KEYSTONE E-SCIENCES GROUP, INC.

REMEDIAL INVESTIGATION REPORT

MOISHE'S STORAGE and STELLAR PRINTING BUILDINGS
VERNON BOULEVARD
LONG ISLAND CITY, NEW YORK

Prepared for:
The Law Office of Fran Mulnick Parker
New York, New York

For Submittal to:
The New York State Department of Environmental Conservation
With Regards to the NATIONAL RUBBER AND ADHESIVES SITE
NYSDEC Brownfield Cleanup Agreement Case #C241028

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EXECUTIVE SUMMARY

The Keystone E-Sciences Group, Inc. (KESG) and Whitestone Associates, Inc. (Whitestone) were retained by the prospective purchasers and current property owners, respectively, to perform an environmental site evaluation of a building complex located at 8-33 40th Avenue in Long Island City, New York. This Remedial Investigation Report (RIR) presents the results of the site investigation efforts performed by KESG and Whitestone cooperatively since 2005. The building complex and property, referred to as the "subject property" in this Remedial Investigation Report (RIR), has been considered for purchase by the 8-33 40th Avenue Realty Corporation, a client of the law office of Fran Mulnick Parker. A site location map is provided as Figure 1. The subject property is located immediately downgradient from the National Rubber and Adhesives (NRA) site, which is a known contaminated property to the New York State Department of Environmental Protection (NYSDEC). The relative locations of the NRA site and subject property are shown on Figures 2 and 3.

KESG's initial tasks on this project involved the substantive elements of a Phase I ESA. The ESA indicated no past records of landfills, USTs, or historical spills or releases on the subject property. Other than the NRA site, there were no other listed properties of concern to the subject property found in the databases or examination of Sanborn maps, aerial photographs, and other information. The NRA site was shown to be on the RCRA SQG list, the LUST list, and the State Hazardous Waste Sites List. Because of the known nature of the chemicals and releases at the NRA site and the adjacent, downgradient location of the subject property, potential impacts to the subject property were identified as a Recognized Environmental Concern (REC).

Since 2005, both KESG as consultant to the prospective purchaser, and Whitestone Associates, Inc. (Whitestone) as consultant to the current owner, have cooperated on the completion of several phases of investigation of various environmental media at the subject property, including sampling and analyses along the sidewalk between the NRA property and the subject property. The results of these iterative investigation tasks support the conclusion that the subsurface media of the subject property are impacted by chemicals migrating from the NRA property and that these conditions represent a potential future exposure to occupants of the subject property. The methodologies and results of these investigation phases are included in this Remedial Investigation Report (RIR). To facilitate NYSDEC's review of this RIR, the findings in this report are

presented in a manner similar to a report that would be presented to NYSDEC by a responding party in a Brownfield or state Superfund program.

The purposes of providing this RIR to the New York State Department of Environmental Conservation (NYSDEC) at this time are:

1. To assist NYSDEC in understanding the offsite migration pathways and offsite impacts from the NRA Brownfield site; and

2. To document baseline conditions at the subject property at the time of property transaction.

Presently, it is the intent of the current owners and potential purchasers to complete this property transaction in January 2009. It is both parties stated intent, also, to cooperate further with NYSDEC with respect to the agency's oversight of the NRA case, such as in coordinating access to the subject property for additional investigation and remediation, as needed.

The findings from this RIR support the following opinions:

1. Groundwater and soil gas contaminated with volatile organic compounds (VOCs) that are migrating from the NRA site are present along the backside (9th Street side) of the building complex, which is immediately downgradient of the NRA site and upgradient of the subject property.

2. The soil gas and indoor air quality (IAQ) sampling inside the subject property basement area show the presence of VOC contaminants associated with the NRA site; however, the levels of these contaminants do not currently represent a need for mitigation, nor do they appear to result in a present unacceptable risk to occasional occupants of the premises.

3. The source of the VOC groundwater and soil gas contamination identified on the subject property is attributable to releases from the NRA site.

4. There is potential risk at the subject property for future exposure to VOCs associated with the VOC- impacted groundwater and soil gas migrating from the NRA site that is present beneath the subject property.

The primary chemicals of concern identified in this RIR are the VOCs that are present in the groundwater, soil gas, and indoor air. There is an apparent complete migration pathway from known releases at the NRA site into the subsurface media at that site to the subject property. Although there are no present exposure scenarios of concern identified from the site investigation work completed to date, the potential for future exposure is recognized. Two specific potential future exposure scenarios considered are:

1. Soil gas migration through the slab of the subject property into the basement areas either through construction activity or concrete deterioration. Presently, the soil gas concentrations of solvent and gasoline-related constituents beneath the slab and subsurface are consistent with the known soil and groundwater contamination present at the NRA site. The soil gas concentrations at the subject property were measured during the RI as being within generally accepted limits in the breathing zone of the building. However, any changes in the integrity of the existing cap (i.e., the foundation slab) or increased migration and accumulation under the building slab of the subject property could result in an unacceptable air quality conditions inside the basement.

2. Exposure to contaminated groundwater in flooded portions of the basement. Artesian encountered in the subbasement are believed to be the result of the shallow groundwater table upwelling. It is further considered that a preferential groundwater migration pathway may exist from the NRA site along utility lines beneath the subbasement.

KESG believes that it would benefit the NYSDEC to consider the probable pathways and exposure scenarios identified above as the subsequent investigation phases of the NRA site are planned. Both the current owner and prospective purchaser are interested in receiving NYSDEC's concurrence with the understanding of site conditions and potential future risks related to the NRA site, and may be contacted to further discuss the RIR findings.

1.0 INTRODUCTION

1.1 SITE LOCATION

Keystone E-Sciences Group, Inc. (KESG) was retained by the law office of Fran Mulnick Parker in 2005 to perform an environmental site evaluation of a building complex in Long Island City, New York. The building complex and property, referred to as the "subject property" in this Remedial Investigation Report (RIR), has been considered for purchase by the 8-33 40th Avenue Realty Corporation, a client of the law office. A Site location map is provided as Figure 1.

The subject property is located along Vernon Boulevard, between 38th and 40th Avenues. Adjacent to the subject property is a site known as the National Rubber and Adhesives (NRA) property. The NRA site is currently owned by Hamil Stratten Properties, LLC, an entity related to Coraster Holding Company, Inc. The NRA site has been involved in the Brownfield Redevelopment Program (New York State Voluntary Cleanup Program) since 2003 when Coraster entered the Voluntary Cleanup Program (VCP) and executed a Brownfield Cleanup Agreement (BCA). In the early stages of the environmental site evaluation of the subject property, KESG identified that migration of chemicals from the NRA site could potentially impact the subject site. The site plan provided as Figure 2 shows the relative location of the subject property to the adjacent NRA site.

1.2 PURPOSE OF THE REPORT

The 8-33 40th Avenue Realty Corporation has been discussing acquisition of the building and property for several years. The present owner of the subject property is News World Communications, Inc. The original purpose of the 2005 environmental site evaluation of the subject property was to identify recognized environmental conditions (RECs), and also to qualify the potential risks through limited site investigation sampling and analyses. As detailed in this RIR, the initial efforts of the evaluation indicated the potential impact of the subject property from the neighboring NRA site.

KESG and Whitestone have followed the limited progress of the NRA investigation over the past several years, during which time the NYSDEC directed AES to conduct offsite investigation in the direction of our subject property.

Pursuant to the NRA BCA, the NYSDEC had required offsite investigation (correspondence of 16 February 2007), which to date has not been performed. Since 2005, however, both KESG and Whitestone have conducted several phases of investigation of the environmental media on the subject property, including sampling and analyses in the sidewalk area between the NRA property and the subject property. The results of these iterative investigation tasks support the conclusion that the subsurface media of the subject property are impacted by chemicals migrating from the NRA property and that these conditions represent a potential future exposure to occupants of the subject property. The purposes of providing this RIR to the New York State Department of Environmental Conservation (NYSDEC) at this time are:

1. To assist NYSDEC in understanding the offsite migration pathways and offsite impacts from VOC soil and groundwater contamination from the NRA site; and

2. To document baseline conditions at the subject property at the time of property transaction.

Presently, it is the intent of the current owners and potential purchasers to complete this property transaction in January 2009. It is both parties stated intent, also, to cooperate further with NYSDEC with respect to the agency's oversight of the NRA case, such as in coordinating access to the subject property for additional investigation and remediation, as needed.

1.3 ORGANIZATION OF THE REPORT

To facilitate NYSDEC's review, the findings in this report are presented in a manner similar to a RIR that would be presented to NYSDEC by a responding party in a Brownfield or state Superfund program.

The remainder of Chapter 1.0 presents an overview of the physical and environmental setting of the NRA site and adjacent subject property. Chapter 1.0 also includes and a discussion of current operations at the subject property and an overview of the scope of work.

Collectively, Chapters 2.0 and 3.0 may be considered as a presentation of background characterization upon which the site investigation activities were based. Specifically, Chapter 2.0 presents an understanding of site conditions at the NRA site, as developed through a review of the Brownfield case files and

discussions with involved personnel. KESG conducted a Phase I Environmental Site Assessment (ESA) of the subject property, which provided relevant background information for this RIR; the relevant findings from the Phase I ESA are included in Chapter 3.0.

Chapter 4.0 presents the sampling locations sampling methodologies involved in this RIR. Over the course of the past few years, samples have been collected in cooperative efforts by both the owners' and purchasers' consultants. The environmental media sampled for this RIR include soil, surficial water, groundwater, indoor ambient air, and soil gas.

Chapter 5.0 presents the results of the environmental sampling and other site investigation tasks. Summary tables of the detected analytes from each medium are provided. In addition, the full laboratory analytical reports are submitted with this RIR on compact discs as an appendix to this RIR.

Chapter 6.0 presents further discussion of the findings. This chapter summarizes the understanding of the migration pathways from the NRA site to the subject property, the impacts on the subject property, and remediation at the subject property that might be required as the result of impact from the NRA site. A discussion of potential future exposure scenarios is also included in Chapter 6.0. Conclusions and recommendations are then provided in Chapter 7.0.

1.4 PHYSICAL AND ENVIRONMENTAL SETTING

The neighborhood surrounding the subject property and NRA site is mixed residential and commercial. Residential apartment buildings are located along portions of 9th Street and also south and west of the Moishe's Storage Center building of the subject property. An Extech facility is adjacent to the Stellar Printing building along Vernon Boulevard; KESG's observation was that metal fabricating and storage occurs at the Extech facility. Adjacent to the Sun East Press parking lot of the subject property is a facility that stores masonary building material.

Across Vernon Boulevard from the subject property is the Keyspan Power Plant. Across 9th Street from the subject property is the NRA site as shown on Figures 2 and 3. The NRA site is currently occupied by an automotive repair shop, a

marble fabrication shop, and a facsimile of a New York City firehouse, which is actually a screen set for the production of the television show "Rescue Me."

The subject property is at an approximate elevation of 12 feet above mean sea level (MSL). As the entire property is either under roof or paved, there are no wetlands or surface water bodies on the subject property. The East River is the closest water body, which is west-northwest and within 0.25 miles of the subject property. The NRA site is at a slightly higher surface elevation than the subject site. Topographically, the subject property lies immediately between the NRA site and the East River. Previous studies at the NRA site document a westerly groundwater flow toward the East River. Thus, the subject property is downgradient of both surface and groundwater flow from the NRA site.

The dominant soil type noted in the area is referred to as Urban Land, consistent with the observation of fill-type soil encountered during the site investigation core borings. The depth to bedrock is not specifically known. The depth to a bedrock aquifer was also not provided in the database information examined for this RIR.

There are five groundwater wells identified within 0.5 miles of the subject property from a USGS database, none of which are verified as being active supply wells. The depths of these wells, where indicated, are greater than 170 feet. There are no public water supply wells reported within a mile of the property. Two wells were indicated in the acquired database to be within 0.25 miles of the subject property; these are suspected to be groundwater monitoring wells on the NRA site to the east and the Keyspan power plant to the west-northwest. According to the March 2006 RIR for the NRA site, four shallow monitoring wells are located on the NRA property. The depth to groundwater in these wells is reported to be between 7 and 11 feet below ground surface (bgs), with a westerly flow direction toward the East River.

Confirmation of the property zoning was conducted by KESG in 2005. This was conducted to help the potential purchaser of the subject property evaluate whether the zoning restrictions would inhibit any alternate future use of the subject property, and also in recognition of New York City's specific zoning restrictions for certain environmental conditions/ areas. The property is located in Police Precinct 114, Borough of Queens. It is zoned M1-3, manufacturing, NYC zoning map 9B. It was not shown to be located within a designated Special Purpose District.

The City of New York has also enacted the City Environmental Quality Review (CEQR) process in concert with the NYSDEC. Through the CEQR process, agencies of the City of New York review proposed discretionary actions for the purpose of identifying the effects those actions may have on the environment. Areas under this process are designated with "E" in the zoning record. The subject property was not designated with an "E" in the zoning record.

Property "actions" that might trigger the CEQR process and result in an "E" designation are listed in 6 NYCRR Part 617, State Environmental Quality Review (SEQR), which is the basis for the CEQR. Property actions such as normal replacement, rehabilitation or reconstruction of a structure, and/or maintenance or repair involving no substantial changes in the existing facility are not subject to the CEQR. Typical actions that trigger the CEQR process include the addition of over 1000 parking spaces or the extraction of groundwater. There are no such known actions of these types or magnitude planned for the subject property.

1.5 CURRENT OPERATIONS AT THE SUBJECT PROPERTY

The subject property is presently occupied. The two major current tenants in the complex are Moishe's Storage Center and Stellar Printing (see Figure 2). The potential purchaser's current intent is to continue the leases and current operations.

The subject property is currently owned by the News World Communications, Inc. Moishe's Storage Center occupies the eight-story building. Storage rooms of various sizes occupy each floor, and these units are rented to the general public for the storage of dry goods. The adjacent and attached building is leased to Stellar Printing, Inc. (Stellar). Stellar operates large presses for newsprint and occupies some of the space for offices and other support functions for their business.

The operations, history, and waste management practices of the business entities occupying the subject property were investigated as part of KESG's Phase I ESA efforts. The results are discussed further in Chapter 3.0.

2.0 PREVIOUS INVESTIGATIONS- NATIONAL RUBBER AND ADHESIVES

The National Rubber Adhesives Company Site (NRA site) is a known contaminated property across 9th Street, immediately east-southeast of the subject property (Figures 2 and 3). The NRA site has been in the state's Brownfields Redevelopment Program since 2003, with a NYSDEC-assigned case number C-241028. As of completion of this RIR, it is our understanding that the site is not presently participating in the voluntary cleanup program but is currently seeking reinstatement.

The potential impact from the NRA site to the environmental media of the subject property was realized early in site evaluation. An understanding of the conducted and planned work at the NRA site was developed and used to help guide the scope of the site inspection work planned on the subject property. Appendix A to this RIR includes relevant excerpts from previous investigation reports prepared by others at the NRA site.

Extensive soil and groundwater contamination are present on the NRA site. KESG and Whitestone obtained and reviewed copies of the following documents for the NRA site prepared by American Environmental Solutions Inc. (AES):

- Remedial Investigation Work Plan (RIWP) dated February 2005, and the revisions to that Work Plan of 28 March 2005 provided in response to NYSDEC's comments to the original submittal;

- Revised Remedial Investigation Report (RIR) dated March 2006, including NYSDEC's 17 January 2006 comment letter to the initial RIR submittal;

- Revised Soil Vapor Sampling Work Plan dated September 2006, including NYSDEC's 16 February 2007 approval regarding the proposed soil gas sampling points along 9th Street; and,

- Soil Vapor Extraction Pilot Study, including the 04 May 2007 New York State Department of Health (NYSDOH) comment letter.

The NRA site consists of a 30,000 square foot one-story building, which had been the site of adhesives manufacturing for approximately 62 years. Previous operations on the property also included the manufacture of latex and other solvent based adhesive products. Hazardous materials including heptane, chloroform, toluene, gasoline, methyl ethyl ketone (MEK), and hexane were used and stored at the NRA property.

The RIWP and RIR documents prepared by AES and available for examination show that at least six underground storage tanks (USTs) and two aboveground storage tanks (ASTs) were present at the NRA site. These included:

- One 550 and/or 1500-gallon toluene UST
- One or two 550-gallon gasoline UST
- One or two 550-gallon ethyl acetate UST
- One1500-gallon MEK UST
- One to three 1500-gallon heptane UST
- One 1500-gallon hexane UST
- One 2000-gallon latex AST, and
- One 3000-gallon fuel oil AST

A subsurface investigation report (August 2001) indicated that two 1500-gallon heptane USTs existed under the Latex Production room, located at the north end of the NRA building. The 2001 report indicates that the above-mentioned acetate UST also was also used to store gasoline. The 2000-gallon latex AST was reported to have been located in the courtyard, and the 3000-gallon fuel oil AST is reported to have been located in the southern portion of the building.

In 1996, a previous owner conducted a voluntary investigation that revealed the presence of soil and groundwater contamination from a number of volatile organic compounds (VOCs), including benzene, toluene, xylene, tetrachlorethene (PCE) and chloroform. These findings were reported to the NYSDEC, which subsequently issued spill identification number 9602231 for the site.

The specific objectives of the proposed NRA site investigation were stated in their February 2005 Work Plan as follows:

- Obtain site-specific hydrogeological data, including soil characteristics, depth to groundwater, and groundwater flow direction;

- Identify possible off-site sources of subsurface contamination;

- Identify the source or sources of on-site contamination;

- Identify the nature and extent of contamination present within the site including the vertical and horizontal extent of soil and groundwater contamination and the types of contaminants present; and

- Further assess on site USTs as a potential source of contamination.

According to groundwater contour maps produced by the United States Geological Survey (USGS), groundwater within the general area of the NRA site and subject property flows in a westerly direction, towards the East River, approximately 0.25-mile from the National Adhesives property. The subject property lies betweenthe NRA site and the East River. Depth-to-groundwater reportedly ranges from 5 to 10 feet below grade. Groundwater velocities (horizontal) within the Upper Glacial aquifer reportedly range between 1 and 4 feet per day. Further, previous investigations performed by AES show that groundwater is approximately 7 to 11 feet below ground surface at the NRA site and flows in a westerly direction toward the subject property and the East River. These groundwater conditions strongly suggest that contaminated groundwater from the NRA site flows beneath the subject property at a depth close to the foundation slabs.

As indicated above, several previous investigations were conducted at the NRA site. However, none of these included off-property investigation that would resolve the question of potential impact to the subsurface beneath the subject property. Also, as indicated herein, NYSDEC had required the owners of the NRA site to conduct such off-property investigation.

A review of a March 1996 U.S. Hydrogeologic Inc. Investigation Report shows the following results from the NRA site:

- Groundwater collected from monitoring well MW-1 in the Latex Production Area contained benzene (280 ug/l); toluene (52,000 ug/l); and xylene (1,310 ug/l).

- Soil samples SB-4 (0-4') and SB-4 (4-8') were collected from the boring that was converted to monitoring well MW-1. Soil sample SB-4 (0-4') had a concentration of toluene at 9 ug/kg. Soil sample SB-4 (4-8') was

impacted with elevated concentrations of toluene (9,100 ug/kg); ethylbenzene (600 ug/kg); and xylenes (3,130 ug/kg).

- Groundwater collected from monitoring well MW-2 near the southern end of the NRA property contained toluene (280,000,000 ug/l); ethylbenzene (890,000 ug/l); and xylenes (3,170,000 ug/l). A layer of undissolved, floating product was present on the water table in MW-2.

- Soil samples SB-5 (4') and SB-5 (4-8') were collected from the boring that was converted to monitoring well MW-2. Soil sample SB-5 (4') contained PCE (6 ug/kg [estimated]) and toluene (54 ug/kg). Soil sample SB-S (4-8') contained PCE (14 ug/kg) and toluene (78 ug/kg).

- All of the chemical constituents detected in MW-1, MW-2, and SB-4 were present in products known to be stored on the premises in the underground tanks and/or used in the production of adhesives products. PCE was also reported to have been used and stored at the facility.

- Soil sample SB-1 (0-2') contained methylene chloride (220 ug/kg [estimated]); PCE (710 ug/kg); and toluene (16,000 ug/kg). Soil sample SB-3 (0-2') contained PCE (630 ug/kg [estimated]; toluene (82,000 ug/kg); ethylbenzene (2,900 ug/kg); and xylene (830 ug/kg [estimated]).

- Soil sample SB-7 (0-1') was collected from the uppermost 1 foot of soil from beneath the floor of the room where chloroform was formerly stored in drums. The sampling depth was limited by the presence of bricks and other obstacles at a depth of 1 foot. Sample SB-7 (0-1') contained chloroform (18 ug/kg) and toluene (5 ug/kg [estimated]).

- Soil sample SB-8 (6') was collected from beneath the floor of the area adjacent to the millroom. Sampling was limited by the presence of bricks and fill at a depth of approximately 6 feet. Sample SB-8 (6') contained chloroform (2 ug/kg [estimated]) and toluene (5 ug/kg [estimated]).

Three figures from the 2005 AES Work Plan are provided in Appendix A. As per the Work Plan and our discussions with NYSDEC representatives, no site investigation activities beyond the NRA property were planned for this phase of the study. The AES Work Plan to NYSDEC included the following proposed scope of work:

- *Monitoring Well Installation.* AES proposed to install up to seven shallow groundwater monitoring wells within accessible areas of the National Adhesives building and/or surrounding site property. Two monitoring wells were proposed along the eastern side of the building interior to serve as upgradient monitoring wells. A third monitoring well was planned immediately west, downgradient, of the current location of the five closed USTs. A fourth monitoring well was proposed immediately east of the five closed USTs. Three additional groundwater monitoring wells were to be installed within the southwestern portion of the site in the general area of existing monitoring well MW-2.

- *Soil Sampling.* During installation of the seven monitoring wells, AES planned to collect soil samples for field screening and laboratory analyses. Two soil samples per location were planned for collection, one above the local water table and one at the water table. No soil samples were planned below the water table. In the case of the two monitoring wells located adjacent to the closed USTs, MW-3 and MW-6, soil samples collected at the approximate depth equal to the bottom of the USTs, between seven and ten feet below grade, were to be selected for lab analysis.

- *Soil and Groundwater Sample Analysis.* AES proposed that the soil and groundwater sample analyses would be in accordance with NYSDEC requirements and would include: TCL Volatile Organics; TCL Semi-Volatile Organics; TCL Pesticides/PCBs; TAL Metals; hexane, heptane, MEK, and methyl tertiary butyl ether (MTBE). The addition of heptane, hexane, MEK and MTBE to the standard VOC analysis was proposed to fully assess the impact to soil as the result of any potential releases from the closed USTs.

- *Soil Gas Sampling.* Based on their discussions with New York State Department of Health (NYSDOH) personnel, AES proposed to collect soil gas samples for VOC analysis to address the concern of potential offsite migration of VOCs via the soil gas pathway. NYSDOH required that two samples be collected on the north and south sides of the building, close to adjacent residential properties. The proposed Work Plan indicated that a soil gas sample may be taken adjacent to the sidewalk located along the western side of the building. AES planned to collect six soil gas samples

at the perimeter of the site property. No samples were planned for any locations outside the building.

- *Phase II Environmental Assessment Report.* AES's Work Plan included completion of a Phase II Environmental Site Assessment Report for review by NYSDEC. The report was to provide a summary of AES's findings and would include a water table contour map, boring logs, well construction logs, and analytical summary tables. The report would also include a description of the nature and extent of contamination observed at the site based on field and laboratory data and would offer recommendations concerning the need for any interim remedial actions and/or any additional investigations. As stated in the Work Plan, AES would discuss with NYSDEC the need for additional soil and/or groundwater sampling to be conducted at the site and off-site, based on the results of the investigation.

AES provided revisions to the Work Plan 30 March 2005 in response to NYSDEC comments. These were also obtained and reviewed by KESG as part of the efforts in evaluating the potential impacts to the subject property. These revisions involved no substantive changes to the scope of intended work outlined above.

On 05 January 2006, KESG spoke with Brian Pendergast, President of AES, regarding the status of the work. According to Mr. Pendergast, the Work Plan was accepted as final and the field investigation has been completed. AES had submitted their Phase II Environmental Assessment Report to NYDEC and the draft document was under review. The findings of the investigation were provided in the revised March 2006 RIR prepared by AES. Whitestone had acquired a copy of the March 2006 RIR, and a summary of relevant findings are provided later in this chapter.

KESG and Whitestone had several discussions with the NYSDEC case managers over the past several years. Our discussions with Mr. Joseph Peck of NYSDEC focused on tracking the progress of the NRA site. While the concerns of potential impact specific to the subject property were not offered by KESG during these conversations, NYSDEC did relate that offsite impact was a significant concern from the NRA site, and that the VCP respondent was repeatedly requested to conduct offsite investigation.

Following KESG's initial investigation of the subject property in 2005, a subsequent round of investigation was conducted by Whitestone on behalf of the current owner, ESPB, Inc. In May 2006, Whitestone prepared a Limited Phase II Site Investigation report for ESPB, Inc., which was subsequently provided to NYSDEC. Whitestone's report included the results of groundwater samples collected on the subject property, which are discussed in more detail later in this RIR. These results showed elevated concentrations of volatile organic compounds (VOCs) common to the NRA site. As a result of NYSDEC's review of the Whitestone 2006 report, NYSDEC directed AES via letter of 09 August 2006 as follows: *"This report contains information regarding significant off site contamination attributed to the subject property (meaning the NR site. Please address the findings contained in [Whitestone's enclosed] report."*

In October and November 2005, AES conducted additional RI activities at the NRA site that included installation of four monitor wells and six vapor sampling points and associated soil, groundwater, and soil gas sampling. Soil and groundwater samples were analyzed for VOCs, SVOCs, Pesticides/PCBs, TAL metals, hexane, MEK, and MTBE. The findings were reported in the March 2006 RIR prepared by AES.

The March 2006 RIR summarized previous on-site soil, groundwater and soil gas sampling performed by AES and other consultants. Figures identifying the locations of these samples are included in Appendix A to this report and a summary of this data is presented below:

- Groundwater collected from monitor well MW-1 by Enviro-Comp in June 2001 showed the presence of benzene (120 ug/l), ethylbenzene (502 ug/l), and xylene (11/ug/l).

- Groundwater collected from monitor well MW-2 by Enviro-Comp in June 2001 showed the presence of benzene (207 ug/l); ethylbenzene (107 ug/l); toluene (38,410 ug/l); and xylene (647 ug/l).

- Groundwater collected from soil borings SB-8, SB-9, SB-10, and SB-11 installed by Enviro-Comp in 2001 in the northwestern portion of the site showed the presence of benzene (to 1.8 ug/l); toluene (to 91 ug/l); tetrachloroethene (to 153 ug/l); and trichlroethene (to 10 ug/l).

- Groundwater collected from MW-1 by Vertex Engineering in March 2003 showed the presence of acetone (101 ug/l); xylene (5.25 ug/l); naphthalene (59.7 ug/l); and trimethylbenzene (4.64 ug/l).

- Groundwater collected from MW-2 by Vertex Engineering in March 2003 showed the presence of acetone (134 ug/l); benzene (132 ug/l); xylene (5.25 ug/l); naphthalene (73.7 ug/l); and toluene (49,300 ug/l).

The March 2006 RIR also summarized previous off-site soil, groundwater and soil gas sampling performed by AES and other consultants. Off-site groundwater and soil samples BH-1, BH-2, BH-3, BH-6, BH-7, BH-9 and BH-10 were collected in the sidewalk on the eastern (BH-1, BH-2, BH-3, and BH-7) and western (BH-6 and BN-9) sides of 9th Street for VOC analysis. Figures identifying the locations of these samples are included in Appendix A of this report and a summary of this data is presented below:

- Groundwater collected from BH-1 (western side of 9th Street, northern end of NRA site) by AES in May/June 2003 showed the presence of benzene (77 ug/l); ethylbenzene (13 ug/l); toluene (3,328 ug/l); and xylene (17 ug/l). VOCs in the soil gas at the BH-1 location included benzene at 91 micrograms per cubic meter (ug/m^3); toluene (1,243 ug/m^3); and carbon disulfide (51 ug/m^3).

- Groundwater collected from BH-2 (western side of 9th Street, southern end of NRA site) by AES in May/June 2003 showed the presence of benzene (616 ug/l); ethylbenzene (73 ug/l); toluene (38,176 ug/l); xylene (132 ug/l); and 1,2,4-trimethylbenzene (56 ug/l). VOCs in the soil gas at the BH-2 location included benzene (93 ug/m^3); toluene (80,900 ug/m^3); and acetone (846 ug/m^3).

- Groundwater collected from BH-3 (western side of 9th Street, south of NRA site) by AES in May/June 2003 showed the presence of toluene (914 ug/l). VOCs in the soil gas at the BH-3 location included toluene (3,423 ug/m^3) and acetone (12 ug/m^3).

- Groundwater collected from BH-9 (eastern side of 9th Street, east-northeast end of NRA site) by AES in May/June 2003 showed the presenc of benzene (5.3 ug/l) and toluene (14 ug/l). VOCs in the soil gas at the BH-9 location included toluene (65 ug/m^3) and acetone (27 ug/m^3).

- Groundwater collected from BH-10 (western side of 9th Street, east-southeast of NRA site) by AES in May/June 2003 showed the presence of benzene (1,742 ug/l); toluene (302,000 ug/l); and MEK (1,180 ug/l). VOCs in the soil gas at the BH-10 location included toluene (357,000 ug/m^3) and acetone (3,336 ug/m^3).

A review of the March 2006 RIR shows the following soil, groundwater and soil gas results from October and November 2005 sampling at the NRA site:

- Groundwater collected from monitoring well MW-1 in the Latex Production Area contained benzene (32 ug/l); ethylbenzene (55 ug/l); toluene (1,500 ug/l); and xylene (55 ug/l).

- Groundwater collected from monitoring well GW-7 in the southwest portion of the site contained benzene (370 ug/l); ethylbenzene (350 ug/l); toluene (15,000 ug/l); and xylene (900 ug/l).

- Soil sample GW-7 (10-15') collected from the boring that was converted to monitoring well GW-7 had a concentration of toluene at 5.10 mg/kg).

- Groundwater collected from monitoring well GW-3 in the western portion of the site in the vicinity of the former ASTs and USTs contained benzene (260 ug/l); ethylbenzene (96 ug/l); toluene (20,000 ug/l); and xylene (200 ug/l).

- Soil sample GW-3 (13') collected from the boring that was converted to monitoring well MW-1 had a concentration of toluene at 19.0 mg/kg).

- Groundwater collected from monitoring well GW-1 in the northeastern portion of the site contained benzene (11 ug/l); ethylbenzene (7.7 ug/l); toluene (3,600 ug/l); xylene (19 ug/l); and tetrachloroethane (150 ug/l).

- Soil collected from the boring that was converted monitoring well GW-3 in the western portion of the site in the vicinity of the former ASTs and USTs contained toluene at 12 ug/kg.

- Soil gas samples SG-2, SG-3, SG-4 and SG-5 were collected along the western interior of the NRA site and soil gas samples SG-6 and SG-1 were collected in the northeastern and southern portions of the site. VOCs identified in these samples included benzene, chloromethane,

ethylbenzene, xylenes, tetrachoroethylene, 1,2,4-trimethylbenzene, and/or toluene.

Based on the findings of the RI activities summarized above, AES concluded that the nature of the contamination at the NRA site consists of soil and groundwater impacted by VOCs, primarily associated with releases from the USTs. AES also concluded that the most significant off-site migration pathway is groundwater, which flows southwest. No ambient indoor air quality data from the NRA site was available.

At the request of NYSDEC, AES also prepared a Soil Vapor Sampling Work Plan to address the additional onsite and offsite soil gas investigative requirements required pursuant to NYSDEC's review of the March 2006 RIR. The Revised September 2006 Soil Vapor Sampling Work Plan indicated that five soil gas samples would be collected along 9th Street and that three soil gas samples would be collected in the northern portion of the NRA building. Based on the most recent conversations with NYSDEC, this additional soil gas sampling has not been completed.

A soil vapor extraction (SVE) pilot study was conducted. The November 2006 Pilot Study Test Work Plan was referenced in the 04 May 2007 correspondence from NYSDOH. The pilot study involved four phases at MW-2, GW-3, MW-1 and GW-1 to evaluate the effectiveness of a SVE system as an interim remedial measure to address the vadose zone VOC contamination at the NRA Site. As per the 04 May 2007 correspondence from NYSDOH, the NYSDOH did not approve the pilot study as it was not in accordance with the November 2006 Work Plan.

Based on KESG's recent conversation with the current NYSDEC case manager in 2008, it is understood that the NRA site had left the Voluntary Cleanup Program (VCP), but that discussions were underway to reinstate the site into the VCP. To date, nonetheless, no offsite investigation in the vicinity of the subject property had been conducted under the NRA VCP, although the NYSDEC has requested such. This RIR, however, contains the results of investigation at the subject property and along the sidewalk between the subject property and the NRA, which show that offsite migration from the NRA site has occurred and impacts the subsurface media of the subject property.

3.0 PHASE I ENVIRONMENTAL SITE ASSESSMENT OF THE SUBJECT PROPERTY

3.1 OVERVIEW

The initial work performed by KESG for the subject property included the substantive elements of a Phase I ESA, conducted in general accordance with ASTM Standard E1527-00 for environmental assessments. The following tasks were conducted during the ESA phase of KESG's assignment:

- Examination of Federal and State environmental databases and historical records (including fire insurance maps, city directory, etc.);
- Examination of historical aerial photographs of the Site;
- Review of past and current property use and adjacent property occupancy;
- Inspection of the facilities, equipment, utility services, operations, and associated Site records;
- Observations of conditions that suggested potential environmental concerns;
- Review of chemical use and storage and spill/release history;
- Inquiry as to the results of prior inspections conducted at the Site;
- Review of waste handling, accumulation, storage, and disposal practices;
- Review and discussions of potential air emissions and wastewater discharges;
- Review of equipment that potentially contain polychlorinated biphenyls (PCBs);
- Observation of potential asbestos-containing materials (ACM);

- Observation and inquiry of storage tank records; and,

- Other discussions with site operations and management personnel regarding material handling and waste management practices.

3.2 ENVIRONMENTAL DATABASES

KESG contracted Environmental Data Resources, Inc. (EDR) to provide search records from Federal and State environmental databases. The database searches were commissioned to assist in the identification of conditions at the subject property and within a specified radial distance from the subject property, as per ASTM E1527-00 for a Phase I ESA. The relevant Federal and State database search findings are presented in Sections 3.2.1 and 3.2.2, respectively.

3.2.1 FEDERAL DATABASES

National Priority List (NPL):

- **Description:** The NPL is a United States Environmental Protection Agency (USEPA) listing of the nation's purported worst uncontrolled or abandoned hazardous waste sites. NPL Sites are targeted for possible long-term remedial action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980. In addition, the NPL Report includes information concerning cleanup agreements between the USEPA and potentially responsible parties, any liens filed against contaminated properties, as well as the past and current USEPA budget expenditures tracked within the Superfund Consolidated Accomplishments Plan (SCAP).

- **Finding**: According to the databases searched, the subject property was not on the NPL. No sites within a 1.0-mile radius of the Site were on the NPL.

Proposed National Priority List (NPL):

- **Description:** The database provided a separate search for those sites that USEPA has proposed for listing on the NPL based on preliminary assessment or initial site investigation efforts.

- **Finding:** According to the databases searched, the subject property was not a Proposed NPL site. No sites within a 1.0-mile radius of the Site were identified as proposed NPL sites.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS):

- **Description:** The CERCLIS List contains data on potentially hazardous waste sites that may have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites that are either proposed to be on, or are on, the NPL and sites that are in the screening and assessment phase for possible inclusion on the NPL.

- **Finding**: According to the databases searched, the subject property was not on the CERCLIS List. No sites within a 0.5-mile radius of the subject property were on the CERCLIS List.

No Further Remedial Action Planned Sites Report (NFRAP) Archived:

- **Description:** As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was remedited quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration. EPA has removed approximately 25,000 CERCLIS sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's

Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

- **Finding:** According to the databases searched, the subject property was not listed in the NFRAP Sites Report. No sites within a 0.25-mile radius of the subject property were listed in the NFRAP Sites Report.

Resource Conservation and Recovery Information System (RCRIS) - Non-Corrective Action Treatment, Storage and Disposal (TSD) Facilities Report:

- **Description:** The RCRIS-TSD Report contains information regarding those facilities that either treat, store or dispose of USEPA-regulated hazardous waste. The following information also is included in the RCRIS-TSD Report: information regarding the status of facilities tracked by the Resource Conservation and Recovery Act (RCRA) Administrative Action Tracking System (RAATS); inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; and a complete listing of USEPA-regulated hazardous wastes which are generated or stored on site.

- **Finding**: According to the databases searched, the subject property was not listed in the RCRIS-TSD Report. No sites within a 1.0-mile radius of the subject property were listed in the RCRIS-TSD Report.

Resource Conservation and Recovery Act (RCRA) - Corrective Action (CORRACTS) Report:

- **Description:** The CORRACTS Report contains information pertaining to hazardous waste treatment, storage and disposal facilities (RCRA TSDs) which have conducted or are currently conducting corrective actions as regulated by the Resource Conservation and Recovery Act. The following information also is included in the CORRACTS Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA-regulated hazardous wastes which are generated or stored on site.

- **Finding:** According to the databases searched, the subject property was not listed in the CORRACTS Report. There were two sites within a 1.0-mile radius of the subject property listed on the CORRACTS Report. Summary information on these sites is as follows:

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
Con Edison Ravenswood	38-54 Vernon Blvd.	0.0 – 0.125	RFI completed December 1994
Accurate Associates	5-36 46th Road	0.5-1.0	RFI not needed

Resource Conservation and Recovery Information System - Large Quantity Generators (RCRIS-LQG) Report:

- **Description:** The RCRIS-LQG Report contains information regarding facilities that either generate more than 1,000 kilograms (kg) of USEPA-regulated hazardous waste per month or meet other applicable requirements of RCRA. The following information also is included in the RCRIS-LQG Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA-regulated hazardous wastes which are generated or stored on site.

- **Finding:** According to the databases searched, the subject property was not listed in the RCRIS-LQG Report. There were three sites within a 0.25-mile radius of the subject property listed in the RCRIS-LQG Report. The sites were identified as the Ravenswood Generating Station, the Con Edison Ravenswood Generating Station, and Keyspan Ravenswood Services. From KESG's site inspection, these three all appear to be part of

the large generating plant located across Vernon Boulevard from the Moishe's Storage Center and Stellar Printing buildings. There are no violations reported for the Ravenswood or Keyspan facilities. There have been six instances of minor violations at the Con Edison facility, none related to potential environmental media impact.

Resource Conservation and Recovery Information System - Small Quantity Generators (RCRIS-SQG) Report:

- **Description:** The RCRIS-SQG Report contains information regarding facilities that either generate between 100 kg and 1,000 kg of USEPA-regulated hazardous waste per month or meet other applicable requirements of RCRA. The following information also is included in the RCRIS-SQG Report: information regarding the status of facilities tracked by the RAATS; inspections and evaluations conducted by Federal and State Agencies; all reported facility violations, the environmental statutes violated and any proposed and actual penalties; information pertaining to corrective actions undertaken by the facility or the USEPA; and a complete listing of USEPA-regulated hazardous wastes which are generated or stored on site.

- **Finding:** According to the databases searched, the subject property is listed in the RCRIS-SQG Report thrice, first as Nassau Screen Prints at 8-33 40th Avenue. This is the address for the current operations of Moishe's Storage Center, and no operations known as Nassau Screen Prints presently occupy this address. In any event, this RCRIS-SQG listing is not a concern because, as indicated below, there were no reported violations associated with Nassau Screen Prints. The second RCRIS-SQG listing for the subject property is that of Stellar Printing. The same address (38-38 9th) is listed below for the East Sun Building, whose operations are shown to have no reported violations. The database showed a total of 16 sites listed within a 0.25-mile radius of the Site (including the three with the subject site addresses). Summary information on the five closest SQG sites (i.e., those within a 0.125-mile radius) is presented on the table that follows. It is noted that the two other closest RCRIS-SQG sites indicated are from the NRA site address.

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
Nassau Screen Prints	8-33 40th Avenue	Subject Property	No reported violations
Stellar Printing	38-38 9th Street	Subject Property	One violation in 1992 related to "generator."
HAS-UWC East Sun Building	38-38 9th Street	Subject Property	No reported violations
National Backing Corp.	38-31 9th Street	<0.125 (NRA Site)	No reported violations
National Rubber & Backing Corp.	38-31 9th Street	<0.125 (NRA Site)	No violations reported.

Emergency Response Notification System (ERNS):

- **Description:** ERNS records and stores information on reported releases of oil and hazardous substances.

- **Finding**: According to the databases searched, the subject property was not listed in the ERNS.

3.2.2 STATE DATABASES

Underground Storage Tank (UST) Report:

- **Description:** Underground Storage Tanks (USTs) are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and

must be registered with the state department responsible for administering the UST program.

- **Finding:** According to the databases searched, the subject property was not listed in the UST Report. There were 11 UST sites within a 0.25-mile radius of the site. Summary information for the four closest UST sites (i.e., those within 0.125-mile radius) is presented on the table below. One of these UST Report sites within 0.125-mile is the NRA site.

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
Vernon Central Substation	40th Avenue & Vernon Blvd.	<0.125	Diesel tank closed 1998
Roxter Mfg.	10-11 40th Avenue	<0.125	One fuel oil UST, 3000 gal
Uzi Argaman	38-09 Vernon Blvd.	<0.125	Three unleaded gasoline, 2-4000 gal, 1-2500 gal, all closed in place, 1992
National Rubber & Backing	38-31 9th Street	<0.125	Two 550-gal gasoline, plus additional chemical bulk storage USTs

Chemical Bulk Storage UST (CBS UST):

- **Description:** The CBS UST Report contains an inventory of reported facilities that store regulated hazardous substances in underground storage tanks of any size.

- **Finding:** According to the databases searched, the subject site was not listed in the CBS UST Report. National Rubber & Backing Corporation, located <0.125 from the Site is listed as having two 1500-gallon USTs for the storage of toluene. (Note: this property is also known as the "National Adhesives" or NRA site.)

Major Oil Storage Facilities Database (MOSF UST):

- **Description:** The MOSF UST Report contains an inventory of onshore facilities or vessels with petroleum storage capacities of 400,000 gallons or greater.

- **Finding:** According to the databases searched, the subject site was not listed in the MOFS UST Report. The Ravenswood Generating Station, located <0.125 from the Site is listed for the storage of fuel oil.

Leaking Underground Storage Tank (LUST) or Tank Incident Report:

- **Description:** The LUST Report contains an inventory of reported leaking underground storage tank incidents.

- **Finding**: According to the databases searched, the subject property was not listed in the LUST Report. The NRA site was listed. There are 50 LUST sites identified within a 0.5-mile radius of the subject property, of which 30 are more than 0.25-miles from the subject property. Summary information on the remaining 20 LUST locations that are within 0.25-miles of the subject property is as follows:

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
Ravenswood Generating Station	38-54 Vernon Blvd.	<0.125	Tank overfill, 8 gallons

Ravenswood Generating Station	38-54 Vernon Blvd.	<0.125	Hole in tank – 5 gal gasoline. 1996, cleanup completed
Queensbridge Plant E	40009 10th Street	<0.125	1990 tank test failure.
Queensbridge Plant C	40009 10th Street	<0.125	1990 tank test failure.
Queensbridge Plant D	41004 10th Street	<0.125	1990 tank test failure.
3809 Vernon Blvd	3809 Vernon Blvd	<0.125	1994 tank test failure - #2 fuel oil
National Rubber & Backing	38-31 9th Street	<0.125	Toluene, Xylene and Ethylbenzene leak, 1996. Site under VCP
Rainey	38th Street & Vernon Blvd.	<0.125	#6 fuel oil NFA 2000
Queensbridge Plant C	40009 10th Street	<0.125	#2 fuel oil 1996
Ravenswood Generating Station	38-54 Vernon Blvd.	<0.125	Diesel 1997
Queensbridge Plant B	40001 10th Street	0.125 to 0.25	#4 Fuel Oil Closed 1995

Queensbridge Plant A	40013 10th Street	0.125 to 0.25	#4 Fuel Oil Closed 1995
8-14 37th Avenue	8-14 37th Avenue	0.125 to 0.25	Gasoline and #2 Fuel Oil Closed 1994
3707 9th Avenue	3707 9th Avenue	0.125 to 0.25	< 2 gallons on concrete
3821 12th Street	3821 12th Street	0.125 to 0.25	Tank overfill #2 fuel oil
41st Avenue & 12th Street	41st Avenue & 12th Street	0.125 to 0.25	Tank failure surface spill
10-12 37th Avenue	10-12 37th Avenue	0.125 to 0.25	Residential
38-21 12th Street/ Queens/CHE	38-21 12th Street	0.125 to 0.25	Tank test failure #2 fuel oil 1987
Queensbridge Plant B	41001 12th Street	0.125 to 0.25	#6 and #2 fuel oil 1995
Queensbridge Plant F	4105 Vernon Blvd.	0.125 to 0.25	#4 fuel oil 1995

Solid Waste Facility / Landfill List:

- **Description:** The Solid Waste Facility / Landfill List contains an inventory of solid waste disposal facilities or landfills in a particular state. These may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

- **Finding:** According to the databases searched, the subject property was not on the Solid Waste Facility List. There was one identified facility within a 0.5-mile radius of the Site, which is Patano Brothers, Inc., 38-36 10th Street. The site was listed as a regulated transfer station, currently inactive.

State Hazardous Waste Sites List:

- **Description:** State hazardous waste site records are the states' equivalent to CERCLIS. Priority sites planned for cleanup using state funds are identified along with sites where cleanup will be paid for by the potentially responsible parties.

- **Finding**: According to the databases searched, the subject property was not on the State Hazardous Waste Sites List. There were two identified State Hazardous Waste Sites within a 1.0-mile radius, one of which is the NRA site. A summary of the SHWSs is as follows:

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
National Rubber Adhesives, Inc.	38-31 9th Street	0 to 0.125	VCP / Brownfields cleanup in process. UST tank farm
Amtrak Sunnyside Yard	39-29 Honeywell Street	0.5 to 1.0	100 -acre maintenance and storage yard. PCBs, metals, SVOCs in soil; metals and SVOCs in groundwater

Voluntary Cleanup Programs (VCP):

- **Description:** Several states administer a VCP. New York State currently manages these projects under its Brownfields program.

- **Finding**: According to the databases searched, the subject property is not on the VCP list. There were 4 VCP locations identified within a 0.5-mile radius of the subject property, including the NRA site. Summary information for these 4 locations is as follows:

Facility	*Address*	*Distance (miles)*	*Issues/ Notes*
Ravenswood Generating Station	38-54 Vernon Blvd.	<0.125	ID V00368
National Rubber & Backing	38-31 9th Street	<0.125	ID V00173
National Rubber Adhesives	38-25/31 9th Street	<0.125	ID C241028
Vernon Blvd. Site	42-30 Vernon Blvd.	0.25- 0.5	ID V00437

Supplemental Information:

- **Description:** The EDR Database also lists supplemental information. Of particular interest to this project was the NY Spills database.

- **Finding:** Of note is NY Spills, which lists 127 surface spills within 0.125 miles of the Site. None of the listed surface spills were shown to have been at the subject property. Our evaluation showed that most, if not all, of the 127 listed surface spills were associated with the generating stations to the west and did not appear to have impacted the Site. All spills were noted as relatively minor and all were reportedly remediated.

3.3 HISTORICAL RECORDS REVIEW

3.3.1 SANBORN FIRE INSURANCE MAPS

Sanborn Fire Insurance Maps were reviewed as part of the Phase I ESA to assist in the identification of historic land use and to identify the location of potential features of environmental concern. Sanborn Maps available for the Site in the EDR Historic Map Collection for the years 1898, 1915, 1936, 1947, 1950, 1970, 1977, 1979, 1980, 1985, 1986, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995 and 1996 were acquired and reviewed by KESG .

Following is a summary of KESG's interpretation of features observed on the Sanborn Maps:

- **1898**: The area currently occupied by the subject property was residential properties. The entire area, aside from a commercial section to the northwest (identified as "Matheson & Company, mfgr's of colors"), was residential.

- **1915**: The subject property area remained residential, with the addition of the Franklin Candy Factory on the portion of the subject property now occupied by the four-story office space for Stellar Printing, and the addition of the New Amsterdam Gas Company (brick construction with a large aboveground oil tank) to the northwest, adjacent to Matheson, which was identified on this map as the Matheson Lead Company.

- **1936**: A 6 to 8 story building, noted as the "Loft, Inc. Candy Factory (built 1920 – 1921)" appeared on the western portion of the subject property, occupying the present Moishe's Storage Center building space. Only a small area of the block, to the northeast, was residential, with the balance of the area commercial or light industrial. Noted on the subject property were garages, lumber shed, Ice Cream Mfg., Polish Mfg., and coal burners. The Matheson & Company area was listed as Forest Trim Mills (lumber), and a "large coal pile" was indicated on the New Amsterdam Gas Company property.

- **1947:** The area was much the same as in 1936; the former garage area was then a paper store and the Polish Mfg. Building was then a mirror manufacturer. The New Amsterdam Gas Company was renamed Consolidated Edison. Public utilities appeared in the streets surrounding the subject property.

- **1950 - 1970:** Very similar to the 1947 map. The 1950 map continued to show the large oil tank on the Consolidated Edison property (present since 1915), along with fuel oil storage and a coal pile. The 1970 map showed a 750,000-gallon fuel oil tank and the previously referenced oil tank was gone. The former coal pile area was shown to be covered by the generating station buildings in 1970. The former lumber mill was shown as the Vernon Sub-station.

- **1977, 1979, 1980, 1985:** No substantial changes from the previous map (1970). Some buildings to the immediate northeast within the block were apparently vacant.

- **1986**: The Moishe's Storage building portion (eight-story building) was listed as the Queensboro Industrial Center, and the portion of the property currently occupied by Stellar Printing was unidentified with respect to occupants. The neighboring area appeared substantially the same as in 1985.

- **1988 through 1996:** Substantially the same as 1986.

There were no identified features on the subject property depicted on these Sanborn maps such as landfills, underground storage tanks, or chemical storage that would indicate a recognized environmental concern.

3.3.2 AERIAL PHOTOGRAPHS

Aerial photographs were examined as part of the Phase I ESA to further assist in the identification of site features and outdoor activities of potential environmental concern. Aerial photographs for the years 1966, 1975, 1984, and 1994 were obtained from EDR and reviewed by KESG. The following is a summary of KESG's interpretation of features observed on the aerial photographs:

- **1966 - Scale: 1-inch = 750 feet**: The entire block was not visible due to a cloud from the Consolidated Edison Site smokestacks. Residential properties were visible to the southwest and a park was evident along the East River to the southeast, adjacent to the Queensboro Bridge. The East River is located to the north of the Consolidated Edison Generating facility. Mixed commercial / light industrial / residential properties were visible to the northeast and east/southeast.

- **1975 - Scale: 1-inch = 750 feet**: The subject property was visible. However, at this scale, little could be discerned, aside from building outline detail. As in the 1966 photo, residential properties were visible to the southwest, as was the park along the East River to the southeast, adjacent to the Queensboro Bridge. Mixed commercial / light industrial / residential properties were visible to the northeast and east/southeast.

- **1984 - Scale: 1-inch = 750 feet**: Essentially the same as 1975. Possibly a new addition or roof coating along 9th Street, at the location of the four-story Stellar Printing building.

- **1994 - Scale: 1-inch = 833 feet**: Essentially the same as 1975 and 1984.

In summary, the aerial photograph review did not reveal any details or conditions that might be or might have been associated with adverse environmental impact at the subject property.

3.4 SITE INSPECTIONS AND PROPERTY DESCRIPTION

KESG conducted the initial on-site inspections of the subject property in December 2005 and January 2006, during which interviews with individuals associated with the current site operations and management were conducted. The inspections included observations of the property and site structures, and visual observations of adjacent properties as viewed from the subject property and surrounding roadways.

The key individuals interviewed during the site inspections were David Pyatt of East Sun Press Building (ESPB), Kevin Roletter of Stellar Printing, and Michael Baldino of Cushman & Wakefield. ESPS provides management and maintenance services to both the Stellar Printing and Moishe's Storage buildings, and Mr. Pyatt

has been the on-site engineer in charge of these services for more than 20 years. Mr. Roletter was identified as the plant supervisor for Stellar Printing, who has been at this facility since shortly after Stellar Printing moved into the building approximately 20 years ago. Mr. Baldino was a property manager for the current lessee of the Moishe's Storage building. All three individuals were helpful and knowledgeable about site operations and waste management issues during their tenure.

The vast majority of the entire subject property is under roof, as indicated on Figure 2. The exceptions are the parking lot, outside alleyway, and courtyard associated with the Stellar Printing building. These three areas are paved.

Relative to this RIR, the physical attributes of the property noted during the Phase I ESA and subsequent inspections of the ***Moishe's Storage Building*** portion of the subject property through 2008 include the following:

- **Mosihe's Building- Main Storage Unit Floors.** Floors 2 through 8 of the Moishe's Stotage Building are very similar in structure and function. Storage units, typically ranging from 3-feet by 5-feet units (15 square feet) to 1,000 square foot units are present on all floors and occupy the majority of usable space. The door to occupied storage units are locked with a renter's-supplied lock. Moishe's Storage clientele include commercial and private renters who reportedly store only dry goods in these units. KESG examined a standard contract for storage unit rentals provided by Moishe's Storage. The contract indicates (Item 6) that *"The storage space will be used for the storage of Occupant's personal property (which will at all times be owned by Occupant), and for no other purpose. Occupant will not store any (a) animals or food, (b) inflammable, combustible, explosive or other dangerous items or (c) items which have an objectionable odor or which may spoil or decay... Occupant will (A) keep the storage space locked with a heavy duty padlock and (B) comply with requirements of any governmental authority which apply."*

  The floors are typically well-maintained painted concrete. Brick floor, also painted and well maintained, were observed on the lower floors. There was a noted absence of floor drains on most floors. It is understood from a conversation with David Pyatt, site engineer with ESPB that the drains had been sealed to create a smooth floor when Moishe's Storage started their operations.

The first floor houses Moishe's Storage operation offices. Clientele enter the building via loading bays along Vernon Street and proceed to the operations office adjacent to the bays. Large overhead doors also provide access to the rear of the building. KESG observed typically light clientele traffic during the course of the site inspection and subsequent investigations, with renters storing or retrieving personal items or other dry goods.

- **Moishe's Building- Basement and Elevator Shafts.** A full basement underlies the 8-story building. It is mostly occupied with storage units, similar in layout to the floors above. A building maintenance room occupies a portion of the basement, which stores items such as scaffolding, rock salt, 5-gallon pails of asphalt, and lumber. No hazardous materials were observed to be stored in this room.

  One floor drain was observed in the basement, located in the maintenance room. A sealed trench was also evident in a portion of the floor in the northwest quadrant. The basement floors are dry, painted, and are maintained as well as the floors on the upper levels.

  The shafts to the three operating elevators were opened and observed during the inspection. The floors of the shafts were dry and there were no staining or other signs of environmental concern. The two decommissioned elevator shafts were not accessible during the inspection.

- **Subbasement and Trench Drain.** A subbasement is accessed from the basement of the Moishe's Storage building via a short stairway on the east side of the main basement. The subbasement actually underlies the adjacent two-story building rather than the footprint of the eight-story Moishe's Storage building.

  The walls of the subbasement are stone and brick. The room houses several large water treatment vessels that have not been used for several years. Sewer pipes enter the subbasement from beneath the basement floor of the eight-story building and then, via elbow piping, continue beneath the floor of the subbasement. The subbasement has historically flooded frequently. An open, approximate 10-inch diameter PVC pipe extends through the wall from beneath the adjacent basement into the subbasement.

The discharge end of this pipe is elevated above the floor and within a few feet of a manhole cover. There has been no more than a light trickle from this discharged pipe observed by KESG at any time during our site visits between 2005 and 2008; typically, this pipe has been dry even after recent heavy precipitation. Onsite discussions with Mr. Baldino and Mr. Pyatt indicated that the PVC pipe is connected to a trench drain that was installed around the eight-story building (see Figure 3). The drain system was indicated to run along three sides of the building (9th Street, 38th Street, and Vernon Avenue) for the purpose of intercepting stormwater that previously would seep into the basement area.

The trench drain is an open trench on the 9th Street side of the building, closest to the NRA property, accessible for inspection via a basement doorway to a crawl space beyond the building wall. The drain is concrete-covered, presumably with encased piping to route stormwater, from a location somewhere along 38th Street and all along Vernon Avenue.

Standing water was observed only at the beginning point of the trench drain (i.e., by the southeast corner of the Moishe's Storage building) in December 2005 and during some subsequent site visits thereafter by KESG. This is typically an area of still, ponded water in a deeper portion of the trench approximately five feet long. Intermittent heavy rains occurred during the KESG site work over the past few years, and the trench was inspected frequently during this period. It is noted that no flow in the trench was observed at any time, and no seeps into the open portions of the trench were observed. These observations suggest that the trench drain system is marginally functional, or that seepage into the system might only occurs following major storm events.

KESG's assessment is that the current perimeter trench drain system appears to have been installed to replace a former internal floor drain system. Remnants of the probable former floor drain system, running from 9th Street to Vernon Avenue, were observed. This is evidenced from long concrete patches in the floor and areas where metal grates were grouted over. It is considered possible that the original internal floor drain system experienced periodic flooding following major storms or snow melting, but that these temporary flooding events did not impact prior occupants' operations. The present operation (i.e., storage of dry goods in the basement storage units) would be negatively impacted by such

periodic flooding, and it is reasoned that the newer trench drain system might have been installed to route stormwater around the storage units and to eliminate the internal flooding problems.

Flooding of the subbasement area was observed during the initial site inspection in August 2005, and was attributed to a subfloor broken water line. The floor of the subbasement is uneven and ponded water was present again in December 2005, January 2006, and also during more recent inspections by KESG in 2008. There is an upwelling of water from beneath the slab, with slow flow and drainage to a floor drain near the center of the room. As discussed later in this RIR, KESG conducted a core boring through the slab of the subbasement at an elevated dry area, and artesian water conditions were encountered, indicating a substantial buildup of confined water immediately below the slab of the subbasement.

The Stellar Printing operations are conducted east of the Moishe's Storage Center building and consists of a complex of interconnected structures and an approximate 1000 square foot parking lot. The interconnected structures are one-story to four-story buildings. A basement underlies the approximate rear half of the complex, closer to 9th Street. Floors throughout the complex are concrete, with walls being a mixture of brick and mortar, cinder block, and concrete. The parking lot is asphalt. Relative to this RIR, the physical attributes of the property noted during the Phase I ESA and subsequent inspections of the ***Stellar Printing Building*** portion of the subject property include the following:

- Printing presses occupy the majority of the one- and two-story area on the east side of the complex. The four-story building along 9th Street is primarily office space and also is used for Stellar Printing's lithographic plate operations.

- Other operations on the ground floor include a smaller printing and paper storage area just east of the Moishe's Storage building (and above the subbasement) in an area of the complex referred to as the Maxi-Mailer operations. Also, a bailer/shredder room is located adjacent to the internal alleyway and main printing presses. A baghouse is associated with the shredder, but there are no apparent external discharges to the atmosphere from these operations.

- Three contiguous utility rooms are present as shown on Figure 3. These are located on the ground floor and are referred to as the Electrical Transformer Room, the New Switch Gear Room, and the Old Switch Gear Room. Power to the Moishe's Storage building is provided through these rooms, which are constructed of brick and cinder block walls with concrete floors. There are doors between the three rooms, with locked entranceways both on Vernon Boulevard and internal alleyway. The transformers are old and were considered to be of a type potentially using PCBs.

- The partial basement consists of several utility and storage rooms, and the offices for the ESPB on-site engineering personnel. Two boilers are located within the boiler room, and two 6,000-gallon fuel oil tanks are present in the adjacent room.

- An outside courtyard area is present above the fuel oil tank room, near the center of the subject property. This courtyard is accessed from the outside alleyway off 9th Street (see Figure 3). The stacks from the boiler are located in the courtyard. Solid waste trash dumpsters and drums of spent ink are also stored in this area.

3.4.2 UTILITY SERVICES

The subject property is serviced by public water and sanitary sewer. The city of Long Island City reportedly supplies these services. There was no evidence of previous water supply wells or septic/cesspool systems on the property.

3.4.3 UNDERGROUND STORAGE TANKS

Site personnel indicated that, to their knowledge, there are no USTs located on the subject property and there have never been any USTs on the subject property. KESG did not identify any equipment normally associated with USTs such as fill pipes, vent pipes, or dispensers. The subject site was not listed on the state UST database.

3.4.4 ABOVEGROUND STORAGE TANKS

Three aboveground storage tanks are located on the roof of the Moishe's Storage building. These are used for domestic and fire water.

Two 6,000-gallon fuel oil tanks are located in the basement of the Stellar Printing building. A NYSDEC Petroleum Bulk Storage Certificate was examined in the adjacent boiler room, indicating that the 5-year renewal expires 13 June 2009. The stated owner of the tank on the certificate is News World Communication Inc., and the operator is shown as ESPB. The certificate states "Aboveground tanks require monthly inspections and may need documented internal inspections as described in 6 NYCRR Part 613."

The fuel storage tank room was accessed via a small opening in the wall between the boiler room and tank room, approximately 3 feet off the floor level. The cylindrical tanks are apparently old, though the date of installation has not been confirmed. No visual evidence of leaks or spills was present. Fill pipes enter the tanks from the top, with fuel delivered through a standpipe external to the building.

3.4.5 RAW MATERIAL AND CHEMICAL USE AND STORAGE

At the Moishe's Storage building, there was no evidence of raw material or chemical use and storage of concern. Small quantities of rock salt and 5-gallon pails of asphalt were observed to be stored for general maintenance in the basement. There was no evidence of residual hazardous materials from prior operations observed during the site inspection.

The bulk of raw material storage at the Stellar Printing building consists of newsprint rolls and inks. Smaller volumes of oils, solvents, and other chemicals are used in support of the printing operations. An understanding of the chemical use and storage associated with the Stellar Printing operations was obtained from an interview with Kevin Roletter, plant supervisor and an examination of the Material Safety Data Sheets (MSDSs) on site, as discussed below.

The inks used are either petroleum-based (black inks) or soy-based (colored inks). The primary solvent used for part cleaning is the commercial product Press Ready

720, with the following indicated ratings as per the storage cans: Health = 1; Flammability = 2; Reactivity = 0. According to Mr. Roletter, these solvents and other chemicals are either used to completion or evaporation; there is no reported hazardous waste disposal or recycling of these chemicals.

Hydraulic oil is stored and used on site for the printing presses. KESG observed a long floor trench parallel to the major print press (approximately 150 feet) that contained oil and ink. Mr. Roletter indicated that these trenches are drained periodically and that the waste ink and the waste oil are collected in 55-gallon drums for disposal and/or recycling by Clean Earth Inc, a contractor.

The upper floor operations of Stellar Printing (in the four-story building) involve the production of prints, plates, and strip negatives. KESG observed the storage (55-gallon drums) of a plate wash solution, Nensco Subtractive Finisher Light. This solution is labeled as follows: Health = 0; Flammability = 0; Reactivity = 0. These upper floor operations also involve the use of silver solutions. According to Mr. Roletter, silver recovery is conducted through a double-stage filter process, resulting in a dried material that is recycled.

The MSDSs were examined by KESG onsite to supplement the understanding of chemicals used by Stellar Printing. The more notable chemicals were:

- Inks that are primarily supplied by US Ink, whose MSDSs for the various colors all indicate the product to be non-hazardous.

- The Press Ready 720 solution is stated to be a "blanket and roller wash," and contains naptha and 1,2,4-trimethylbenzene.

- Black Bear Grease is widely used in the print press operations; it is a petroleum hydrocarbon but not a hazardous material.

- A Rohm & Haas product, identified as MOR-AD(TM)M-119, is shown to contain 58 to 60% heptane. According to Mr. Roletter, this product is a printing industry glue that is used in small quantities; it is a "totally used or evaporated " product without discharge of residuals to wastewater.

- Copper Plating Solution is shown to contain ethylene glycol, isopropanol, and dichloromethane.

- Blanket Dry II is shown to contain methanol and PCE.

The above examples include those site chemicals with volatile organic constituents that were also analytes in the environmental sampling program subsequently conducted and reported in this RIR.

3.4.6 HAZARDOUS AND SOLID WASTES

The Moishe's Storage Center operations do not generate hazardous waste. A former tenant of the Moishe's Storage building, Nassau Screen Prints, was listed as a small quantity generator (SQG) in the RCRIS-SQG Report, but there were no reported incidents listed for their operations.

The RCRIS database shows Stellar Printing listed as a SQG. Mr. Roletter had no recollection of the reported 1992 violation shown in the database, but it is believed that this might have been associated with administrative or recordkeeping mistake (e.g., improper drum labeling) rather than a spill or release.

Solid waste is managed by a licensed disposal contractor. Mr. Roletter indicated that Atlas was the solid waste contractor for Stellar Printing for the buildings.

Waste ink, spent developer reactor solution, and used hydraulic oil generated by the Stellar Printing operations are stored in the courtyard area in 55-gallon drums. According to Mr. Roletter, these drums are periodically removed by a licensed contractor when a sufficient number of drums accumulate. There are no special wastes generated from the Moishe's Storage Center operations.

3.4.7 WASTEWATERS/ SEWERS

There are reportedly no discharge permits associated with operations on the subject property. Mr. Pyatt stated that either NYSDEC or NYCDEP inquired about wastewater discharges several years ago and that samples were taken from a discharge pipe from the Stellar Printing operations. The agency did not indicate any required follow-up, and the results of those samples were not available. The City of New York uses combined sewers.

Discharge of all wastewater is via the public sewer connected to the property. There is a sump in the basement of the Stellar Printing complex, but it was not

functional at the time of inspection. This sump was used to collect washwater from the basement. According to Mr. Pyatt, Stellar Printing's wastewater discharges are direct to the city sewer system.

3.4.8 STORMWATER

There are no stormwater permits or monitoring associated with operations at the subject property. Roof drains collect runoff and reportedly direct the flow to the city stormwater sewers.

As discussed previously, a trench drain around the Moishe's Storage building might be only marginally effective in collecting stormwater seeping into the building. When and if there is stormwater flow in the trench drain, it appears that it would discharge to the floor of the subbasement through a PVC discharge pipe, which is located within a few feet of a manhole to the city sewer system.

3.4.9 AIR EMISSIONS

There are no air permits or monitoring associated with the subject property. As a contract storage facility, there are no emission points within the Moishe's Storage building.

The stack in the courtyard of the Stellar Printing complex is reportedly associated only with the boiler. It is not a monitored air emission source.

3.4.10 POLYCHLORINATED BIPHENYLS

Transformers are present in the Stellar Printing building but were not specifically known to have contained PCBs. It is noted that as a follow-up to the Phase I ESA, KESG collected wipe samples in the immediate vicinity of these transformers and elsewhere throughout the buildings to test for the presence of PCBs. The results showed that there was only one trace detection of PCBs in 13 samples collected.

3.4.11 IONIZING RADIATION

The subject property is not known to use any ionizing sources of radiation. No radiation sources were observed by KESG during the site inspection. Site personnel were unaware of any radon gas testing having been conducted at the subject property.

The EPA Radon Zone designated for Queens, New York is Zone 3, indicating an indoor average radon level of less than, or equal to, 2 picocuries per liter (pCi/L). Of 81 sites tested in Queens County, 97% had radon concentrations below this target level in the living area, and 93% had concentrations below this level in basement areas. The average radon level in the basement samples from the county-wide study was 0.970 pCi/L. The USEPA established action level for radon gas is 4.0 pCi/L.

3.4.12 SPILLS AND RELEASES

There are no reported spills or releases at this site indicated from the database searches. There were no indications of spills or releases of hazardous materials observed during the site inspection.

There are large areas of ink-staining throughout the Stellar Printing building. For the purpose of this RIR, these are not considered spills or releases of environmental concern because of the documented non-hazardous nature of the ink products.

3.4.13 CERCLA LIABILITY POTENTIAL

The subject property is not listed on the NPL, the proposed NPL, or the CERCLIS. According to the current occupants, the subject property has never received notification from any government agency or third party of liability as a potential responsible party for any hazardous waste treatment, storage, or disposal Site. The current owner (seller) represented in the Agreement of Sale (page 50) that there has not been any correspondence from the environmental regulatory agencies regarding the adjacent NRA site.

From the information gathered by KESG for this assessment, and the discussions with aforementioned onsite personnel, it is believed that the property owners have not defended any environmental-related claims or litigation asserted by any governmental agency or third party, and no potential claims or litigation are known to presently exist.

3.4.14 OTHER CONSIDERATIONS

All conditions reported above in this chapter are considerations that are addressed within the scope of a Phase I ESA under ASTM protocol. Common "non-scope considerations" identified in a Phase I ESA for industrial and commercial buildings include asbestos-containing material (ACM) and lead-based paint (LBP). Subsequent to the Phase I ESA, samples of building materials were collected for ACM and LBP analyses. Some areas of potential future management concerns for ACM and LBP were identified. However, these were relatively minor and not of concern for this RIR, which focuses on the potential impact of environmental media from migration of chemicals from the NRA site.

3.5 SUMMARY OF RELEVANT PHASE I ESA FINDINGS

The Phase I ESA revealed evidence of Recognized Environmental Conditions (RECs) at this subject property, as defined by ASTM Practice E1527-00. The two 6,000-gallon heating fuel oil tanks present in the basement of the Stellar Printing building were identified as a REC. These heating fuel oil tanks, however, do not appear to have impacted the environmental media. Because of the lack of historical releases from these tanks and the compounds stored (heating fuel oil), this REC is not relevant to the assessment of potential impact from the NRA site.

The Phase I ESA indicated no past records of landfills, USTs, or historical spills or releases on the subject property. Other than the NRA site, there were no other listed properties of concern to the subject property found in the databases or examination of Sanborn maps, aerial photographs, and other information. The NRA site is referred to as the National Backing Corp and National Rubber & Backing Corp on some of the databases, and is shown to be on the RCRA SQG list, the LUST list, and the State Hazardous Waste Sites List. The NRA site is identified in the databases as having VCP ID V00173 and C241028. Because of the known nature of the chemicals and releases at the NRA site and the adjacent, downgradient location of the subject property, potential condition in the basement and subbasement area was identified as a REC.

4.0 ENVIRONMENTAL SAMPLING PROGRAMS

4.1 OVERVIEW

Through conductance of the Phase I ESA, the most significant risk to the subject property was identified as the potential impact from the adjacent NRA site. The Phase I ESA and initial site sampling performed in 2005 also showed the general absence of other potential onsite and offsite sources affecting the subject property. Thus, most of these subsequent investigation tasks focused on characterizing the potential risks, migration pathways, and impact from the NRA property.

The environmental sampling programs of the subject property were performed between 2005 and 2008. Figure 4 shows the location of the environmental media samples collected. The work included the following:

- Collection and analyses of soil samples from beneath the concrete floor and the asphalt parking lot areas of the subject property;
- Collection and analyses of water that has seeped into or otherwise infiltrated the basement and subbasement portions of the buildings;
- Collection and analyses of groundwater and soil gas samples from the sidewalk immediately upgradient from the subject property and immediately downgradient of the NRA site;
- Collection and analyses of background and indoor air quality (IAQ) samples on the subject property;
- Collection and analyses of groundwater samples from permanent monitoring wells installed in the basement of the subject property; and
- Collection and analyses of soil gas samples from beneath the foundation slab of the subject property.

4.2 SUBSURFACE SOIL AND SEDIMENT SAMPLING

A total of 12 soil samples were retained for laboratory analyses over the phases of investigation between 2005 and 2008. Nine subsurface soil samples and one sediment sample from the trench drain were collected in 2005. An additional two subsurface soil samples were collected from soil borings through the sidewalk along 9th Street in 2008.

Figure 4 shows the locations of nine core borings (B-1 through B-9) performed for this ESE. KESG first arranged for underground utility mark-outs around the property and adjusted borehole locations as necessary to avoid all underground utilities. KESG contracted OnSite Construction Enterprises, Inc. to perform the core borings. KESG provided an onsite licensed professional geologist to direct the drilling operations and to collect and retain samples for laboratory analyses.

Seven of the nine locations were through the concrete slab of the buildings. Two borings were through the asphalt parking lot. A mobile coring rig with a diamond bit was used to remove a 3-inch diameter core of the foundation. The typical foundation slab thickness encountered was 9 inches. KESG then advanced the borehole with a stainless-steel hand auger into the sub-slab soil for soil collection. At a few locations where the underlying soil was very gravelly and could not be penetrated with the hand-auger, the core barrel was advanced into the subsurface soils for sample collection.

Soil types encountered were highly variable, as indicated in the sample descriptions provided on Table 1. The soils are considered historic fill placed for grade before placement of the building foundations and parking lots. Soil samples were collected from depths of 1.0 to 1.5 feet below ground surface.

Six of the boreholes were made along the south side of the property (see Figure 4), in the basement and parking lot areas close to 9th Street. These boreholes were situated primarily to help assess potential impact from the NRA site, which is across 9th Street in an expected upgradient direction. Borehole B-4 was made in the subbasement room to specifically assess conditions in that area. Boreholes B-7 and B-8 were placed to provide a broader coverage of general subsurface conditions across the property.

A soil sample from each boring was packaged by the KESG on-site geologist for laboratory analyses of volatile organic compounds (VOCs). At a few locations, as

indicated on Table 1, the assigned laboratory analyses also included polyaromatic hydrocarbons (PAHs) and/or metals. Samples were placed in a cooler and maintained under chain of custody and submitted to Severn-Trent Laboratories, Inc. (currently known as TestAmerica) for analyses.

The boreholes were sealed to the surface before demobilization from the site with a cement grout. Because artesian conditions were encountered in the subbasement borehole (B-4), a hydraulic, quick-set cement was used to plug that location.

A sediment sample was also collected in 2005 from the trench drain at the location shown as SOIL-1 on Figure 4. SOIL-1 was collected as a grab sample following the collection of the AQ-2 water sample at the same location in the trench drain.

The two additional soil samples were collected during the installation of the soil gas and temporary well point borings performed in 2008. These samples were obtained from the boreholes SG-002 and SG-004, the locations of which are shown on Figure 4. The soil descriptions and analyses assigned to these samples are included on Table 1.

4.3 SURFICIAL WATER SAMPLES

Three surficial water samples were collected during the course of the site investigation. The locations of these samples are shown on Figure 4. A summary of the sample location descriptions and analyses assigned to these samples are provided on Table 2.

Sample AQ-1 was collected from standing water in the subbasement room in 2005. This location is periodically inundated from water seeping into the subbasement from beneath the slab. The water sample was observed to contain a significant amount of sediment, most of which has probably been suspended from debris on the subbasement floor. The floor of the subbasement is uneven, and the sample was collected in an area where standing water was approximately one-inch deep. Sampling was performed by collecting water in a dedicated syringe and transferring it to the appropriate laboratory-supplied glassware.

Sample AQ-2 was collected in the trench drain at the south end of the Moishe's Storage building in 2005. This was standing water in deepened portion of the trench. There was no active seeping into the trench observed at the time of sampling or any other time during the site investigation. Also, there was no flowing water elsewhere in the trench or other pockets of standing water. Accordingly, AQ-2 was the only water sample collected from the trench drain. The sample was collected with a dedicated syringe and transferred to the appropriate laboratory-supplied glassware.

Sample AQ-6 was collected in 2008 from a drip observed in the PVC discharge pipe in the subbasement. This is the discharge pipe that connects to the trench drain that is located along the perimeter of the Moishe's building. There had been no observed flow of any volume observed by KESG from this discharge pipe prior to the 2008 site work. This sample was collected by first collecting the drips into a laboratory-supplied glass jar placed at the end of the PVC pipe and then transferring the collected water into VOA vials for transport to the laboratory for analyses.

4.4 WELL INSTALLATION AND GROUNDWATER SAMPLING

A total of 10 groundwater samples were collected between 2005 and 2008. These included:

- One groundwater sample (B-4-WATER) collected by KESG from artesian flow at the borehole B-4 location in 2005;

- Three groundwater samples (GW-1, GW-2, and GW-3) collected by Whitestone from temporary well points through the slab of the subject property buildings in 2006;

- Four groundwater samples collected by KESG and Whitestone from the soil gas and temporary well point locations (SG-001 through SG-004) along the 9th Street sidewalk in 2008; and,

- Two groundwater samples collected by Whitestone from the permanent monitoring well locations MW-1 and MW-2 inside the buildings in 2008. The third monitoring well installed in 2008 (MW-3) did not produce water, as discussed below.

Sample B-4-WATER was obtained by KESG in the subbasement room, as shown on Figure 4. Borehole B-4 was drilled in a dry (slightly higher) area of the room away from ponded water in 2005. Upon removal of the concrete core, artesian conditions were encountered (i.e., water from beneath the slab rose up through the open corehole and spilled onto the floor). Conventional groundwater sampling techniques could not be utilized because of the encountered site conditions. However, a sample of the artesian flow was considered of value to generally characterize the chemistry of the water upwelling into the subbasement. The B-4-WATER sample was obtained after first vacuuming the corehole dry several times and then holding a decontaminated glass sampling jar in the corehole to collect rising water. The collected water was then transferred to the appropriate laboratory-supplied glassware.

Whitestone performed borings GW-1, GW-2, and GW-3, the results of which were first presented in their Limited Phase II Site Investigation report of May 2006 to ESPB, Inc. The boring logs for these locations are included in Appendix B of this RIR. The borings were advanced by a Geoprobe rig, with soil samples collected in 2-inch diameter Macrocore liners of 4-foot length. Groundwater samples were obtained by advancing a 1-inch diameter slotted PVC screen below the water table for water sample collection. The groundwater samples were collected utilizing a peristaltic pump and dedicated sampling equipment.

Groundwater samples were collected from the four temporary well points (TWPs) installed in February 2008 along the 9th Street sidewalk by ADT Drilling, Inc. The sidewalk work required same-day drilling and hole plugging and, thus, the sampling was not performed in a developed or equilibrated well. The wells were purged with a submersible pump placed within a 5-foot or 10-foot well screen, as indicated on the well logs in Appendix B. Observations during the field work overseen by KESG and Whitestone suggest that the water encountered in the TWPs was a combination of regional groundwater and infiltrated, perched water that accumulated at a shallow depth following recent heavy precipitation. Specifically, the observed core samples showed a relatively wetter soil layer present above a less permeable and less wet deeper soil in at least two of the borings. This could be representative of storm water runoff accumulating in the more permeable shallow subsurface soils. The TWP screen depths were adjusted in the field to intercept the wetter soil horizons. However, it is expected that the groundwater chemistry was diluted to some extent by the inclusion of the shallower water. A static groundwater level was not measurable in the temporary well points (TWPs) installed in the borings.

Three permanent monitoring wells were installed inside the buildings of the subject property in May 2008 by Hawk Drilling, Inc. Wells MW-1 and MW-2 were completed with 5-foot lengths of 2-inch diameter stainless steel screens set below the encountered water table. Schematic completion details of these well installations are provided in Appendix C. These two permanent wells were completed with flush-mounted protective caps, as indicated on the well logs. The wells were developed and then allowed to equilibrate for nine days before sampling. The field monitoring data from the date of groundwater sampling at MW-1 and MW-2 are included in Appendix D.

A third permanent well (MW-3) was intended to be constructed in the same manner as MW-1 and MW-2. The MW-3 well was to be installed in the same general location as the 2005 sampling location B-4-WATER in the subbasement, where artesian conditions were previously encountered. Appendix C shows the actual completion details for MW-3, which was modified in the field based on site conditions and equipment limitations. Specifically, flowing/caving gravel and sand were encountered below the slab, and the borehole could not be advanced to accommodate a 5-foot well screen. The shortened well screen that was installed was an attempt to isolate the flow zone directly beneath the slab. However, the artesian conditions appear to have interfered with the grout seal, resulting in a grouted screen. Consequently, this well did not yield water when the sampling occurred nine days after installation.

4.5 INDOOR AIR QUALITY SAMPLING

Four air sampling locations were established, the locations of which are shown on Figure 4. Three of the indoor air quality (IAQ) monitoring stations were set up at secured locations within the basement for collection of ambient air samples. Table 3 provides a summary of location descriptions and monitoring information.

Summa canisters were used for sample collection at each of these locations. An approximate 24-hour sample collection period was used, with actual start and stop times indicated on Table 3. The sampler in the sub-basement (IAQ-003) was placed behind a locked door. Two samplers (IAQ-001 and IAQ-002) were located in locked, unused storage units. One ambient air sample (BKGRD-1) was also collected from the exterior of the building for comparison purposes; the Summa canister at BKGRD-1 was placed inside a grated window enclosure along 9th Street approximately 9 feet above street level.

Samples were collected by KESG and maintained under chain of custody Each of the four air samples were analyzed for VOCs by EPA Method TO-15, plus analyses for hexane, heptane, MEK, and MTBE. The laboratory assignment included the requirement that the detection limits for all analytes would not exceed one microgram per cubic meter.

4.6 SIDEWALK BORINGS (GROUNDWATER AND SOIL GAS)

Figure 4 shows the locations of the four soil gas and temporary well point (TWP) sampling locations along 9th Street. The collection methodology for the groundwater samples from these TWPs were described above in Section 4.4. The TWPs were performed in February 2008.

All four TWPs were advanced in the sidewalk to a depth of 15 feet below ground surface (bgs) using a Geoprobe direct push sampler, as indicated on the logs provided in Appendix B. The soils encountered beneath the concrete sidewalk were typically a silty or sandy fill, with some brick fragments, gravel, and/or coal fines intermixed at varying depths.

Soil gas samples from the TWPs were collected over a nominal 30-minute sampling period with the use of Summa canisters. The logs in Appendix B provide scaled schematics of the probe placement within a sand pack, and details regarding the sampling times and canister pressures. The sampling duration was extended in the "tighter" formations where soil gas flow rates to the Summa canister was less. The sampling probes were removed from the borehole after collection of the soil gas samples and the boreholes were grouted to the surface.

Samples were collected by KESG and maintained under chain of custody Each of the sidewalk soil gas samples were analyzed for VOCs by EPA Method TO-15, plus analyses for hexane, heptane, MEK, and MTBE. The laboratory assignment included the requirement that the detection limits for all analytes would not exceed one microgram per cubic meter.

4.7 SUBSLAB SOIL GAS- SUBJECT PROPERTY BUILDINGS

Three soil gas probes were installed through the concrete floor of the buildings on 13 May 2008, and then sampled on 22 May 2008. The locations of these three gas probes through the basement floor are shown on Figure 4. It is noted that an

original intent was to place one of these probes in the subbasement area. However, due to the standing water over portions of the subbasement and the artesian flow encountered at the MW-3 location, a soil gas probe could not be installed in the subbasement.

The soil gas probes were installed as 3/8-inch diameter steel pipe segments of approximate 6-inch length placed in small coreholes through the concrete slab and into the underlying soil. The probes were sealed in place and capped upon placement. The sampling was conducted nine days after installation by placing tubing on the gas probe and allowing flow into a Summa canister. The nominal sampling duration for each location was 90 minutes. Table 4 provides a summary of the location descriptions and monitoring data during collection.

The Summa canister samples were maintained under chain of custody Each of the subslab soil gas samples were analyzed for VOCs by EPA Method TO-15, plus analyses for hexane, heptane, MEK, and MTBE. The laboratory assignment included the requirement that the detection limits for all analytes would not exceed one microgram per cubic meter.

5.0 SITE INVESTIGATION RESULTS

5.1 ANALYTICAL DATA VALIDATION AND USABILITY

The full laboratory analytical results packages from Severn Trent Laboratories, Inc. (STL) and TestAmerica exceed 6000 printed pages. These will be provided to NYSDEC upon request. Appendix E to this RIR include the laboratory-supplied summary tables of results. In addition, the various tables that are further introduced in this and the following chapter of this RIR provide summary results of valid detections.

These data have been evaluated against the relevant laboratory quality control (QC) to verify the qualitative and quantitative integrity of each reported detection. In instances of notable quantitative uncertainty, the data have been qualified as estimated (J) on the RIR tables. In instances of high qualitative uncertainty, the data have been qualified as invalid (B) and is considered an artifact of the analytical process. All results considered in this assessment are usable as reported and qualified on the RIR table. The discussions that follow in Chapters 5 and 6 of this report are based on these results as validated and qualified.

In some instances, and where noted in discussions provided in this RIR, the analytical results are considered more appropriate for general characterization of the environmental medium sampled rather than a quantitative evaluation. This qualification typically relates to the limitations of the sampling protocol and/or encountered site conditions. For example, the groundwater samples collected from the temporary well points in the sidewalk along 9th Street are likely to have been diluted from near-surface storm water that was present in the shallow soil horizon above the groundwater table. Also, groundwater collected from artesian flow in the subbasement area is more appropriately considered a grab sample rather than a representative sample from a permanent and developed well. Nonetheless, it is considered that the nature of the suite of chemicals found in such samples are good for characterization purposes and comparison to the chemistry known to be present at the NRA site.

5.2 SUBSURFACE SOIL

The results of the subsurface (including subslab and trench drain sediment) soil analyses are summarized on the Table 5. This table shows the detected compounds only and a comparison of the results to relevant standards.

Only trace concentrations of two VOCs were detected in the shallow subgrade soil: methylene chloride was indicated at five of the nine shallow boring locations, and tetrachloroethene (PCE) at one of these locations. These nine samples were all collected from a depth of less than 2 feet below grade, and the concentrations were all at low, estimated values that were substantially below the TAGM Recommended Soil Cleanup Objectives (RSCOs). The concentrations of detected methylene chloride from the two deeper samples along 9th Street were about twice the estimated concentrations in the shallower samples (see results for SG-002-SOIL at 5.0 feet bgs and SG-004-SOIL at 11.0 feet bgs on Table 5). These deeper samples are from intervals that are expected to be periodically saturated as the local water table fluctuates. Methylene chloride is a chemical of concern at the NRA site, and its presence in the deeper soil horizon may be the result of migration from the NRA site. In addition, hexane, which is also a chemical of concern at the NRA site was found in the deeper samples of SG-002-SOIL and SG-004-SOIL, but not detected in any of the shallower soil samples.

Both of the deeper sidewalk boring samples were collected where a petrochemical odor was noticed and where an elevated HNu response was present. However, the detected VOCs were relatively low compared to the New York State TAGM levels used as a reference. This suggests that the odors and HNu responses are associated with soil vapor migrating through the soil pores rather than a residual liquid product released into the soil at that location, which is further supported by the soil gas results. The relatively low concentrations of VOCs in the soil, together with the soil gas results, support the concept that the groundwater plume is deeper than the saturated soils encountered during the TWP installation and that conditions during the sampling resulted in diluted groundwater samples.

Four semivolatile organic compounds (SVOCs) were detected in the soil samples at concentrations that exceed the TAGM RSCOs. The samples at the B-5 and B-9 locations were collected beneath the concrete slab in the basement of the four-story Stellar Printing building and the asphalt parking lot, respectively. The SVOCs are benzo(a)anthracene, chrysene, benzo(a)pyrene, and dibenzo(a,h)anthracene. These are likely associated with the historical fill

ubiquitous to the general area, and/or the previous use of coal on and around the property. The detection of these SVOCs at the reported concentrations do not signal a need for additional investigation, as the property is essentially fully "capped" and there is no direct contact with these subgrade soils.

The metals analyses show that most are within the Eastern U.S. Background concentration range, with a minor exceedances at location B-4 for beryllium and location B-5 for copper. The NYSDEC RSCOs for these two metals are cited to consider site background conditions. Although a site-specific background study was beyond the scope of the work for the subject property, it is reasonable to believe that the detected concentrations of beryllium and copper are within the range of local historic fill.

The SOIL-1 sample included on Table 5 was sediment collected from the trench drain where standing water was present and the aqueous sample AQ-2 was collected (see Figure 4). There were no detected VOCs at the SOIL-1 location. The analysis for SVOCs shows five compounds above the NYSDEC RSCOs. The SVOCs include the same four that were detected at elevated concentrations in the two core hole locations (B-5 and B-9), suggesting that this sediment is derived from the same historical fill that underlies the buildings and general area. The zinc and silver concentrations at SOIL-1 are elevated, compared to the subgrade soil analytical results.

5.3 SURFICIAL WATER

Table 6 provides a summary of the detected compounds from the three surficial water samples collected. As these samples were collected as unfiltered samples of surficial ponding or a trickle from a discharge pipe, and not groundwater, comparisons of the results are not appropriate to TAGM, MCL, or other groundwater criteria. Following, however, is a discussion of the findings.

The AQ-1 sample from the subbasement contains several metals that are elevated relative to ponded water sample collected in the trench drain at AQ-2. It is probable that the elevated levels of arsenic, cadmium, chromium, lead, and zinc in AQ-1 is the result of accumulated dust and other debris in the subbasement being suspended in the flood water.

There was no active flow in this trench drain observed anytime during the investigation and it is uncertain if the ponded water at AQ-2 represents

stormwater runoff, seeped groundwater, or a combination of both. The AQ-2 sample collected from the trench drain showed only trace amounts of VOCs. It was only one of the three surficial water samples to show a detected level of MTBE (at 1.3 ug/L). The AQ-2 location is closest to the NRA site and MTBE is a gasoline additive. It has not been determined during the course of this investigation if the leaking underground gasoline tanks at the NRA site held product with the MTBE additive. However, MTBE is a contaminant that is reported to be present in the groundwater beneath the NRA site.

The chemistry of the dripped water collected from the discharge pipe in the subbasement in 2008 (i.e., sample AQ-6) is dissimilar to the AQ-2 results from the 2005 sampling. As indicated previously, there had not been observed flow through the trench drain at any time during KESG's site work between 2005 and 2008, and the trickle sampled at AQ-6 in 2008 was the only time that we observed any flow from that discharge pipe in that timeframe. Collectively, these results and observations suggest that the trench drain is not continually collecting and transporting contaminated groundwater from the NRA site.

5.4 GROUNDWATER

Table 7 provides a summary of the groundwater sample analytical results for VOCs. The groundwater samples on Table 7 include those collected from the two permanently installed wells (MW-1 and MW-2), the artesian flow sample collected from a borehole in the subbasement (B-4-Water) and the four samples obtained from the temporary well points in the sidewalk along 9th Street (SG-001-GW through SG-004-GW) and inside the subject property building (GW-1, GW-2, and GW-3). The results of the detected VOCs are compared to the USEPA Maximum Contaminant Levels (MCLs) and NYSDEC's Groundwater Quality Standards (GWQSs).

The MW-1 well, installed in the basement area of the subject property in 2008, close to 9th Street and downgradient of the NRA site, showed several elevated VOCs at concentrations exceeding NYSDEC GWQSs. The suite of compounds detected at this permanent well location includes gasoline constituents (e.g., benzene and ethylbenzene) and other solvents that are known to have been released at the NRA site (e.g., cyclohexane). Lower concentrations of these VOCs were detected at the more interior permanent monitoring well (MW-2) and also at the temporary well point SG-003-GW on 9th Street, approximately 25 feet north of MW-1. It is considered that the permanent well samples are more

representative of groundwater concentrations than the temporary wells. An apparent lack of correlation between the soil gas results (presented later) and also between the groundwater sample results from the sidewalk temporary wells and the indoor permanent wells was considered. There are a few reasons why the full suite of chemicals present in the soil gas were not detected in the water samples as well. First, it is probable that the aqueous samples taken from these temporary wells are not truly representative of the groundwater plume conditions and that the samples collected are "diluted." The sampling was conducted a few days after heavy rain and, as indicated above, storm water runoff appears to have collected in the shallower soil layers. The temporary well point cannot adequately isolate these flow zones before sample collection, and it is possible that more water from the shallow (uncontaminated) zone was collected than from the actual plume depth. Second, there is a combination of "sinkers" and "floaters" in the suite of contaminants from the NRA site. The floater compounds, which are lighter than water, include benzene and xylene, and these are the two compounds found above standard criteria in one of the groundwater samples. The heavier sinker compounds are the chlorinated solvents, such as PCE, and it is possible that these are deeper in the groundwater.

Very elevated concentrations of two gasoline constituents were also found in two temporary wells (GW-1 and GW-2) inside the building in 2006. Toluene was present at 144,000 ug/L and benzene was present at 144 and 974 ug/L in these two wells. These two wells are also close to the 9th Street sidewalk and downgradient of the NRA site.

The B-4 (Water) sample was collected from rising water in the core boring B-4 in the subbasement. This sample showed that MTBE was present at 18 ug/L and PCE was present at 5.8 ug/L; both exceed their respective NYSDEC GWQS. This sample was collected in 2005. Because of the temporal differences in the sampling events and differences in sampling protocol, it is not practical to develop a concentration gradient map from the data. However, collectively, the groundwater data shows a similarity to the suite of chemicals known to have been released at the NRA site, which would be expected to migrate in a pathway beneath the subject property.

5.5 INDOOR AIR QUALITY

Table 8 provides a summary of the indoor air quality (IAQ) results from the 24-hour sample collection event using Summa canisters. Table 8 also shows a comparison of the IAQ sample results to available standards provided pursuant to the October 2006 NYSDOH Guidance for Evaluating Vapor Intrusion in the State of New York. In general, the same suite of chemicals that were found at the sidewalk subsurface soil gas locations and subslab soil gas (discussed further in Section 5.6) were also detected in the ambient air inside the basement, albeit at substantially lower concentrations. It is noted that NYSDOH does not presently provide guidance for indoor VOCs other than methylene chloride, PCBs, tetrachlordibenzo-p-dioxin equivalents (TCPP), PCE and TCE. The guidance is based on site-specific scenarios. However, a comparison of the IAQ results to the EPA and NYS "screening" information shows that the following compounds, which are also found in the sidewalk soil gas samples, exceed the indoor range of at least one of these referenced standards: methylene chloride, PCE, 1,3,5-trimehtylbenzene and 1,2,4-trimethylbenzene. Methylene chloride is a common laboratory contaminant whose presence may be discounted from these results. The following compounds, found at higher concentrations in the sidewalk soil gas samples, are also present within the indoor ranges of the USEPA and NYSDOH Indoor Air Background Levels: n-hexane, benzene, toluene, ethylbenzene, and xylene.

The soil gas results were also reviewed against the NYSDOH criteria and vapor intrusion decision matrix (prepared specifically for TCE and PCE), which NYSDOH uses for guidance for all VOCs. Based on the concentrations detected during this RI and the decision matrix for PCE defined by NYSDOH's guidance, it is believed that a "No Further Action" recommendation would be appropriate for the subject property. However, they do provide decision matrices as guidance for other VOCs, which lead to a potential course of action. These cases are site-specific and the level of investigation or mitigation is related to the exposure scenarios assumed. For the subject property, we do not have residential occupancy or long periods of occupancy in the basement or sub-basement so it is likely that NYSDOH would consider a "monitor only" versus a "mitigate" course of action appropriate for the levels found inside the building.

5.6 SIDEWALK AND SUBSLAB SOIL GAS

Table 9 provides a summary of the sidewalk soil gas and subslab soil gas sample analytical results. The suite of chemicals found in the subslab soil gas and the sidewalk boring soil gas is similar to that found at lower concentrations in the ambient air within the basement and subbasement areas. The suite of chemicals includes the solvents and gasoline constituents that are known to have been released at the upgradient NRA site.

Several of the detected soil gas VOCs were found at relatively high concentrations. However, neither NYSDOH nor NYSDEC provide standards for soil gas. The soil gas sample results should not be considered representative of the air quality within the occupied space of the buildings. However, the presence of these subslab VOCs represent a potential for future exposure in scenarios such as the removal or degradation of the existing concrete slab.

6.0 DISCUSSION OF FINDINGS

6.1 MIGRATION PATHWAYS AND POTENTIAL EXPOSURE SCENARIOS

Tables 5 through 9 provide comparisons of the analytical results from the various sampled media to certain remedial standards and other referenced criteria. The results of the RIR show the presence of some SVOCs in the subsurface soils at concentrations above NYSDEC's RSCOs. From the suite of SVOCs detected, it is believed that these are related to historic fill used during construction and do not represent releases from the building occupants. The site, and the entire general area, is built upon land whose grade was raised with historic fill, with known coal piles and coal burning in the area. The SVOCs found are often associated with the incomplete combustion of coal. Exposure to the SVOCs in the soils is controlled by the presence of the building foundations or paved parking lot. Furthermore, the SVOCs in the soils do not appear to be impacting the other media investigated, such as groundwater and indoor air quality. In summary, with regard to the SVOCs, there is no complete migration pathway or potential exposure scenario of concern for further discussion in this RIR.

The primary chemicals of concern identified in this RIR are the VOCs that are present in the groundwater, soil gas, and indoor air. Based on the investigation activities completed to date, there appears to be a complete migration pathway from known releases at the NRA site into the subsurface media at that site to the subject property. There are no present exposure scenarios of concern identified from the site investigation work completed to date. However, the potential for future exposure is recognized. Two specific potential future exposure scenarios considered are as follows:

- Soil gas migration through the slab of the subject property into the basement area either through construction activity or concrete deterioration. Presently, the soil gas concentrations of solvents and gasoline constituents are relatively high beneath the slab and subsurface, but still within generally accepted limits in the breathing zone of the building. However, any changes in the integrity of the existing cap (i.e., the foundation slab) or increased migration and accumulation under the building slab could result in an unacceptable air quality conditions inside the basement.

- Exposure to contaminated groundwater in flooded portions of the basement. KESG considers that the artesian encountered in the subbasement is the result of the shallow groundwater table upwelling. It is further considered that a preferential groundwater migration pathway may exist from the NRA site along utility lines beneath the subbasement.

KESG believes that it would benefit the NYSDEC to consider the probable pathways and exposure scenarios identified above as the subsequent investigation phases of the NRA site are planned.

6.2 POTENTIAL REMEDIATION REQUIREMENTS

Plans for improvements to the subject property should be made with consideration of the impacted subsurface and the potential future remedial actions that may be instituted under NYSDEC's purview as the result of the offsite migration from the NRA site. Examples of such remedial requirements are discussed below.

The conditions in the subbasement represent both a building maintenance problem in terms of the flooding and an environmental problem in terms of the detected VOC contaminants and their suspected source. An engineering solution for the flooding conditions alone could be implemented with a relatively simple trench and sump system. The collected water could be pumped to the city sewer system using an existing sump. However, a sump collection system could draw more contaminated groundwater to the subbasement and result in the discharge of contaminated water to the city sewer system. Thus, it is recommended that the known existing conditions be shared with NYSDEC so that the groundwater remediation efforts can be coordinated with any site improvement plans.

The current air quality conditions will probably warrant a "monitor only" versus a "mitigate" course of action once the current results are shared with the NYSDOH and NYSDEC. However, a remediation system such as a vapor barrier and/or subslab venting system may be required in the future, particularly if site improvements involve disturbance of the existing cap.

From the data developed for this RIR, it is apparent that any future air remediation requirements would be related to migration from the NRA site and, thus, the information included in this report should also be considered by NYSDEC as the future plans for the adjacent NRA site are developed.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Since 2005, both KESG as consultant to the prospective purchaser, and Whitestone as consultant to the current owner, have cooperated on the completion of several phases of investigation of various environmental media at the subject property, including sampling and analyses along the sidewalk between the NRA property and the subject property. The findings from the investigation efforts are presented in this RIR.

The findings for this RIR support the following opinions:

- Groundwater and soil gas contaminated with volatile organic compounds (VOCs) that are migrating from the NRA site are present along the backside (9th Street side) of the building complex, which is immediately downgradient of the NRA site and upgradient of the subject property.

- The soil gas and indoor air quality (IAQ) sampling inside the subject property basement area show that VOC contaminants associated with the NRA site are present; however, the levels of these contaminants do not currently represent a need for mitigation, nor do they appear to result in a present unacceptable risk to occasional occupants of the premises.

- The source of the VOC groundwater and soil gas contamination identified on the subject property is attributable to releases from the NRA site.

- There is potential risk at the subject property for future exposure to VOCs associated with the VOC- impacted groundwater and soil gas migrating from the NRA site that is present beneath the subject property.

KESG and Whitestone believe that it would benefit the NYSDEC to consider the probable pathways and exposure scenarios identified in this RIR as the subsequent investigation phases of the NRA site are planned. Presently, it is the intent of the current owners and potential purchasers to complete the transaction of the subject property in January 2009. It is both parties stated intent to cooperate further with NYSDEC with respect to the agency's oversight of the NRA case, such as in coordinating access to the subject property for additional investigation and remediation, as needed. It is also the desire of the two parties to further discuss the findings with NYSDEC and obtain a common understanding of the site characterization and exposure risks presented in this RIR.

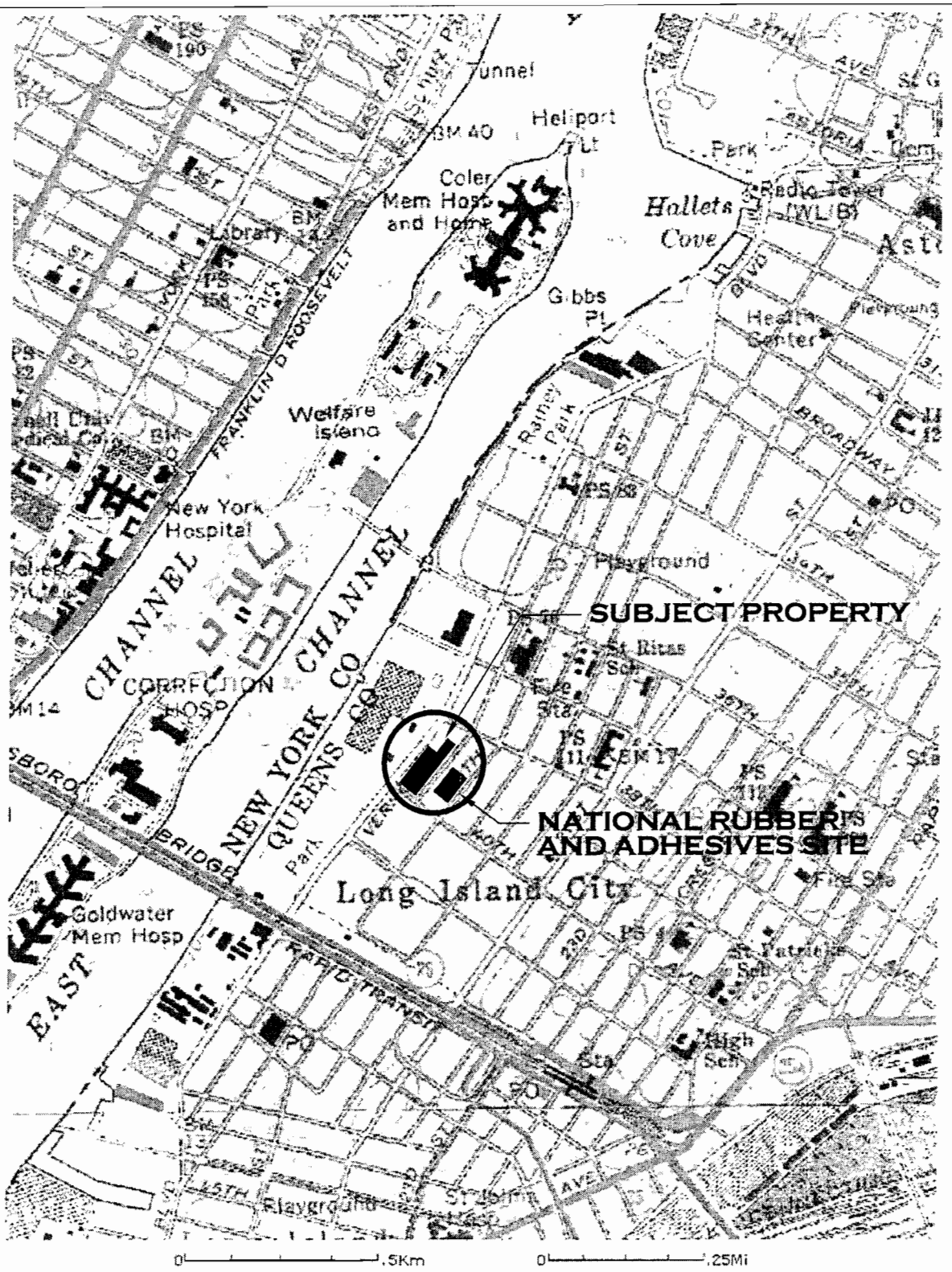

Image courtesy of the U.S. Geological Survey

KEYSTONE E-SCIENCES GROUP, INC. EXTON, PENNSYLVANIA	
FIGURE 1	PROJECT #05019
SITE LOCATION MAP	
FOR THE LAW OFFICES OF FRAN MULNICK PARKER	
REMEDIAL INVESTIGATION REPORT NOVEMBER 2008	