

SITE INVESTIGATION REPORT AND REMEDIAL INVESTIGATION WORKPLAN

Former Eagle/Anchor Sheet Metal
6 – 30 Chapel Street and 172 – 178 Fleming Avenue
Block 2467, Lots 1, 2, 3, 5, 7, 17, 18, 50, 51
Newark, New Jersey 07105
PI #: 015427
ISRA Case #: E2008-0309

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**PI NUMBER: 015427
ISRA CASE NUMBER: E2008-0309**

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Prepared by:

Geographic Services Inc.
105 Evesboro-Medford Road, Suite D
Marlton, New Jersey 08053
Phone: (856) 229-7018
Fax: (856) 229-7152

Prepared for:

**Thierry Fernandes
Fernandes Real Estate Management, LLC**
158 Fleming Avenue
Newark, New Jersey 07105

DRAFT

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1.0 INTRODUCTION

This Site Investigation Report (SIR) and Remedial Investigation Workplan (RIWP) was prepared by Geographic Services Inc. (GSI) on behalf of Mr. Thierry Fernandes, of Fernandes Real Estate Management, LLC, for the real property known as 6 – 30 Chapel Street and 172 – 178 Fleming Avenue (Block 2467, Lots 1, 2, 3, 5, 7, 17, 18, 50, 51), Newark, New Jersey 07105 (the Site).

A Site Location/Topographic Map is included as Figure 1. A Site Map, depicting the Site and adjacent properties is included as Figure 2.

This SIR/RIWP was prepared in accordance with the applicable sections of the New Jersey Department of Environmental Protection's (NJDEP) Technical Requirements for Site Remediation, N.J.A.C. 7:26E et seq. (TRSR), Administrative Requirements for the remediation of Contaminated Sites (ARRCS) N.J.A.C. 7:26C, and the applicable NJDEP Guidance Documents (found at www.nj.gov/dep/srp/guidance).

In May 2016, GSI performed a File Review of documents available from the NJDEP for the Site. GSI also reviewed documents provided during a March 9, 2016 meeting with Mr. Thierry Fernandes and summarized telephone conversations between the NJDEP and GSI regarding the Site.

GSI reviewed all provided documents and obtained copies of correspondence regarding the applicability of the Industrial Site Recovery Act (ISRA), a report prepared by KLK Environmental Group, LLC, correspondence from the legal counsel of a prospective Site buyer, reports, including NJDEP forms, Response Action Outcomes, Case Inventory Documents, etc. prepared by John Bee, the former Licensed Site Remediation Professional (LSRP) from Tapash Environmental Consultants (Tapash), an NJDEP Field Inspection Report, email correspondence and an NJDEP memorandum and Referral Form. The documents provided to GSI by Mr. Thierry Fernandes on March 9, 2016 consisted of emails and a summary document between John Bee and attorney for Mr. Fernandes. These documents consisted of Mr. Bee's defense of his submittals to the NJDEP, summaries of completed additional work and proposals for additional work

Based on the NJDEP database, the first two Preliminary Assessment Reports (PARs) and the SIR completed in 2009 and 2010, respectively, for the Site were found to be

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deficient. Based on the documents provided during the file review, GSI concurred with the NJDEP's finding of deficiencies. On September 28, 2010 the NJDEP received an LSRP Retention form, on June 8, 2011 an LSRP Opt-in Request was approved by the NJDEP. From this point on an LSRP was overseeing the remediation at the Site. Mr. Bee submitted an RAO, with associated reports and forms, for the Site, twice. Both times the NJDEP required Mr. Bee to withdraw the reports and the RAO otherwise the documents would be invalidated. Mr. Bee's reports lacked basic required components and organization. Mr. Bee's 2013 PAR was judged to be incomplete and disorganized by the NJDEP and subsequently by GSI. In an NJDEP memo dated January 14, 2014 regarding the Site, the RAO submission was described as follows: "The submission is unorganized; there are unbound papers and packages in the box; the QA/QC is still in the mailing envelopes; extraneous material submitted; the combination of poor organization and extraneous information makes review of the submission virtually impossible. Based on the information presented above, the NJDEP determined that the LSRP did not exercise reasonable care and diligence in the prosecution of the work for this case and is therefore in violation of N.J.S.A. 58:10C-16(b)." Mr. Bee was referred to the LSRP Board on February 10, 2014.

GSI concurred that the PAR was inadequate; however, after a thorough review it was determined by GSI that most of the analytical data obtained previously may be used.

GSI submitted a PAR to NJDEP on June 21, 2017, in accordance with the NJDEP's TRSR. Based on the 2017 PAR, a total of twenty-six (26) Areas of Concern (AOCs) were identified. The following is a list of 15 AOCs for which further investigation was required:

- AOC-1: Possible Gasoline Underground Storage Tank (UST)
- AOC-2: Other Possible USTs
- AOC-8: Three Storm Catch basins located at Southern Parking Lot
- AOC-9: Possible Septic System Leach Fields and Seepage Pits
- AOC-10: Sump Pit – At Southern Loading Dock
- AOC-11: Chapel Pile
- AOC-12: Historic Fill
- AOC-17: North Courtyard
- AOC-18: Anchor Sheet Metals - Back-Door
- AOC-19: North Courtyard Excavation
- AOC-21: Piping Potentially Insulated with Asbestos

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AOC-22: Potential Crawl Space at Carpentry Room

AOC-24: Damaged 2- and 4-inch wells

AOC-25: Historic Use – Entire Site

AOC-26: Off-Site Groundwater Contamination

After additional review, it was determined that no further investigation is required for AOC-11, AOC-21, and AOC-24. Therefore, this SIR/RIWP was prepared to address the remaining twelve (12) AOCs.

1.1 SITE DESCRIPTION

The Site is located at 6 – 30 Chapel Street and 172 – 178 Fleming Avenue (Block 2467, Lots 1, 2, 3, 5, 7, 17, 18, 50, 51), Newark, New Jersey 07105. The Site is identified as Block 2467, Lots 1, 2, 7, 50 and 51. Prior to 2009, the current Lot 7 was subdivided into three Lots: 7, 17 and 18. The Site is situated at the northeast quadrant of the intersection of Chapel Street and Fleming Avenue, behind Block 2467, Lots 3 and 5. The entire eastern Site boundary is situated adjacent to Block 2466, Lot 21. The entire northern Site boundary is situated adjacent to Block 2467, Lot 20.

The Site consists of 1.588 acres and is located within an area with a mix of industrial, commercial, and residential development in the Iron Bound section of Newark. The Site is currently occupied by one irregularly shaped, brick and cinder block building, situated at the northern and central portion of Lot 7. The building footprint comprises approximately 38,000 square feet (SF) and is primarily one story except for the northwest and southwest portions which are two stories; there is no basement. The Site building is divided into six first floor leaseholds and three second floor leaseholds. There is one tenant, European Iron works, which occupies an approximately 4,300 SF leasehold on the first floor, at the southeast corner of the Site building; the remainder is either vacant or utilized by Fernandes Steak House for storage, parking or maintenance. The northwest leasehold is two stories, has an approximate 1,800 SF and is in the process of being demolished. A concrete slab is situated at the southeast corner of Lot 7 and is the remnant of a 1,375 SF storage structure that was demolished in 2014 due to a roof collapse. There is a gravel yard at the northwest corner of the Site and there is an asphalt paved driveway and parking lot at the southern portion of the Site with access from both Fleming Avenue and Chapel Street. The narrow areas to the east and northeast of the Site building

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are earthen and or gravel covered. Storm drainage inlets and catch basins were noted in the paved area to the south of the Site building.

Please refer to Figure 1 for a Site Location/Topographic Map, Figure 2 for a Site Map, and Figure 3 for an Areas of Concern Map.

1.2 PHYSICAL SETTING SOURCES

1.2.1 Topography

GSI's review of the USGS topographic map for the *Elizabeth, New Jersey, 7.5-Minute Quadrangle*, 1995, indicates that the Site is approximately 13 feet above mean sea level (MSL) and displays a generally flat topography with the surrounding topography sloping downward to the west-northwest and the Passaic River. No surface water features were observed on the Site during the Site inspection or on the topographic map. The nearest surface water is the Passaic River, located approximately 1,250 feet to the northwest of the Site. A copy of the topographic map is included as Figure 1.

1.2.2 Geology

According to the NJDEP's *Geologic Map of New Jersey* (<http://www.state.nj.us/dep/gis/>), the Site is located within the Piedmont Physiographic Province. Rocks of the Piedmont Province are separated from the rocks of the Highlands Province by a series of major faults, including the Ramapo Fault. The more resistant gneisses and granites on the up-thrown northwest side of the faults make a prominent escarpment, 200 to 800 feet in height, extending from Mahwah through Boonton and Morristown to Gladstone, and from there westward in an irregular line to the Delaware River near Milford.

South and east of this escarpment, interbedded sandstone, shale, conglomerate, basalt, and diabase of the Piedmont Province underlie a broad lowland interrupted by long, generally northeast-southwest trending ridges and uplands. The rocks of the piedmont are of late Triassic and Early Jurassic age (230 to 190 million years old). They rest on a large elongated crustal block that dropped downward in the initial stages of the opening of the Atlantic Ocean – one of a series of such blocks in North America. These down-dropped blocks formed valleys known as rift basins. Sediment eroded from adjacent uplands was deposited along rivers and in lakes within the

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basins. These sediments became compacted and cemented to form conglomerate, sandstone, siltstone, and shale. They commonly have a distinctive reddish-brown color.

In the course of rifting, the rock layers of the Piedmont became tilted northwestward, gently folded, and cut by several major faults. Volcanic activity was also associated with the rifting, as indicated by the basalt and diabase interlayered with the sandstone and shale. Diabase is a rock formed by the cooling of magma at some depth in the crust; basalt is formed by the cooling of an identical magma that has been extruded onto the surface as lava. Both basalt and diabase are more resistant to erosion than the enclosing sandstone and shale and therefore they form ridges and uplands. The Palisades, Rocky Hill, Sourland Mountain, and Cusketunk Mountain are underlain by diabase layers. The Watchung Mountains, Long Hill, and Hook Mountain are underlain by basalt layers. Valleys and lowlands between these ridges are underlain by shale and sandstone.

The basalt and diabase are extensively quarried for crushed stone. In the past, “brownstone” was widely quarried from sandstone units. Also, minor quantities of copper were extracted from sandstone and shale associated with the basalt and diabase. The basalt and diabase generally are poor aquifers but the sedimentary rocks are, in places, capable of yielding large quantities of water.

According to the NJDEP mapping tool found at:

<http://www.nj.gov/dep/gis/geoweb splash.htm>, the surficial geology at the Site consists of the Quaternary (Holocene and latest Pleistocene) formation, Lower Postglacial Stream Terrance Deposits. The bedrock geology consists of the Jurassic aged formation, Passaic Formation Mudstone facies; the lithology is sandy mudstone.

Based on the field observation performed during current and former investigations, the Site is primarily underlain by approximately 3 feet of fill material followed by native soils consisting of sand, silts, and clays associated with riverine deposits. Ground water was encountered in the recently installed monitoring wells at approximately 10 feet below ground surface (bgs).

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1.2.3 Soils

According to the NJDEP's GeoWeb, the soils at the Site are classified as, URDUNB, Urban Land, Dunellen substratum, 0 to 8% slopes. The soils are further classified as well-drained. A soil survey for Essex County was reviewed for this report. The typical soil profile for the Site is generally described as urban land. Urban land consists of areas where more than 80 percent of the surface is covered by industrial plants, shopping and business centers and other structures. These areas are nearly all in the highly populated northern half of the county. The areas generally range from 2 to 1,000 acres. Most are nearly level to moderately sloping, but few are strongly sloping and steep. It is inferred that fill material has been used in places to build up wet soils and that most areas have been excavated or filled with material that is now almost totally paved.

1.2.4 Hydrology

Based on monitoring wells installed at the Site and recent gauging data, ground water flow direction is to the north-northwest. Therefore, in assessing potential off-site environmental impacts, properties located in a southeasterly direction of the Site are of primary concern as potential off-site sources of on-site ground water contamination. However, actual groundwater flow direction is often locally influenced by factors such as underground structures, seasonal fluctuations, soil and bedrock geology, production wells, and other factors beyond the scope of this study. Estimated groundwater levels and/or flow direction(s) may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations.

The State Database Well Information (SDWI) database included in the EDR database report from the January 2017 PAR indicated that there are three registered wells within one mile of the Site. Groundwater levels were not reported.

1.2.5 Other Physical Setting Sources

Flood Plain Map

GSI reviewed the ESRI/Federal Emergency Management Agency (FEMA) hazard awareness site

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(<https://msc.fema.gov/portal>) to obtain flood zone information for the Site. According to the National Flood Insurance Program, Flood Insurance Rate Map (FIRM) of the City of Newark, New Jersey (Panel Number 34013C0157F) the Site is located within the 500-year flood zone. The area of the Site is designated as Zone X, Other Areas and is defined as "Areas determined to be outside the 0.2% annual chance floodplain".

Wetlands Map

GSI did not observe any suspect wetland area on the Site during the Site visit. GSI reviewed the USFWS website (http://wetlands.fws.gov/mapper_tool.htm) for the USFWS *National Wetlands Inventory* map of the USGS Elizabeth, New Jersey Quadrangle. The review of the USFWS *National Wetlands Inventory* map indicated that there are no mapped wetlands at the Site. The review of the EDR report from the January 2017 PAR indicated that there are no federal or state mapped wetlands located on or adjacent to the Site. The nearest mapped wetlands are approximately 0.27-miles to the northwest and are associated with the Passaic River.

Historic Fill Map

GSI also conducted a search for historic fill maps prepared by the New Jersey Geological Survey and available on NJDEP's GeoWeb. These maps were created in response to the "Brownfield and Contaminated Site Remediation Act" (N.J.S.A. 58:10B-1 et seq.), which required the Department of Environmental Protection to map regions of the state where large areas of historic fill exist and to make this information available to the public. For the purposes of these maps, historic fill is non-indigenous material placed on a site in order to raise the topographic elevation of the site.

The Site is not identified as being historically filled on NJDEP's GeoWeb. However, multiple deed restricted areas with poly-nuclear aromatic hydrocarbons (PAH) and metals contamination consistent with historic fill are depicted in the surrounding area.

1.2.6 Receptor Evaluation

An updated RE is being submitted concurrently with this SIR. There are no sensitive receptors identified within 200 feet of the Site. The nearest residential receptor is located approximately 225 feet to the west.

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1.2.7 Ecological Receptor Evaluation

An Ecological Receptor Evaluation was completed to determine if further ecological evaluation is necessary pursuant to N.J.A.C. 7:26E-1.16. Further evaluation is required if all the following conditions are met:

1. Environmentally sensitive areas are identified on Site, adjacent to the Site, or under the potential influence of the Site in any manner;
2. Contaminants of concern are present above regulatory standards;
3. Potential contamination migration pathways are present to environmentally sensitive areas.

The Site is in a commercial/industrial area. No surface water features were observed on the Site during the Site inspection or on the topographic map. The nearest surface water to the Site is the Passaic River, located approximately 0.27-miles northwest of the Site. A copy of the topographic map is included as Figure 1. The areas surrounding the Site are primarily commercial and industrial use buildings.

There are no environmentally/ecologically sensitive areas on or immediately adjacent to the Site. Pursuant to N.J.A.C. 7:26E-1.16, because no Environmentally Sensitive Natural Resources (ESNRs) were identified on or adjacent to the Site, or under the potential influence of the Site in any manner, all three of the required conditions were not met; therefore, no further investigation of ecological receptors is required at this time.

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2.0 SITE BACKGROUND AND OVERVIEW OF AREAS OF CONCERN

Based on the 2017 PAR by GSI, the Site was developed with residential, commercial and industrial structures beginning some time prior to 1892; the residential and commercial structures were situated at the southern portion of the Site along Fleming Avenue and the southern portion of Chapel Street. There was one commercial structure in the northwest portion of the Site along Chapel Street from approximately 1908 to 1931. The central portion of the Site was developed with a tannery beginning some time prior to 1892. The residential and commercial structures persisted in approximately the same locations from 1892 through 1966 while the industrial operations expanded. The industrial operations were situated at the central and northern portions of the Site and consisted of leather processing and finishing from at least 1892 to approximately 1931 when Lexington Electric Products Co. began factory operations. The current Site building was constructed prior to 1946. Lexington operations persisted until approximately 1965, possibly as late as 1973. Eagle/Anchor Sheet Metal became a tenant in approximately 1976, a cessation of operations occurred in 2007. Multiple tenants utilized the Site building from 1981 to 2013 for warehouse storage space, repair shop and minor sewing and assembly. The Site is currently occupied by European Iron Works (operations include cutting and painting of metal), vacant space and storage. The current Site owners also own the adjacent restaurant and night club. The Site building is utilized to store restaurant furniture and equipment and to provide employee parking inside the building, entrance via a garage door on Chapel Street. There is a small carpenter shop at the southwest corner of the Site building which also services the restaurant and nightclub.

Based on the 2017 PAR, a total of twenty-six (26) Areas of Concern (AOCs) were identified. The following is a list of 15 AOCs for which further investigation was required:

- AOC-1: Possible Gasoline Underground Storage Tank (UST)
- AOC-2: Other Possible USTs
- AOC-8: Three Storm Catch basins located at Southern Parking Lot
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- AOC-10: Sump Pit – At Southern Loading Dock
- AOC-11: Chapel Pile
- AOC-12: Historic Fill

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AOC-17: North Courtyard
AOC-18: Anchor Sheet Metals - Back-Door
AOC-19: North Courtyard Excavation
AOC-21: Piping Potentially Insulated with Asbestos
AOC-22: Potential Crawl Space at Carpentry Room
AOC-24: Damaged 2- and 4-inch wells
AOC-25: Historic Use – Entire Site
AOC-26: Off-Site Groundwater Contamination

After additional review, it was determined that no further investigation is required for AOC-11, AOC-21, and AOC-24. Each AOC is depicted on Figure 3. Several AOCs have been previously investigated by others as discussed below and presented in the 2017 PAR.

AOC-1: Possible Gasoline Underground Storage Tank (UST)

The 1950, 1952 and 1973 Sanborn maps indicate a gasoline tank on Site, just south of the Site building. The August 1, 2013 report entitled "Site Investigation (SI) Report" prepared by Tapash, 120 N. Washington Street, Hammonton, NJ 08037 for the property located at 6-30 Chapel Street, Newark, NJ, PI# 015427, Block 2466 Lots 60, 51, 1, 2, 3, Block 2467, Lots 5, 7, 17, 18 ISRA Case # E2008-0309, Activity ISR080002 (Site), indicated that a geophysical survey was completed on April 18, 2013 by Phil Duran of EnviroPhysics. The results of the survey indicated no suspected tanks or former tank voids on Site; however, suspected tanks were located adjacent to the Site, in the sidewalk area along Fleming Avenue (see AOC 2 below).

Tapash noted on Page 106 of the 2013 SIR: "According to the Owner: Tanks were removed prior to 1985 and the implementation of UST regulations. There was no documentation available. Test pits were dug across the yards and soil brings drilled to investigate Fill and UST: No USTs were found by Geophysics. Clean Quarry Process Fill was encountered in the Anchor Metals yard to between 3-4 feet deep. A test pit was dug down the Main Yard by KLK along with the series of borings and test pits and borings were drilled by Tapash and sampled throughout the Main Yard. No USTs were found. Heating the building in recent times could have used ASTs or USTs. There is no evidence that any underground or above the ground storage tank was ever registered for this property. There was no documentation available. So, we conducted a Geophysics Survey: While the Yards had be repeatedly excavated, no USTs and no UST excavations were found."

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It appears that a sample was collected in the general area of the suspected UST; however, the Tapash figure is difficult to discern. It appears that the only VOC detected in the general area of this AOC was methyl chloride (detected between 6-7.8 micrograms per kilogram [$\mu\text{g/kg}$], or parts per billion [ppb]). This compound may be associated with leaded gasoline as it was used in producing lead-based gasoline additives. The current MGWSRS for methylene chloride is 0.013 mg/kg. Additional investigation is required at this AOC and is discussed in Section 6.1.

AOC-2: Other Possible USTs

The Sanborn maps from 1892, 1908, 1950 and 1952 indicate former residential and commercial structures at the southern portion of the Site at 172 through 178 Fleming Avenue and at the western portion of the Site at 10 and 28 Chapel Street. The 1953 aerial photograph indicates structures at 172 through 178 Fleming Avenue; however, the 1966 aerial photograph indicates no structures on the Site along Fleming Avenue. As noted above, the August 1, 2013 SIR prepared by Tapash, indicated a geophysical survey was completed on April 18, 2013 by Phil Duran of EnviroPhysics. The results of the survey indicated no suspected tanks or former tank voids on-site; however, suspected tanks were located adjacent to the Site, in the sidewalk area along Fleming Avenue. Additional investigation was required for these possible USTs and is discussed in Section 5.1.

AOC-8: Three Storm Catch Basins Located at Southern Parking Lot

There are three catch basin drains at the southern loading dock to collect storm water. The storm water flows via gravity to a sump located at the south side of the Site building. The sump is equipped with a pump and float system to transfer collected storm water to the storm sewer located in Chapel Street. GSI did not observe odors, sheens, oil layers, staining, or storage of hazardous substances near/in and around the catch basins during the PAR inspection.

A previous consultant reported via email to the current Site owners that groundwater contamination was detected in the area of the catch basins. GSI reviewed investigations completed by Tapash in the vicinity of this AOC. Soil sample DEC-1 @ 4' was collected adjacent to a storm drain and analyzed for VOCs. Analytical results identified acetone, cis-1,2-dichloroethene, PCE, and TCE. The Tapash report in general is not consistent with units of measurement and it is unclear if the analytical results are in mg/kg or $\mu\text{g/kg}$. If the concentrations were in $\mu\text{g/kg}$, which is the likely

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scenario, then TCE was identified above the NJDEP's February 2021 MGWSRS in this soil sample. In addition, ground water sample (DEC-2 GW) was collected from a temporary well advanced near the sump. Trichloroethene was detected at 2.2 micrograms per liter ($\mu\text{g/L}$), exceeding the NJDEP's GWQS of 1 $\mu\text{g/L}$ but below the NJDEP's Vapor Intrusion Ground Water Screening Level (VIGWSL) of 3 $\mu\text{g/L}$. All other VOCs, including TICs, were not detected.

Additional investigation is required for this AOC and is discussed in Section 6.2.

AOC-9: Possible Septic System Leach Fields and Seepage Pits

According to historical Sanborn maps, portions of the Site building were constructed prior to 1892, public sanitary sewer service may not have been available. City of Newark Engineering maps indicate sanitary sewer service in Chapel Street in 1937.

Tapash noted in the June 2013 SIR that "There were sewers running down the center of Chapel Street documented in the 1908 Sanborn Map" (Page 99). However, upon review, it appears these features are water mains and not sewers. Previous geophysical surveys conducted in 2013 by others did not identify subsurface features consistent with leach fields or seepage pits. Based on the known presence of fill in the southern parking lot as well as on-site construction history, it is very likely that a GPR survey would not identify clearly any former drainage structure that predates 1937.

Since this AOC can be considered part of historic Site operations, it is recommended that this AOC be investigated concurrently with AOC-25 as discussed in Section 6.7.

AOC-10: Sump Pit – At Southern Loading Dock

There are three catch basin drains at the southern loading dock to collect storm water. The storm water flows via gravity to a sump located at the south side of the Site building. The sump is equipped with a pump and float system to transfer collected storm water to the storm sewer located in Chapel Street. GSI did not observe odors, sheens, oil layers or storage of hazardous substances near/ in and around the sump during the 2017 PA inspection. It appears that this sump pit discharges to the storm drains discussed under AOC-8 above and therefore should be incorporated into investigations discussed in Section 6.2 below.

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AOC-12: Historic Fill

The subject Site is not identified on the Historic Fill of Elizabeth Quadrangle 2004 map in an area that is represented as a fill area. However, based on a review of nearby facilities in the NJDEP's GeoWeb application, multiple deed restricted areas with polynuclear aromatic hydrocarbons (PAH) and metal contamination consistent with historic fill were identified in the area of the Site. The property located to the east of the Site and spanning the entire eastern border of the Site has a deed restriction and virtual ground water classification exception area (CEA) for historic fill.

Tapash collected numerous samples throughout the Site; however, the piecemeal fashion of previous investigations coupled with incomplete analytical suites per the NJDEP's April 2013 *Historic Fill Technical Guidance* document makes using previous data to evaluate this AOC difficult. Additional investigation consistent with current requirements is necessary at this AOC and is discussed in Section 6.3 below.

AOC-17: North Courtyard

A soil sample collected by KLK in 2008 identified benzo(a)anthracene at 1.08 mg/kg and benzo(a)pyrene at 0.756 mg/kg. The benzo(a)anthracene concentration does not exceed any current NJDEP SRS and benzo(a)pyrene detection exceeds the current NJDEP RIDSRS of 0.51 mg/kg. KLK opined in their report that the PAH detections were likely related to a "chunk of asphalt"; however, the report did not have an accompanying figure depicting the soil sample location with these detections.

Regardless, Tapash completed a removal action to excavate the concentrations of the PAHs on December 11, 2012. Tapash collected four (4) post-excavation soil samples (B-9A, 9B, 9C, 9D) in the area where KLK collected the initial soil sample that triggered the remediation. According to the Tapash Summary Letter, all hex chrome analytical results were below 20 mg/kg. While the chromium/hexavalent chromium appears to have been investigated, the post-excavation soil samples identified above were for a small area of PAH exceedances and do not account for the widespread area of brick fill previously present on-site throughout the northern courtyard in the 2013 Tapash SIR (See AOC-19). While Tapash has investigated this area, full data was not identified in the documents reviewed.

Analytical results from a groundwater sample collected from former MW-2, drilled adjacent to the ramp, indicated no exceedances for VOs, BNs and 13 metals.

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Based on the data reviewed, the previous investigations are inadequate post-excavation soil samples to evaluate the former remediation. In addition, it appears that brick fill is present throughout this area that may be different than the suspected historic fill identified in AOC-12. Therefore, additional investigation is required for this AOC and is discussed in Section 6.4.

AOC-18: Anchor Sheet Metals - Back-Door

Three soil samples were collected at the back-door area in the eastern portion of the Site by KLK in 2008; however, analytical results were not included. The August 1, 2013 PAR prepared by Tapash identifies AOC 2.5 as “Back Door of Anchor Metals” at the rear of the property which was adjacent to the backdoor of the former Anchor Sheet Metal facility where metals waste, cutting oils, and solvents were suspected. The 2017 SIR completed by Tapash further stated, “This area was excavated to 5 feet and soil was disposed by Cycle Chem. Three post excavation perimeter soil samples were collected at 5 feet (BCK03A, B, C). One sample (BCK 03D) was collected below the excavation at 6 feet. After the PCE and TCE exceedances (Impact to MGW) were discovered in post excavation sample ‘A’, the excavation was enlarged to 6.5 feet deep and post excavation samples T3A, T3B, T3C and T3D were collected at 6.5 feet bgs and indicated all contaminated soil was removed.”

Analytical results for T3A, T3B, T3C, T3D, and T3E were reviewed. Each sample contained detections of methylene chloride and TCE, with sample T3D also containing a detection of PCE. TCE was detected in sample T3D at 0.0064 mg/kg, just below the current MGWSRS of 0.0065 mg/kg. All analytical results were reported below the current MGWSRS. There were no figures identified that depict these sample locations. The size of the excavation, if the Tapash figure is accurate, is estimated to be 140 square feet.

Further investigation is required for this AOC and is discussed in Sections 5.3 and 6.5 below.

AOC-19: North Courtyard Excavation

The August 1, 2013 SIR by Tapash indicated that “brick fill material”, contaminated by motor oil, metal shavings and cuttings was excavated to three feet from the Site and replaced with clean QP. Post excavation samples were analyzed for PP+40 and indicated all impacted fill was removed. The excavated pile was tested for disposal

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parameters (sample – Chapel Fill Pile) and according to Hyam Levi, KLK, was trucked away under manifest”. The remedial extents are unclear.

Additional investigation of this AOC is warranted and should be conducted concurrently with AOC 17. The additional investigation is discussed in Section 6.6 below.

AOC-22: Potential Crawl Space at Carpentry Room

A September 27, 2013 NJDEP Field Inspection Report, for PI # 015427, indicated potential AOCs not included in the 2013 PAR submitted by Tapash. One potential AOC included a potential crawl space beneath the Carpentry Room. An email from John Bee (Tapash) to Octavio Fernandes indicated that sample collection was attempted. Currently, the southwest corner of the Site building is plaster faced on the south side with a carpentry shop in the first-floor compartment and vacant office space at the second-floor leasehold. The carpentry shop has a wooden floor.

Additional investigation was required for this AOC and is discussed in Section 5.4 below.

AOC-24: Damaged 2- and 4-inch wells

A September 27, 2013 NJDEP Field Inspection Report, for PI # 015427, indicated potential AOCs not included in the 2013 PAR submitted by Tapash. One observation listed in the report was “Damaged 2-inch wells and a 4-inch well”. An email from John Bee, Tapash, to Octavio Fernandes indicated that two wells needed repair. GSI did not observe any wells on Site at the time of the 2017 PA inspection; however, three circular concrete patches, one with an encompassed metal ring, were observed in the southern parking lot adjacent to Chapel Street. A review of the NJDEP’s DataMiner database indicated no well permits issued for the Site.

The wells should be properly closed administratively with NJDEP. If they were not abandoned by a licensed well driller then proper steps to attempt to locate and properly abandon the wells should be followed. No further investigation (e.g., soil and ground water sample collection) is required for this AOC since the AOC does not consist of potentially contaminated media.

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AOC-25: Historic Use – Entire Site

The Site was utilized by the Tanning industry from at least 1892 until 1931, a company called Lexington Electric Products Corporations conducted operations on the Site from approximately 1931 to 1973. The Tanning industry utilized solutions containing chromium and the production of patent leather, japanning, and utilized various varnishes and finishes. KKK conducted an environmental investigation in 2008. The analytical results from eighteen (18) soil samples indicated that concentrations of chromium ranged from 10.9 mg/kg to 35.3 mg/kg and concentrations of lead ranged from 2.19 mg/kg to 49 mg/kg. Samples indicating a chromium concentration of 20 mg/kg or greater were additionally analyzed for hexavalent chromium.

Five temporary wells were installed across the property and a groundwater sample was collected from each well. Each sample was analyzed for VOCs, SVOCs, and Priority Pollutant (PP) metals. None of the analytes, including hexavalent chromium, were detected. According to the 2013 SIR, Tapash re-sampled for chromium and hexavalent chromium due to incomplete laboratory data supplied by KKK. The 2012 Tapash investigation included the drilling of ten borings and excavation of five test pits resulting in the collection of 15 soil samples. Tapash collected 18 additional soil samples; sample locations were co-located with 2007 KKK sample locations. Each sample was analyzed for hexavalent chromium. Results indicated no concentrations exceeding NRDCSRs. Tapash reported that Kevin Schick NJDEP concluded, “the background is acceptable to NJDEP in the Church Street site for Chromate but not benzo(a)pyrene”. This statement has not been verified.

Additional investigation is required for this AOC as discussed in Sections 5.5 and 6.7 below. It should be noted that several other on-site AOCs are collocated within this AOC (e.g., AOC-9, AOC-12, AOC-17, AOC-18, AOC-19, and AOC-26).

AOC-26: Off-Site Groundwater Contamination

Based on a review of the 2009 RIR prepared for Flexsol Packaging, 540-560 Ferry Street (located 140 feet to the east of the Site), groundwater at the nearby facility is contaminated with PCE, TCE, vinyl chloride, cis-1,2-dichloroethene, lead, arsenic, cadmium and other parameters above the NJDEP’s GWQS. Also, the groundwater flow direction is depicted as flowing to the northeast and it is also depicted as radially flowing from a mounded area at the southwestern portion of the facility.

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In addition, Star Finishing Inc. is located at 41 Chapel Street, adjacent to the west side of the Site. Investigations have been completed at this facility and the RI delineated PCE and TCE impacts in soil. The RI confirmed PCE and TCE impacts in ground water; however, the impacts in ground water have not been delineated to date. Despite the installation of five monitoring wells, a definitive groundwater flow direction has not been determined. Monitoring well gauging data indicates a stagnant water table (i.e. no discernible groundwater gradient); however, the distribution of PCE and TCE concentrations in groundwater indicate a net migration to the southeast.

The potential for on-site contamination exists from these off-site sources and additional investigation for this AOC is required and discussed in Section 6.8 below.

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3.0 TECHNICAL OVERVIEW

The following sub sections provide a summary of sampling methodology, certifications and qualifications of firms involved in the SIR, the nature of contamination detected at the Site and applicable remediation standards.

3.1 Sampling Methodology

Soils were screened with a calibrated Photoionization Detector (PID) and lithology was observed. Soil samples were collected from a discrete six-inch interval for laboratory analysis into lab-provided glassware.

Temporary monitoring wells were utilized to collect ground water samples. The temporary wells were constructed with five feet of one-inch diameter, solid PVC casing and approximately fifteen feet of one-inch diameter 10-slot PVC screen installed within a direct push boring. Each point was purged with quarter inch dedicated poly tubing and a peristaltic pump until free from sediment. A dedicated disposable bailer was utilized to collect ground water samples from the temporary wells.

The permanent monitoring wells were sampled using the Volume Averaged Purging and Sampling methodology found in the NJDEP's *Field Sampling Procedures Manual* (FSPM). Ground water samples to be analyzed for VOCs were collected with a disposable bailer, ground water samples analyzed for base neutrals (BN) and metals were either collected with a peristaltic pump or a disposable bailer.

Immediately upon collection, ground water samples were transferred to laboratory provided glass ware, then stored in a cooler maintained at 4° C with wet ice, until retrieved. Ground water samples were retrieved by a NJ certified laboratory (see Section 3.2) under chain-of-custody and transported to the laboratory facility. All laboratory reports for data discussed in this report are included in Appendix A.

3.2 Certification of Firms

GSI was retained as the environmental consultant by the PRCR. David Pry was retained by the PRCR to serve as Licensed Site Remediation Professional (LSRP), LSRP Number 573686. Mr. Pry reviewed and oversaw the investigations reported in this SI.

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As of April 2025, Mr. Pry dismissed himself as LSRP and Mr. Ed Sullivan (LSRP Number 573514) was retained. Mr. Sullivan reviewed this SIR required documents as per the NJDEP's TRSR.

Soil and ground water samples were analyzed by Integrated Analytical Labs (IAL), a NJDEP-certified laboratory (New Jersey Certification # 14751).

S&S Subsurface Investigations, Inc., of Egg Harbor City, New Jersey, licensed well drillers installed three (3) monitoring wells (MW-1, MW-2, and MW-3) on October 26, 2022. Arthur Salvatore, Master Well Driller License Number: 0001616, drilled and installed three, 20 feet deep wells under NJDEP Permit Numbers: E202211861, E202211862, and E202211864, respectively. The Monitoring Well Permits and Well Records are included in Appendix B.

Wayne W. Burgett, Professional Land Surveyor, New Jersey License Number 24GS03165400, of Zenith/Nadir Survey, 132 E Clinton Street, Clayton, New Jersey 08312, originally surveyed the Site features on September 31, 2012 (revised on August 1, 2013, April 21, 2017, May 8, 2018) including the building, property lines, monitoring wells (top of casing elevations), etc. The Plan of Survey – Monitoring Well Survey for the two most recent revisions are included in Appendix C and serve as the base maps for Figures presented herein.

3.3 Overall Nature of Contamination

Based on the 2017 PAR by GSI, the Site was developed with residential, commercial and industrial structures beginning some time prior to 1892; the residential and commercial structures were situated at the southern portion of the Site along Fleming Avenue and the southern portion of Chapel Street. There was one commercial structure in the northwest portion of the Site along Chapel Street from approximately 1908 to 1931. The central portion of the Site was developed with a tannery beginning some time prior to 1892. The residential and commercial structures persisted in approximately the same locations from 1892 through 1966 while the industrial operations expanded. The industrial operations were situated at the central and northern portions of the Site and consisted of leather processing and finishing from at least 1892 to approximately 1931 when Lexington Electric Products Co. began factory operations. The current Site building was constructed prior to 1946. Lexington operations persisted until approximately 1965, possibly as late as

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1973. Eagle/Anchor Sheet Metal became a tenant in approximately 1976, a cessation of operations occurred in 2007. Multiple tenants utilized the Site building from 1981 to 2013 for warehouse storage space, repair shop and minor sewing and assembly. The Site is currently occupied by European Iron Works (operations include cutting and painting of metal), vacant space and storage. The current Site owners also own the adjacent restaurant and night club. The Site building is utilized to store restaurant furniture and equipment and to provide employee parking inside the building, entrance via a garage door on Chapel Street. There is a small carpenter shop at the southwest corner of the Site building which also services the restaurant and nightclub.

3.4 Applicable Remediation Standards

The Remediation Standards for Contaminated Sites, N.J.A.C. 7:26D (last amended May 6, 2024) and the Ground Water Quality Standards, N.J.A.C. 7:9C (last amended February 2025) are the applicable soil and ground water remediation standards.

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4.0 QUALITY ASSURANCE/QUALITY CONTROL

4.1 Quality Assurance Project Plan (QAPP)

The following Quality Assurance Project Plan (QAPP) was completed by GSI under the advisement of David Pry for this SI. The QAPP has been prepared in accordance with the NJDEP's TRSR. The QAPP establishes analytical protocols and documentation requirements in order to provide acceptable results, with respect to the methods of sample collection, review and analysis.

4.1.1 Site Investigation Scope of Work

Various on-site AOCs were investigated as described in Section 5.0 below. GSI, under the supervision of David Pry, completed all field activities, data analysis and report preparation. Analytical laboratory services were provided by Integrated Analytical Labs (IAL) Certification # 14751.

4.1.2 Data Quality Objectives

The overall Quality objective was to develop and implement procedures for field sampling, chain-of-custody, laboratory analysis and reporting to comprehensively and accurately determine the environmental conditions, of ground water and from ground water, at the Site. Specific procedures for sampling, chain-of-custody, and preventative maintenance of field equipment are detailed below. Specific procedures for laboratory instrument calibration, laboratory analysis and reporting of data were conducted consistent with the IAL Statement of Qualifications. IAL is a New Jersey Certified laboratory and conforms with the required practices for the specific analytical methods used.

4.1.3 Quality Control Checks and Frequency

All analytical reports include the New Jersey Reduced Deliverable format (see Appendix A). IAL follow their own Quality Assurance Manual and perform duplicates, spikes, etc. at a prescribed frequency.

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4.1.4 Calibration and Preventative Maintenance Procedures

Equipment utilized to collect and measure environmental data was calibrated at a sufficient frequency and with a method to produce accurate and reproducible results, as per the manufacturer's specifications. All equipment was examined to ensure that it was in good operating condition prior to all field work. GSI consulted the manufacturer's manual, and operated all equipment as prescribed by the manufacturer.

4.1.5 Sample Handling, Storage and Preservation

Sampling activities were performed in accordance with the NJDEP's August 2005, Field Sampling Procedures Manual (FSPM), the NJDEP's TRSR, and all applicable NJDEP guidance documents.

All samples were collected and placed in a cooler with wet ice while the sampler was wearing clean disposable gloves that were changed at each sample location to prevent cross contamination. Each sampling jar was labeled with the following information: Site name, sample number, sampler, date and time of sample collection and the type of analysis to be performed. Samples were stored in proper containers supplied by the laboratories, using preservatives when necessary. All samples were maintained in the cooler at a temperature of 4° C until placed into the custody of the laboratory (see Sample Custody below).

4.1.6 Sample Custody

The custody and integrity of samples are maintained from the collection of the sample, through the transport, sample receipt, preparation, analysis, storage, report generation and finally disposal. Legible records completed with ink, regarding the custody and condition of samples were maintained by GSI in the field and by the laboratory and are included in this report. GSI maintained a chain-of-custody record of the samples through pick-up by the laboratory. IAL maintains an internal chain-of-custody which is provided with the laboratory reports (see Appendix A).

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4.1.7 Laboratory Data Deliverable

Laboratory data deliverables are in reduced or full format in accordance with the NJDEP's TRSR and the laboratories' Statements of Qualifications (see Appendix A). Additionally, electronic data deliverables that meet the NJDEP HAZSITE requirements will be submitted within NJDEP Online during remedial phase submittal.

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5.0 SITE INVESTIGATION

All analytical data obtained during the Site Investigation is included in Appendix A. Table 1 provides a Sampling Summary Table.

5.1 AOC-2: Other Possible USTs

Three suspected USTs were identified off-site and adjacent to the southern property boundary during previous GPR surveys. On August 27, 2024, two of the suspected USTs were uncovered and confirmed to be tanks. The USTs were then removed by Brink Tank Services. The USTs were uncovered, opened, and cleaned with residual liquid removed by A&A Oil Recovery Co. The cleaned, empty USTs were removed from the ground and inspected.

A total of five (5) post-excavation soil samples were collected per tank; four (4) sidewall samples and one (1) base. The samples were submitted for Category 1 Extractable Petroleum Hydrocarbon analysis (EPH Cat 1). Analytical results ranged from non-detect to an estimated value of 41.4 milligrams per kilogram (mg/kg) with the exception of UST2-PE5 (the base sample) where EPH Cat 1 was detected at 4,080 mg/kg, below the NJDEP's RIDSRS but exceeding the NJDEP's Ecological Screening Level of 1,700 mg/kg. Sample UST2-PE5 was additionally analyzed for PAHs and none were detected above the NJDEP's MGWSRS.

As noted in Section 1.2.7 above, GSI completed a Receptor Evaluation – Ecological (N.J.A.C. 7:26E-1.16). There are no ESNRs identified on-site or adjacent to the Site. In addition, there are no ESNRs that are being impacted by contamination from this AOC. Therefore, no further investigation is required for UST 1 or UST 2.

On August 28, 2024, the UST identified under the sidewalk but in close vicinity to a natural gas main was uncovered and cleaned. Due to the proximity to the natural gas main, it was determined that the tank could not be removed without undermining the utility. Therefore, the tank was abandoned in place. Prior to abandonment the tank was cleaned and holes cut in the base to facilitate sample collection. Three base samples were collected and submitted for EPH Cat 1 and PAH analysis. All detected EPH concentrations were below the NJDEP's RIDSRS and Ecological Screening Level. In addition, all detected PAH concentrations were below the applicable NJDEP MGWSRS.

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Based on the post-excavation soil samples at the three USTs and ecological evaluation, no additional investigation is required for this AOC. Post-excavation analytical results are included in Tables 2 and 3 and depicted on Figure 4.

5.2 AOC-8: Three Storm Catch basins located at Southern Parking Lot

On May 16, 2022, GSI installed two (2) soil borings, GSISB-1 and GSISB-2, in the general area of the storm drains and former Tapash sample locations. Soil sample GSISB-1 was collected from 5.5-6 ft bgs and soil sample GSISB-2 was collected from 4.5-5 ft bgs. Each was submitted for VOCs+15 with GSISB-2 (4.5-5) additionally analyzed for PCBs. Acetone and carbon disulfide were detected in soil sample GSISB-1 (5.5-6) below the most stringent NJDEP's MGWSRS. No other analyte was detected in either soil sample.

Two (2) temporary wells were also installed within the general area of this AOC. Temporary well TW5 10-15 was installed on October 31, 2017 and sampled for VOCs+15. Analytical results identified cis-1,2-dichloroethene, TCE, PCE, and vinyl chloride above the NJDEP's GWQS with TCE, PCE, and vinyl chloride also exceeding the NJDEP's Vapor Intrusion Ground Water Screening Level (VIGWSL). Temporary well GSISB-2GW was installed on May 16, 2022 and sampled for VOCs+15. Analytical results identified cis-1,2-dichloroethene, TCE, PCE, and vinyl chloride above the NJDEP's GWQS with TCE, PCE, and vinyl chloride also exceeding the NJDEP's Vapor Intrusion Ground Water Screening Level (VIGWSL). The concentration of cis-1,2-dichloroethene increased an order of magnitude between the two events from 145 micrograms per liter (µg/L) to 1,470 µg/L.

Ground water samples were collected from permanent wells in November 2022 and December 2023 (discussed in Section 5.5 below) which were installed after the temporary well investigations were completed. These new wells are within the general area of this AOC, with monitoring well MW-2 being closest to the former temporary wells. The permanent wells were sampled in December 2023. Analytical results identified TCE and PCE above the NJDEP's GWQS but below the VIGWSL. Both cis-1,2-dichloroethene and vinyl chloride were either non-detect or below the NJDEP's GWQS. Therefore, there is potential that the former exceedances are related to turbidity rather than dissolved phase contamination. Analytical results from the November 2022 sampling event can be found in Table 6.

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Additional investigation of both soil and ground water is required at this AOC and is discussed in Section 6.2 below. Soil analytical results are included in Table 4 and soil sample locations are depicted on Figure 5. Temporary well analytical results are depicted on Figure 6 and included in Table 5.

5.3 AOC-18: Anchor Sheet Metals - Back-Door

GSI collected soil sample GSISB-6 on May 16, 2022, from 6-6.5 ft bgs in the general area of this AOC. Analytical results identified TCE at 0.00213 mg/kg, below the NJDEP's MGWSRS of 0.0065 mg/kg. In addition, GSI collected two soil samples at boring GSISB-10, one from 4.5-5 ft bgs and another from 6.5-7 ft bgs. Both TCE and PCE were detected in soil sample GSISB-10 (4.5-5). PCE and toluene were detected in GSISB-10 (6.5-7). All detections were below the applicable NJDEP MGWSRS.

Based on previous investigations discussed in Section 2 above, additional investigation is necessary at this AOC and is discussed in Section 6.5 below. Soil analytical results are included in Table 4 and soil sample locations are depicted on Figure 5.

5.4 AOC-22: Potential Crawl Space at Carpentry Room

GSI collected one soil sample within the crawlspace on October 26, 2022. The sample, GSIB-9 (0.5-1.0) was collected from 0.5-1 ft bgs and submitted for VOCs+15 and PCBs. Analytical results identified TCE at 0.00213 mg/kg, below the NJDEP's MGWSRS of 0.0065 mg/kg. No other VOC was detected. In addition, PCBs were not detected. Therefore, no further investigation is required for this AOC. Soil analytical results are included in Table 4 and soil sample locations are depicted on Figure 5.

5.5 AOC-25: HISTORIC USE – ENTIRE SITE

Three (3) monitoring wells (MW-1, MW-2, and MW-3) were installed on October 26, 2022, using direct push drilling methodology; the wells were constructed with 2-inch diameter, schedule 40, PVC casing and 10 slot screens to a depth of approximately 20 feet deep. The wells were developed with a submersible pump at an approximate rate of two gallons per minute until visibly free from sediments. Please refer to Section 1.2.2 for a detailed description of the geology on-site. Since direct push

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drilling was used to install the wells no drill cuttings were generated. All well records are included in Appendix B.

As noted in Section 3.1, ground water samples collected from permanent monitoring wells were collected using volume averaged purging and sampling methodology. Prior to each sampling event each well was gauged and depth to ground water measured. Monitoring well locations are depicted on Figure 7 and the November 2022 Ground Water Contour Map is included as Figure 8.

5.5.1 November 2022 Ground Water Sampling Event

One (1) ground water sample was collected from each of the three (3) permanent monitoring wells using volume averaged purging and sampling methodology on November 1, 2022. Each sample was submitted to IAL for VOCs+15 analysis. Analytical results identified TCE in MW-1 and MW-2 at 1.42 µg/L and 1.39 µg/L, respectively, exceeding the NJDEP's GWQS of 1 µg/L but below the VIGWSL of 3 µg/L. PCE was detected in MW-1 at 15.5 µg/L, exceeding the NJDEP's GWQS of 1 µg/L but below the VIGWSL of 36 µg/L. No other VOC was detected above the NJDEP's GWQS. Ground water analytical results for this event are included in Table 6.

5.5.2 December 2023 Ground Water Sampling Event

One (1) ground water sample was collected from each of the three (3) permanent monitoring wells using volume averaged purging and sampling methodology on December 1, 2023. Each sample was submitted to IAL for VOCs+15 analysis. Analytical results identified TCE in MW-1 and MW-2 at 1.04 µg/L and 2.07 µg/L, respectively, exceeding the NJDEP's GWQS of 1 µg/L but below the VIGWSL of 3 µg/L. PCE was detected in MW-1 and MW-2 at 19.2 µg/L and 2.15 µg/L, respectively, exceeding the NJDEP's GWQS of 1 µg/L but below the VIGWSL of 36 µg/L. No other VOC was detected above the NJDEP's GWQS. Ground water analytical results for this event are included on Table 7.

5.5.3 AOC-25 Conclusion

Additional investigation is required for soil and ground water as well as for the vapor intrusion pathway. These investigations are discussed further in Section 6.7 below.

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6.0 REMEDIAL INVESTIGATION WORKPLAN

6.1 AOC-1: Possible Gasoline Underground Storage Tank (UST)

One (1) boring should be advanced with a soil sample collected at the greatest likelihood of impact (e.g., elevated PID readings, staining/odor, etc.) and biased to greater than 5 feet below ground surface (ft bgs) which is the likely depth of the previous invert. One (1) soil sample should be submitted pursuant to Table 2-1 of the TRSR for VOCs+15 (including 1,2-dibromoethane and 1,2-dichloroethane) and lead. A temporary well should be installed at this location, screened across the water table, and collected for VOCs+15 (including 1,2-dibromoethane and 1,2-dichloroethane) on hold pending soil analytical results. If soil analytical results are less than the NJDEP's Migration to Ground Water Soil Remediation Standards (<MGWSRS), then no groundwater investigation is required at this AOC.

6.2 AOC-8: Three Storm Catch Basins Located at Southern Parking Lot

Soil sample DEC-1 @ 4' will be resampled and submitted for VOCs+15 analysis to confirm current concentrations. If exceedances of the applicable NJDEP Soil Remediation Standard are identified, then horizontal and vertical delineation will be completed.

Similarly, one (1) temporary well should be installed to resample the former DEC-2 GW location to confirm current concentrations. GSI notes that monitoring well MW-2 is located in close proximity to this former location (see Section 5.2 above). Investigations at this AOC include potential impacts from AOC-10.

6.3 AOC-12: Historic Fill

Based on available data, it is highly likely that Historic Fill Material (HFM) is present on all or part of the Site. The Site is 1.588-acres in size. Pursuant to the NJDEP's April 2013 *Historic Fill Technical Guidance* document, two (2) sample locations are required per acre of suspected HFM. Therefore, a total of four (4) samples are required to evaluate this AOC. Per the guidance, one (1) sample shall be analyzed for the full TCL/TAL+30 and EPH Cat 2 while the other three (3) should be analyzed for PAHs and TAL metals only. Initially all four (4) samples will be analyzed for PAHs and TAL metals. The sample with the highest concentrations will then be released for the remaining

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portions of the TCL/TAL+30 suite as well as EPH Cat 2.

The cap thicknesses (concrete and asphalt) will be carefully documented throughout the Site during the RI. This information will be used to establish a Deed Notice, if required.

6.4 AOC-17: North Courtyard

Two (2) borings should be advanced in the northern courtyard to further characterize this AOC, particularly to evaluate for the potential presence of a brick layer identified during former investigations. Soil samples should be analyzed for Cat 2 EPH and TCL/TCL+30 with hexavalent chromium submitted on hold pending the total chromium analytical results. The depth of the former excavation should be determined via soil borings advanced within the former excavation. These investigations will coincide with those discussed in AOC-19 below.

6.5 AOC-18: Anchor Sheet Metals - Back-Door

A GPR survey should be completed to attempt to determine the remedial extents of the excavation completed by Tapash. One (1) sidewall sample should be collected per sidewall and per every 30 linear feet and one (1) base sample collected for every 900 SF of excavation. All post-excavation soil samples should be submitted for VOCs+15 to confirm the remediation is complete.

6.6 AOC-19: North Courtyard Excavation

The perimeter of this area is approximately 360 linear feet. Following requirements for excavation post-ex sampling, 12 perimeter samples would be required. With an approximate area of 7,000 square feet, 8 base samples would be required. Based on the known contaminants of concern at the Site, the post-excavation soil samples will be analyzed for VOCs+15, SVOCs+25, PCBs (which do not appear to have been previously investigated but may be present due to the discharge of “oils” into the brick fill), and TAL metals with contingent hexavalent chromium pending the total chromium analytical results. The depth of the former excavation should be determined via soil borings advanced within the former excavation.

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6.7 AOC-25: Historic Use – Entire Site

Based on the widespread chromium distribution and the heterogeneity of analytical results, it appears that the chromium may be associated with on-site fill, should be investigated as part of AOC-12, and included in any future institutional and engineering controls, if required. The chromium may also be associated with the former on-site tannery operations.

6.7.1 GPR Survey and Investigation of Septic Leach Fields and Seepage Pits

To investigate potential septic system leach fields and seepage pits, it is recommended that an additional GPR survey is completed (which is also discussed above under AOC-18) to evaluate these features. However, if they were present beneath the current structure (in a formerly unimproved area of the Site), it is highly likely that the GPR will be ineffective to identify these former features. If any feature is identified consistent with a leach field or septic tank, borings should be advanced, and samples collected for EPH Cat 2 and TCL/TAL+30 due to the unknown potential discharges.

6.7.2 Ground Water

Additional ground water investigation is necessary based on the analytical results obtained from the three (3) on-site wells installed in the southern area of the Site in 2022. Ground water flow direction was calculated for the November 2022 ground water sampling event and determined that ground water flow direction is predominantly to the north-northwest; however, mounding was identified around MW-2 and MW-3. Additional gauging events are necessary to demonstrate ground water flow direction with seasonal variation.

Exceedances of the NJDEP's GWQS have been identified in MW-1 and MW-2 during the November 2022 and December 2023 ground water sampling events. GSI proposes to delineate the ground water exceedances using temporary wells. Up to four (4) temporary wells are proposed to horizontally delineate the exceedances. Since soils have not conclusively been shown to be a source of chlorinated contamination in ground water, vertical delineation will be attempted at the midpoint

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in between MW-1 and MW-2 due to their close proximity within the same parking lot. Discrete ground water samples will be collected no deeper than 50 ft bgs.

6.7.3 Vapor Intrusion

Based on analytical data from the September 2019 sampling event, PCE was detected in MW-1 at 112 µg/L and in MW-2 at 129 µg/L, exceeding the NJDEP's GWQS of 1 ug/L and VIGWSL of 36 ug/L. Both wells are located within 100' of structures. Therefore, even though significant attenuation has occurred (with the most recent PCE detections being 19.2 µg/L in MW-1 and 2.15 µg/L in MW-2 on December 1, 2023), the former trigger must be evaluated. The 100' trigger distance from each well was used to screen potential structure. The following three (3) structures are required to be investigated:

Address	Approximate SF	Sub-Slab Soil Gas Qty.	Indoor Air Qty.
A - On-site	37,000	6	5 + 1 Ambient Air
B - 164 Fleming Avenue (Fernandes Night Club)	8,000	4	3 + 1 Ambient Air
C - 158 Fleming Avenue (Fernandes Steak House II)	7,000	4	3 + 1 Ambient Air

Note – the ambient air can be common between A and B but should be separate for C.

There is potential for off-site ground water contamination to be present beneath these structures. That is why establishing ground water flow direction (discussed in Section 6.7.2 above) is critical to the Conceptual Site Model and will enable decision making should SSSG/IA results identify chlorinated compounds above the applicable screening levels and remediation standards. Further, if a Vapor Concern (VC) or Immediate Environmental Concern (IEC) are identified, additional steps will be required.

All samples should be collected pursuant to the NJDEP's *Vapor Intrusion Technical Guidance* document. The sub-slab soil gas (SSSG) samples may be 5-minutes in duration (ensure with the lab that the RLs will meet the NJDEP's Non-Residential Soil Gas Screening Levels) and indoor air (IA) samples should be 24 hr. in duration, with IA samples collected first and submitted on hold pending the SSSG analytical results.

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As part of the VI investigation, the NJDEP's Full Data Deliverables form will also be required to be submitted along with a copy of the lab package. It is recommended that the soil gas and indoor air samples be submitted on separate chains of custody.

6.8 AOC- 26: OFF-SITE GROUND WATER CONTAMINATION

Current data are inconclusive regarding potential sources of on-site ground water contamination. Additional ground water sampling and gauging are proposed to evaluate ground water trends on-site as discussed above. Ground water contours from the November 2022 ground water sampling event demonstrated a north-northwest ground water flow direction. However, additional gauging events are necessary to confirm flow and account for seasonal variation. Once ground water flow direction is confirmed and soils have been evaluated, this AOC will be further evaluated. All evaluation and analysis will follow the NJDEP's September 2018 *Off-Site Source Ground Water Investigation Technical Guidance* as well as the NJDEP's March 2018 *Commingle Plume Technical Guidance Document*, as necessary.

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7.0 CONCLUSIONS AND RECOMMENDATIONS

The purposes of this SIR/RIWP were to identify AOCs related to the Site, present the status of investigation at each AOC, and present proposed additional investigation (if required).

A total of twenty-six (26) AOCs have been identified at this Site, each is depicted on Figure 3. As discussed in this report, GSI completed SI activities at the following AOCs:

- AOC-2: Other Possible USTs
- AOC-8: Three Storm Catch basins located at Southern Parking Lot
- AOC-18: Anchor Sheet Metals - Back-Door
- AOC-22: Potential Crawl Space at Carpentry Room
- AOC-25: Historic Use – Entire Site

A Remedial Investigation is required at each of the following AOCs:

- AOC-1: Possible Gasoline Underground Storage Tank (UST)
- AOC-8: Three Storm Catch basins located at Southern Parking Lot
- AOC-9: Possible Septic System Leach Fields and Seepage Pits:
- AOC-10: Sump Pit – At Southern Loading Dock
- AOC-12: Historic Fill
- AOC-17: North Courtyard
- AOC-18: Anchor Sheet Metals - Back-Door
- AOC-19: North Courtyard Excavation
- AOC-25: Historic Use – Entire Site
- AOC-26: Off-Site Groundwater Contamination

No further investigation or remediation is recommended for the following AOCs based either on GSI's 2017 PAR or this SI:

- AOC-2: Other Possible USTs
- AOC-3: Storage and Staging Area – Storage Pad and Area – Various Satellite Storage Areas
- AOC-4: Storage and Staging Area – Dumpsters
- AOC-5: Storage and Staging Area Loading Dock - Southern
- AOC-6: Storage and Staging Area Loading Docks - Northern

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- AOC-7: Floor Drain
- AOC-11: Chapel Pile
- AOC-13: Former Boiler Room at Site Building
- AOC-14: Exterior Vents
- AOC-15: One (1) Interior Ceiling-Mounted Electrical Transformer
- AOC-16: Three (3) Pole-Mounted Transformers, East side of Site Building
- AOC-20: Former Metal Tracks
- AOC-21: Piping Potentially Insulated with Asbestos
- AOC-22: Potential Crawl Space at Carpentry Room
- AOC-23: Compressor Vent Discharge

It is recommended that an unrestricted use, Area of Concern-Specific Response Action Outcome (RAO-A) be issued for each of the AOCs identified above.

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FIGURES

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TABLES

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APPENDIX A

LABORATORY REPORTS

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APPENDIX B

WELL RECORDS AND PERMITS

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