the site are classified as Urban Land, Boonton substratum, 0 to 8 percent slopes, red sandstone lowland. “Urban land” is used to describe soils that have been altered via human development and can no longer be accurately described.

During field investigations, TTI identified fill material (including coal and brick), fine- to coarse-grained sands, and silts as prominent sub-surface material.

The site is located within the Cooper River area of the Lower Delaware Watershed. Depth to groundwater at the site ranges from approximately 13 to 17 feet.

2.11.2 Review of Sensitive Areas and Populations

Based on an inspection of the site and surrounding properties and a review of available on-line and hard copy documents, residential homes are located within 200 feet east and southeast of the site. This investigation has confirmed that soil contamination is confined to the site and is not anticipated to impact offsite sensitive receptors. No ecological receptors are located within 200 feet of the site.

2.11.3 Surface Water

Rainwater at the site either is discharged to storm drains along the outside of the site or percolates through soils at the site. Surface water is estimated to flow in a general south-southeasterly direction based on topographic information.

There are no federal or state designated wetlands on or adjacent to the site.

2.11.4 Water Supply Sources

TTI did not identify active utility lines at the site. TTI reviewed a City of Camden municipal permit for the disconnection of public water and sewer lines from the site in 2016.

3 REMEDIAL APPROACH

The following soil impacts requiring remediation were detected at the site:

- AOCs 3 and 4: Benzo(a)pyrene and lead are present above the NJDEP RID-SRS in two areas
- AOC 9: Benzo(a)pyrene is present present above the NJDEP RID-SRS in one area

Five underground storage tanks (AOCs 1A through 1E) are present at the site. The five USTs are potential sources of a release.

CRA desires a Limited Restricted Use AOC Response Action Outcome (RAO); further action is warranted. Presented below is the proposed remedial action for the site.

3.1 Planned Remedial Action

3.1.1 AOCs 1A through 1E: Underground Storage Tanks

The planned remedial action for the five USTs includes the excavation and removal of the USTs from the site. The approximately 10,000-gallon and 12,000-gallon USTs (AOC 1D and AOC 1E) are currently filled with a mixture of water and residual petroleum product. The contents of the two USTs shall be pumped out and disposed of offsite. The three heating oil USTs (AOC 1A, AOC 1B, and AOC 1C) are currently filled with concrete. The concrete shall be removed from the USTs and disposed of offsite. If evidence of obvious impact is identified during the removal of the USTs, impacted soils shall be excavated and staged for disposal offsite. Tank carcasses shall be disposed of offsite as scrap metal.

Confirmatory sampling shall be conducted of the five USTs in accordance with N.J.A.C. 7:26E, 7:14B and the Technical Guidance for Investigation of Underground Storage Tank Systems (NJDEP, 2012). A UST Closure Report shall prepared and will include documentation of tank disposal, waste disposal manifests, and clean fill receipts used to backfill the UST excavation. The UST Closure Report will also include analytical results of samples collected from the UST excavation.

3.1.2 AOC 3: Potential Historic Fill Material and AOC 4: Potential Buried Debris

The planned remedial action of AOCs 3 and 4 includes the excavation and disposal of impacted soils. Impacted soils include a 10 feet long by 10 feet wide by 5 feet deep area contaminated with benzo(a)pyrene and a 20 feet wide by 15 feet long by 5 feet deep area contaminated with lead. The dimensions of the excavations were confirmed by horizontal and vertical delineation samples collected during the RI; no additional post-excavation samples will be required. Delineation samples previously collected fulfill the post-excavation guidance outlined in

NJDEP *Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil*, version 1.2, March 2015. It is estimated that a total of approximately 21 tons of benzo(a)pyrene-impacted soil and approximately 61 tons of lead-impacted soil will be removed. Soils will be removed using an excavator and/or backhoes and transported offsite for disposal. The excavation will be backfilled with certified clean fill material.

Waste classification samples shall be collected from excavated soils and analyzed in compliance with New Jersey Waste Classification requirements prior to disposal at a Subtitle D landfill. One waste classification sample shall be collected from the stockpiled soils of each excavation. Contaminated soils generated during excavation activities will be transported off-site for disposal in accordance with applicable United States and New Jersey Departments of Transportation (USDOT and NJDOT, respectively) requirements and regulations and federal and state waste transporter regulations. Waste manifests and disposal certificates will be maintained as required, and copies will be included in the Remedial Action Report (RAR).

3.1.3 AOC 9: Former Coal Pile

The planned remedial action of AOC 9 includes the excavation and disposal of impacted soils associated with AOC 9. Impacted soils include a 20 feet long by 15 feet wide by 5 feet deep area. The dimensions of the excavations were confirmed by horizontal and vertical delineation samples collected during the RI; no additional post-excavation samples will be required. Delineation samples previously collected fulfill the post-excavation guidance outlined in NJDEP *Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil*, version 1.2, March 2015. It is estimated that a total of approximately 21 tons of benzo(a)pyrene-impacted soil will be removed from the area of AOC 9. The excavation will be backfilled with certified clean fill material.

Waste classification samples shall be collected from excavated soils and analyzed in compliance with New Jersey Waste Classification requirements prior to disposal at a Subtitle D landfill. One waste classification sample shall be collected from stockpiled soils produced during excavation. Contaminated soils generated during excavation activities will be transported off-site for disposal in accordance with applicable USDOT and NJDOT requirements and regulations and federal and state waste transporter regulations. Waste manifests and disposal certificates will be maintained as required, and copies will be included in the RAR.

3.2 Applicable Remedial Standards

Soil samples shall be compared to May 17, 2021 soil standards NJDEP MGWSRS, Non-Residential Inhalation Exposure Pathway Soil Remediation Standards (NRISRS), Residential Inhalation Exposure Pathway Soil Remediation (RISRS), Non-Residential Ingestion Dermal Pathway Soil Remediation Standards (NRIDSRS), and Residential Ingestion Dermal Pathway Soil Remediation Standards (RIDSRS).

3.3 Required Permits

No permits are required for the planned remedial action at the site.

3.4 Public Notification

Public notification, consisting of a sign, was posted at the site on November 29, 2022. The Public Notification and Outreach form was submitted via the LSRP portal with the SI/RI on April 14, 2023.

4 FILL USE PLAN

This Fill Use Plan (FUP) is being submitted as a portion of the RAW per N.J.A.C. 7:26E-5.2h and N.J.A.C. 7:26E-5.5(b)9. The intended future use of the site is to include commercial operations. PRCR desires a Limited Restricted Use RAO be issued for the site; this will require the removal of all impacted material associated with AOCs 1, 3, 4, and 9. The soil excavations will be backfilled with NJDEP certified clean fill. Human and environmental health will not be impacted by this excavation since all impacted material will be removed and filled with NJDEP certified clean fill material. Information pertaining to the source of the clean fill and the location of the receiving facility will be included in the RAR.

5 CONCEPTUAL SITE MODEL

TTI constructed the Conceptual Site Model (CSM) as per the NJDEP Technical Guidance for Preparation and Submission of a Conceptual Site Model, December 16, 2011. The CSM is a written and/or illustrative representation of the physical, chemical and biological processes that control the transport, migration and actual/potential impacts of contamination to human and/or ecological receptors. The goal of the CSM is to provide a description of relevant site features and the surface and subsurface conditions to understand the extent of identified contaminants of concern and the risk they pose to receptors (NJDEP, 2011). The CSM is an iterative process that is refined during the investigation. This CSM has been established based on data collected thus far in the investigation.

5.1 Description of Source, Pathways an Receptors

The source of contamination at the site was soil contaminated through a historical pottery manufacturing operation. The pottery manufacturing operation included the use of rail lines on the western and southern portion of the site and an associated loading/unloading area in the southeastern portion of the site. A coal pile was stored in the southeastern portion of the site to fuel kilns used to manufacture pottery. Additional potential sources of contamination at the site include five USTs containing heating oil and debris associated with a former tire wholesale facility that burned down at the site. Several SVOCs and metals were identified in soil samples collected throughout the site. All soil contamination originating at the site has been delineated and is restricted to the site. Metals were identified in groundwater that have been attributed to the presence of historic fill at the site.

Potential exposure pathways include ingestion, direct contact, and inhalation. Receptors include visitors to the site; no sensitive populations are present at the site. The future use of the site is planned to be commercial operations. The remedial goals for the site are to prepare the site for redevelopment.

5.2 Conceptual Site Model Summary

- Contaminants of concern in soil are lead, mercury, chlordane, beryllium, cadmium, zinc, and benzo(a)pyrene
- Contaminants were detected in areas of the site where historic fill was encountered
- Historic fill consisting of brick, concrete, ash and slag was observed at several locations across the site
- The majority of contaminants were above the MGWSRS only
- Lead was detected above NRIDSRS at TP-6; delineation complete
- Remedial approach for lead at TP-6 is excavation and offsite disposal
- Benzo(a)pyrene was detected above the RIDSRS at TP-4; delineation complete
- Remedial approach for benzo(a)pyrene at TP-4 is excavation and offsite disposal

- Benzo(a)pyrene was detected at AOC 9-1 above the NJDEP RID-SRS; delineation complete
- Remedial approach for benzo(a)pyrene at AOC 9-1 is excavation and offsite disposal
- Metals and heptachlor epoxide detected in groundwater are attributed to the presence of historic fill at the site
- Remedial approach for groundwater is establishment of a virtual CEA to restrict the use of groundwater at the site

6 REMEDIAL ACTION SCHEDULE

Remedial activities are planned to begin in January of 2024 following the submission of the RAW via the NJDEP Online Portal. NJDEP has a Remedial Action Regulatory Timeframe of March 25, 2029. Below is an anticipated timeline to achieve remedial action goals:

- Removal of USTs - January 2024
- Excavation of impacted soils – January 2024
- Submission of Soils Only Remedial Action Report (RAR) - April 2024
- Submission of a UST Closure Report - April 2024
- Issuance of an Entire Site Restricted Use RAO - May 2024

7 POST-REMEDIAL RESPONSIBILITIES

The goal of remedial action is to remove all impacted soils to obtain an Entire Site Limited Restricted Use RAO. Groundwater use shall be limited by NJDEP through a Virtual Institutional Control. A Classification Exception Area (CEA) was previously established for groundwater contamination associated with historic fill at the site. Pursuant to N.J.A.C. 7:26C-7.3(h), if a CEA is established due to regional historic fill only, ongoing monitoring and maintenance is not required. A Virtual Institutional Control (VIC) will be established by the Department, in which case a CEA/Well Restriction Area (WRA) Fact Sheet Form is required. The CEA will then be a responsibility of the Department. No Biennial Certifications will be required.

Appendix A: Figures

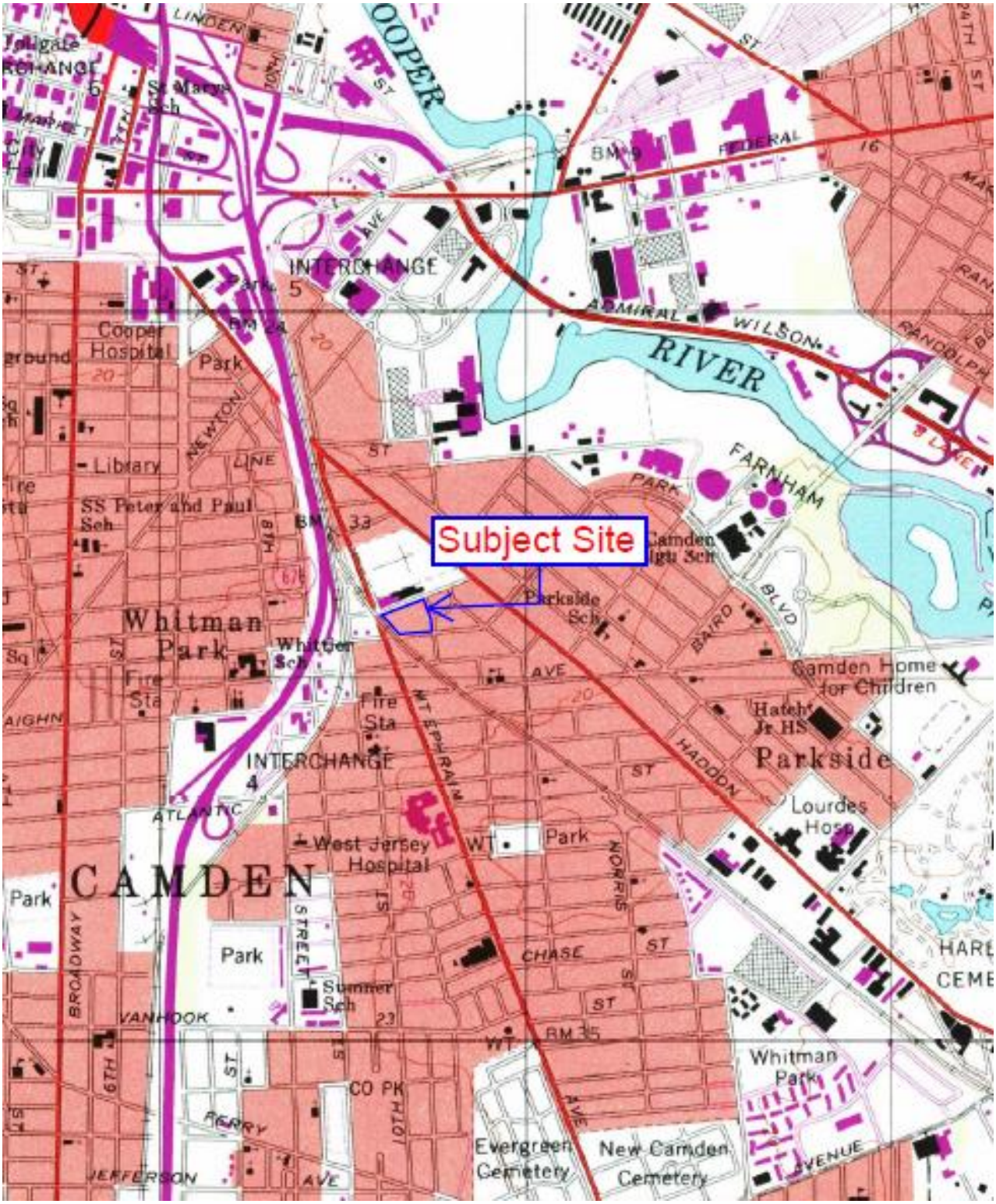

Figure 1.0:

Regional Site Location Map

Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
Camden, Camden County,
New Jersey 08103

TTI Environmental, Inc.
www.ttienv.com

SCALE	DRAWN BY	DATE
1:7,500	USGS	1/2021
PROJECT	APP'D BY	DRAWING NO.
23-227	AB	1.0

Figure 2.0:

Site Diagram

Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
Camden, Camden County, New Jersey 08103

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SCALE	DRAWN BY	DATE
As Shown	TTI	1/2021
PROJECT	APP'D BY	DRAWING NO.
23-227	AB	2.0

Figure 3.0:

AOC Map

Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
Camden, Camden County, New Jersey 08103

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SCALE	DRAWN BY	DATE
As Shown	TTI	10/2023
PROJECT	APP'D BY	DRAWING NO.
23-227	AB	3.0

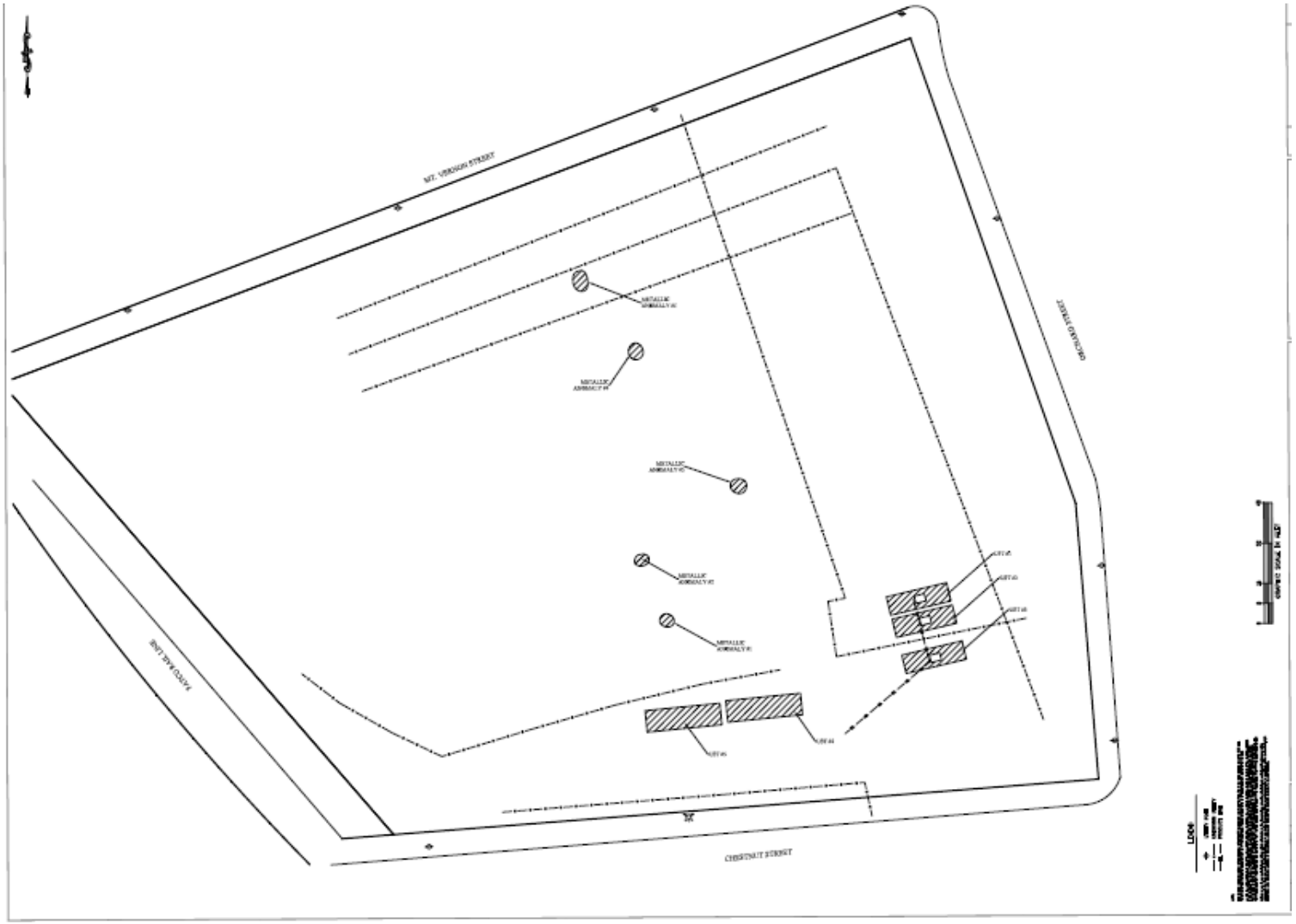

Figure 4.0:

Geophysical Map

Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
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SCALE	DRAWN BY	DATE
As Shown	Delta	1/2021
PROJECT	APP'D BY	DRAWING NO.
23-227	AB	4.0

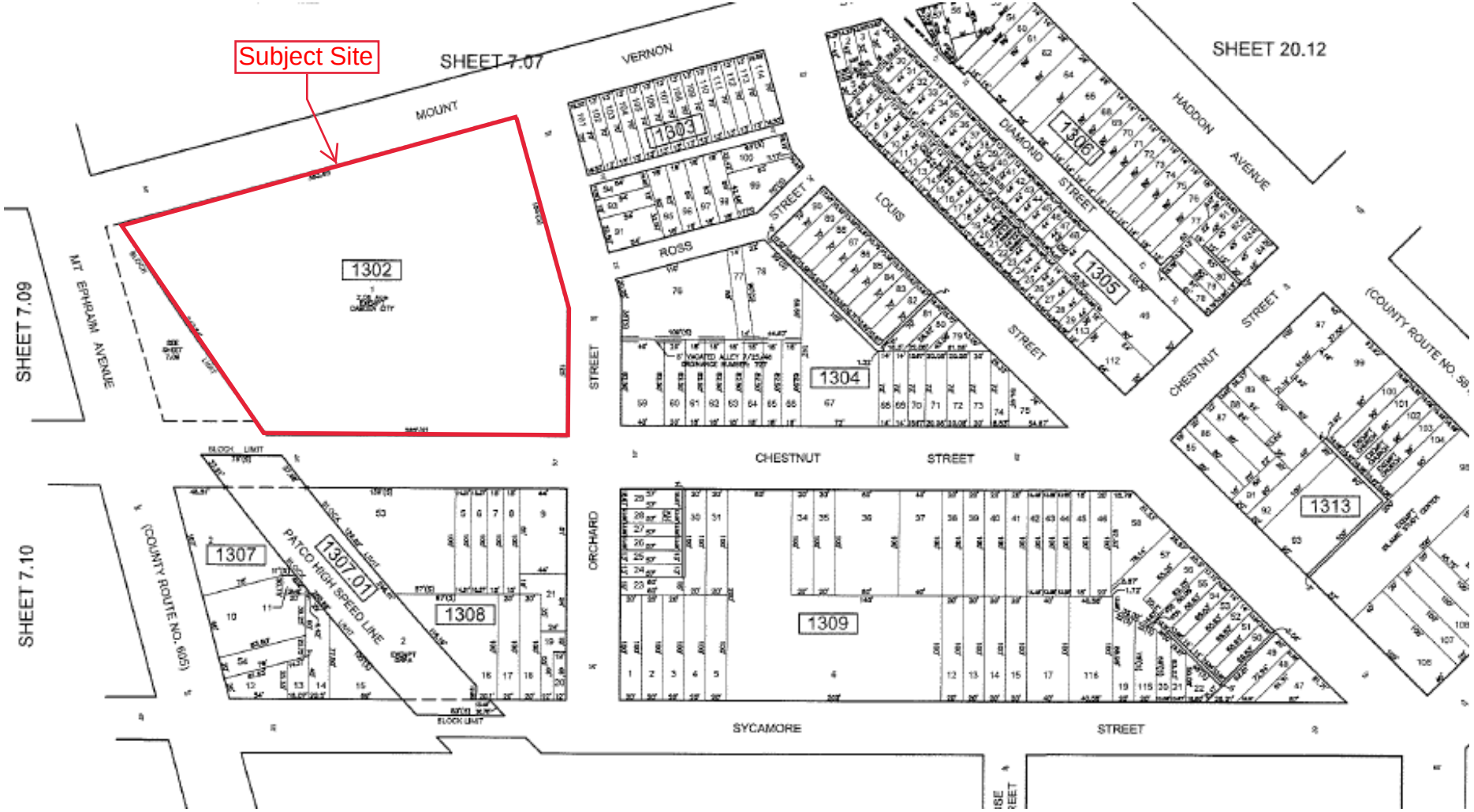

Figure 5.0:

Tax Map

Reliable Tire Co.
1115 Chestnut Street
Block 1302, Lot 1
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SCALE	DRAWN BY	DATE
NTS	City of Camden	1/2021
PROJECT	APP'D BY	DRAWING NO.
23-227	AB	5.0

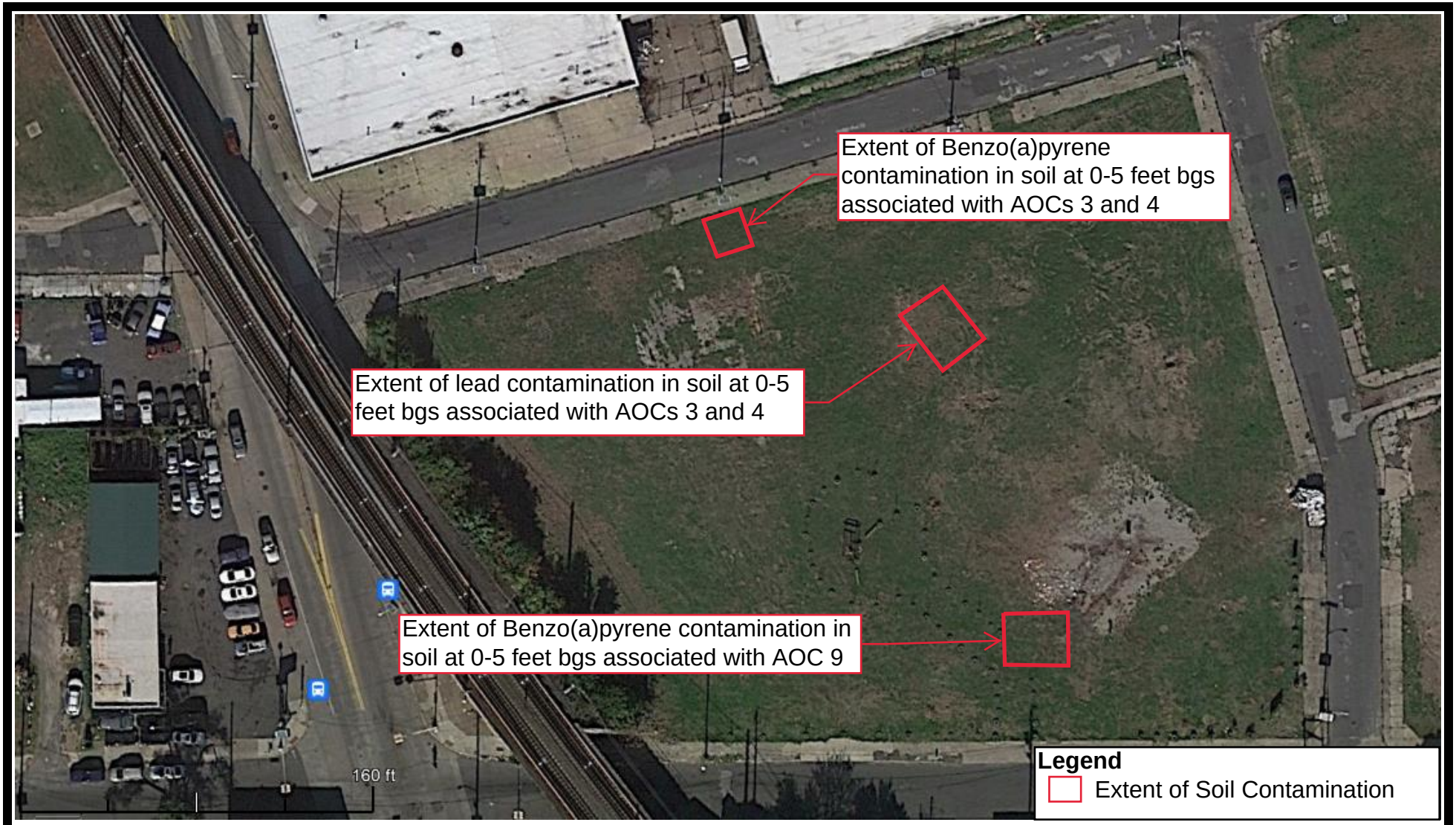

Figure 6.0

Contaminated Soils Map

Reliable Tire Co.
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Block 1302, Lot 1
Camden, Camden County, New Jersey 08103

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23-227	AB	