



June 8, 2021

Ms. Tina Newman
City of Knoxville Real Estate Department
400 Main Street
Knoxville, TN 37902

Subject: Pre-demolition Hazardous Materials Survey Report
1151 Sevier Avenue and 1209 Island Home Avenue, Knoxville, Tennessee
Sevier Avenue Streetscape Project

Dear Ms. Newman:

Enclosed please find the Hazardous Materials Survey Report for the former residential structures located at 1151 Sevier Avenue and 1209 Island Home Avenue, Knoxville, Tennessee. The work was performed for the City of Knoxville to support demolition of the structures and future roadway construction as part of the Sevier Avenue Streetscape Project. If you have comments, questions, or need additional copies, please feel free to contact George Hyfantis or me at (865) 689-1395.

Sincerely,

A handwritten signature in blue ink that reads "Terence Davis".

Terence L. Davis, P.G.
Sr. Environmental Specialist

Enclosure

c: Shawn Fitzpatrick, City of Knoxville
QE2 Project File: 501588

**HAZARDOUS MATERIALS SURVEY REPORT
FOR THE
TWO FORMER RESIDENTIAL STRUCTURES
1151 SEVIER AVENUE AND 1209 ISLAND HOME AVENUE
KNOXVILLE, TENNESSEE**



PRE-DEMOLITION HAZARDOUS MATERIALS SURVEY REPORT

for

**Two Former Residential Structures
1151 Sevier Avenue and 1209 Island Home Avenue, Knoxville, Tennessee
City of Knoxville Sevier Avenue Streetscape Project**

Prepared For:

**Ms. Tina Newman
City of Knoxville Real Estate Department
400 Main Street
Knoxville, TN 37902**

Prepared By:



**Quantum Environmental & Engineering Services, LLC
126 Dante Road
Knoxville, TN 37918**

QE2 Task No. 501588

June 7, 2021

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ACRONYMS

ACM	Asbestos-Containing Material
AHERA	Asbestos Hazard Emergency Response Act
APC	Air Pollution Control (Division of TDEC)
CAA	Clean Air Act
CFR	Code of Federal Regulations
DAQM	Knox County Division of Air Quality Management
DOT	United States Department of Transportation
DSHWM	State of Tennessee Division of Solid and Hazardous Waste Management
EPA	United States Environmental Protection Agency
HA	Homogeneous Area
LBP	Lead-Based Paint
ND	None Detected
NESHAP	National Emissions Standards for Hazardous Air Pollutants
OSHA	Occupational Safety and Health Administration
PLM	Polarized Light Microscopy
ppm	parts per million
QE2	Quantum Environmental & Engineering Services, LLC
RACM	Regulated Asbestos-Containing Material
RCRA	Resource Conservation and Recovery Act
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
TOSHA	Tennessee Occupational Safety and Health Administration
TSI	Thermal System Insulation
VFT	Vinyl Floor Tile

EXECUTIVE SUMMARY

Quantum Environmental & Engineering Services, LLC (QE2) conducted pre-demolition hazardous materials surveys to assess the presence of asbestos-containing materials (ACM) and other miscellaneous hazardous materials at two former residential structures at the intersection of Sevier Avenue and Island Home Avenue in Knoxville, Tennessee. The work was performed for the City of Knoxville in support of future demolition of the structures and roadway realignment as part of the Sevier Avenue Streetscapes project.

The principal objective of the hazardous materials investigation was to gain information on the nature and location of hazardous materials present within the two houses to support future demolition. The scope of work for the survey included inspecting for potentially hazardous materials; categorizing, sampling, and analyzing potential ACMs; and preparing this Hazardous Materials Survey Report to document the findings.

The former residence at 1151 Sevier Avenue is built on a sloping lot and includes two interior levels and a crawlspace-basement. The main level at grade in the front includes a living room, kitchen, pantry, bathroom, and bedroom. The upstairs includes a bathroom, hallway, and two bedrooms. The basement is only accessible from the exterior back side of the house, and it is used mainly for storage. The former residence at 1209 Island Home Avenue is also built on a sloping lot and includes two interior levels. The main level includes a large combination bedroom-living room, kitchen, and bathroom. The lower level includes former laundry and storage spaces. Specific types and locations of ACM are provided in the report.

The presence of Category I non-friable ACM was confirmed at both houses during the survey. Category II non-friable ACM (Transite panels) were confirmed at 1209 Island Home Avenue. Non-friable materials are not considered to be regulated ACM (RACM) unless they have become friable or are expected to become friable through being subjected to sanding, grinding, cutting, or abrading during demolition, renovation, or maintenance activities. Future structural demolition or removal of these materials would likely render them friable and categorize them as RACM.

The State of Tennessee, Department of Environment and Conservation (TDEC), Division of Air Pollution Control (APC), obtained authorization from the U.S. Environmental Protection Agency (EPA) to regulate activities involving asbestos or ACM within most of Tennessee. For sites in Knox County, Tennessee, the rules are enforced by the Knox County Division of Air Quality Management (DAQM). The DAQM must be notified, and a permit obtained before any renovation, removal, or demolition activities occur that disturb more than 260 linear feet, 160

square feet, or 35 cubic feet of RACM. These threshold amounts are exceeded at the two structures. A completed Notification must be postmarked, or hand delivered to the DAQM at least ten (10) working days before work begins. An accredited and Tennessee-licensed asbestos abatement contractor must perform the ACM removal. Other policies of the City of Knoxville may apply and project scopes of work should be reviewed prior to work that may impact the ACM.

Detailed visual assessments by QE2 identified the presence of other potentially hazardous materials which must be properly managed during handling and disposal, including mercury-containing fluorescent light bulbs, a refrigerator with ozone-depleting substances, appliances, and various miscellaneous cleaning compounds, paints, oils, lubricants, etc.

Lead-based paint (LBP) was not assessed during the surveys, since TDEC does not require the abatement of LBP prior to demolition work that does not involve sanding, scraping, or other activities which create lead dust. If future renovation work requires sanding or scraping of painted surfaces, then specific LBP testing is recommended for those surfaces prior to initiation of the work.

All hazardous materials must be properly handled and disposed prior to activities which may damage the items. QE2 has provided locations for confirmed ACMs in this report. Locations are based on visual inspections and sampling; however, demolition may reveal materials other than those identified in this report, e.g., inside wall cavities, above solid ceilings, or in mechanical chases. If additional suspect ACMs are discovered, they should be assumed to be ACM until additional sampling can be conducted.

1.0 INTRODUCTION

Quantum Environmental & Engineering Services, LLC (QE2) conducted pre-demolition hazardous materials surveys to assess the presence of asbestos-containing materials (ACM) and other miscellaneous hazardous materials at two former residential structures at the intersection of Sevier Avenue and Island Home Avenue in Knoxville, Tennessee. The work was performed for the City of Knoxville in support of future demolition of the structures and roadway realignment as part of the Sevier Avenue Streetscapes project. The field work was performed during May 2021.

1.1 Objectives and Scope

The City of Knoxville is planning to realign the intersection of Sevier Avenue and Island Home Avenue and construct a roundabout in south Knoxville. The two structures at 1151 Sevier Avenue and 1209 Island Home Avenue will be demolished for the project. The principal objective of QE2's work was to assess current site conditions to support plans for the safe performance of any future work. Project administrators, owners, contractors, designers, and workers may use the information in this report to help ensure the handling and disposal of hazardous or special wastes in compliance with applicable local, State, and Federal regulations and policies.

The hazardous and regulated materials assessed included ACMs and other miscellaneous hazardous materials which may be disturbed during the demolition. The survey included inspecting the interior and exterior of two structures for potentially hazardous materials; categorizing, sampling, and analyzing potential ACMs; and preparing this Hazardous Materials Survey Report to document the findings. Lead-based paint (LBP) was not assessed during the surveys, since the Tennessee Department of Environment and Conservation (TDEC) does not require the abatement of LBP prior to demolition work that does not involve sanding, scraping, or other activities which create lead dust. If future work requires any sanding or scraping of painted surfaces, then LBP testing is recommended for those specific surfaces prior to initiation of the work. Results are provided in Section 2, and overall conclusions and recommendations are provided in Section 3.

The site is located at the intersection of Sevier Avenue, Island Home Avenue, and Foggy Bottom Street in south Knoxville. The homes were originally constructed in approximately 1925 to 1930. The location of the structures is noted on Figure 1. Building descriptions and basic construction details are provided in Section 2. Appendix 1 includes photographs.

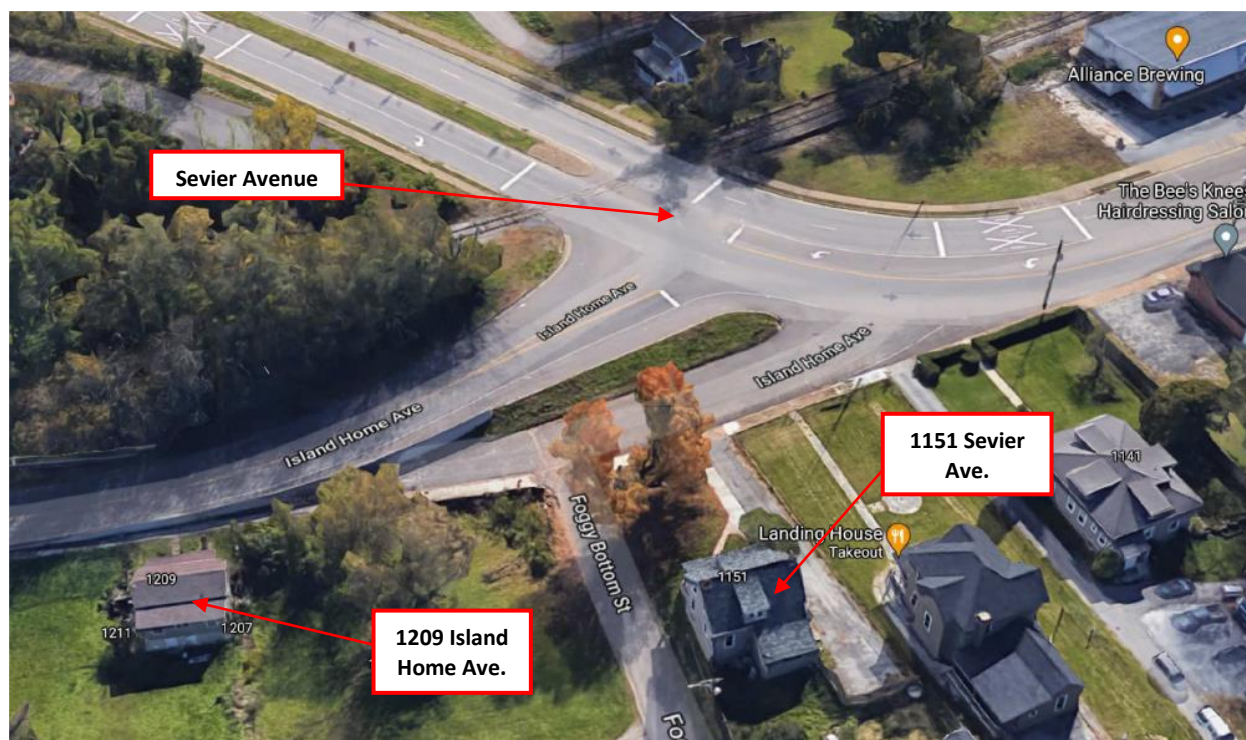


Figure 1. 1209 Island Home Avenue and 1151 Sevier Avenue Structures

1.2 Regulatory Framework

Asbestos-Containing Materials

The United States Environmental Protection Agency (EPA) was delegated the responsibility to promulgate and enforce emissions standards for hazardous air pollutants under the Clean Air Act of 1990. The National Emissions Standards for Hazardous Air Pollutants (NESHAP), including regulations for asbestos (40 Code of Federal Regulations (CFR) 61.140), were established in 1973. These regulations were primarily directed at asbestos industries, but they also banned spray-applied ACM in new buildings, and established procedures for handling ACM during demolition activities. The regulations were revised in 1975 and 1978 to cover building renovations and maintenance, the use of asbestos containing insulation in new buildings, and asbestos emissions from ACM waste disposal.

The State of Tennessee, Department of Environment and Conservation (TDEC), Division of Air Pollution Control (APC) obtained authorization from the EPA to regulate activities involving asbestos and ACM within most of Tennessee. The APC developed the Tennessee Asbestos Rules (TDEC Rules: Chapter 1200-3-11-.02), which are like the federal NESHAP regulations. For sites in Knox County, the rules are enforced by the Knox County Division of Air Quality Management (DAQM).

In enforcing the NESHAP regulations, the Knox County DAQM requires that each area of a building be inspected before renovation, removal, or demolition activities occur to reveal the presence of any regulated asbestos-containing materials (RACMs). RACM is defined as:

- friable asbestos materials such as thermal system insulation (TSI), and surfacing materials such as spray-applied or troweled on ceiling and wall coatings;
- Category I non-friable ACM that have become or are likely to become friable;
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition, repair, maintenance, or renovation operations regulated by Subpart M (National Emission Standard for Asbestos).

The EPA defines friable ACM as materials containing more than one percent (1%) asbestos as determined using polarized light microscopy (PLM) according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Category I non-friable ACM are asbestos-containing packing, gaskets, resilient floor coverings such as vinyl floor tile (VFT) and vinyl sheet flooring, or asphalt roofing products which contain more than one percent (1%) asbestos as determined using PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Category II non-friable ACM are any materials, excluding Category I non-friable ACM, containing more than one percent (1%) asbestos as determined using PLM that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. In addition to the identification of all ACMs in a facility, the NESHAP standard requires that the facility owner or operator of a demolition or renovation activity remove all RACMs before the materials are disturbed.

The DAQM must be notified and a permit obtained before any renovation, removal, or demolition activities that disturb more than 260 linear feet, 160 square feet, or 35 cubic feet of RACM. The DAQM must also be notified for all demolition projects regardless of the presence or absence of ACM. Notification is also required for removal, renovation, and/or demolition activities conducted at a facility if the amount of ACM disturbed in a calendar year during small scale work will exceed the threshold amounts (260/160/35). A completed Notification must be post-marked or hand-delivered to the DAQM at least ten (10) working days before removal work takes place.

A Tennessee-licensed asbestos abatement contractor (including Tennessee-licensed supervisors, workers, and project monitors) is required to perform activities involving RACM in Tennessee.

The notification requirements and procedures for emission control are applicable based on the circumstances of the activity and the amount of asbestos present. Individuals engaged in activities involving asbestos or ACM must also comply with applicable regulations under the United States Department of Transportation (DOT) and Tennessee Department of Transportation (TDOT) for transportation of asbestos waste, OSHA and the Tennessee OSHA (TOSHA) for occupational exposure, and the TDEC Division of Solid and Hazardous Waste Management (DSHWM) for disposal of ACMs.

Mercury-Containing Equipment

Potential sources of mercury should be eliminated before building demolition, renovation, or disposal activities that may damage the equipment. Mercury-containing wastes including fluorescent lamps and bulbs, exterior lighting, thermostats, thermometers, appliances with thermostats, etc. generated by households and commercial and industrial facilities are in most cases considered hazardous waste and must be managed properly. Mercury-containing wastes are regulated by TDEC under Standards for Universal Waste Management (Per TDEC Rule 1200-1-11-.12 and equivalent Federal regulations). Any mercury-containing equipment and items should be handled as hazardous waste and are subject to the EPA Land Disposal Restriction Regulations. Mercury-containing equipment should be recycled, and the mercury retorted. Transportation, waste manifesting/profiling, and receipt certification should be coordinated with the recycling firm. Final documentation of disposal certification should be maintained by the Owner for their records.

PCB-Containing Equipment

PCB-containing products were used between 1926 and 1977 in a wide range of electrical equipment. Based on the dates of construction and subsequent renovations, PCB-containing equipment may have been used in the original installations. The most likely sources of PCBs in and around the building are capacitors, old electrical switches, and fluorescent light ballasts.

Fluorescent light ballasts and transformers manufactured between July 1, 1979 and July 1, 1998 at the time of manufacture were required to be marked by the manufacturer with the statement "No PCBs" on the label. All ballasts and capacitors should be assessed for PCB labels before disposal or demolition. Unless the "No PCBs" labels are observed, they should be considered PCB-containing and removed, recycled, or disposed as PCB bulk product waste. During the hazardous materials survey, equipment was not inspected for "No PCBs" labeling. Ballasts and capacitors with the "No PCBs" label are not regulated as hazardous materials. Suspect equipment without "No PCBs" labeling, or missing or illegible labels, should not be disturbed or broken apart

since this could result in a release of PCBs, and pose hazards to worker health and safety and the environment.

Disposal of PCB-containing electrical equipment such as light ballasts is dictated by State and Federal regulations. The suspect components should be removed, containerized (e.g., in closed steel drums), and transported off-site for recycling and/or proper disposal. Oil-cooled transformers that are maintained, removed, or disposed must also be assessed for PCBs (if not labeled with “No PCB’s” tags), and managed in compliance with PCB regulations.

Ozone-depleting Substances

ODSs may be present within the cooling systems of refrigerators, water fountains, vending machines, food coolers, air conditioners, coolant service tanks, ice-making equipment, etc. Under regulations defined in 40 CFR Part 82 (under Section 608 of the Clean Air Act), venting of ozone-depleting refrigerants is prohibited during servicing, repair, and disposal of air-conditioning or refrigeration equipment. Class I substances include chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform, and Class II substances include hydro-chlorofluorocarbons (HCFCs). The equipment affected by the Rule includes disposal of most air-conditioning and refrigeration equipment. The regulations state that the final link in the disposal chain is responsible for assuring that refrigerant has been removed from equipment, although refrigerant can be removed before final disposal. The final processor may require that refrigerant be removed before equipment is accepted.

Other Hazardous Materials

Cleaning compounds, paints, oils and lubricants, pressurized canisters, appliances, drums, oil-bearing equipment, etc., require special handling for maintenance and disposal. Methods should be utilized to ensure that no damage occurs to the equipment, containers, or contents. Any transportation, waste manifesting and profiling, and disposal certification should be coordinated with a recycling firm or disposal location. Final documentation of disposal should be maintained by the Owner for their records.

LBP was not assessed during the surveys, since TDEC does not require the abatement of LBP prior to demolition work that does not involve sanding, scraping, or other activities which create lead dust. If future work requires sanding or scraping of painted surfaces, then LBP testing is recommended for those specific surfaces prior to initiation of the work.

1.3 General Survey Methodology

The hazardous materials survey was conducted in May 2021 and included thorough appraisals of hazardous and regulated materials relevant to demolition and disposal. The asbestos portions of the survey were conducted in general conformance with the protocols established by EPA regulation 40 CFR 763, the Asbestos Hazard Emergency Response Act (AHERA). Components of the building were inspected, and homogeneous areas (HAs) were identified, documented, and quantified. An individual HA consists of a suspect building material which appears similar throughout in terms of color, texture, and date of application. Bulk samples of suspect materials were submitted to SanAir Technologies Laboratory in Powhatan, Virginia, for analysis by PLM. The asbestos survey was performed by a Tennessee-licensed Asbestos Inspector. The survey for miscellaneous hazardous materials included general visual inspections.

Section 2 presents the results of the assessment and sampling. The results from the sampling event are supplemented with tables of laboratory results for asbestos samples collected in each building. Laboratory data sheets and chain of custody forms for asbestos samples are provided in Appendix 2. General recommendations and regulatory requirements are discussed in Section 3.

2.0 SURVEY RESULTS

2.1 Building Descriptions

The former residence at 1151 Sevier Avenue is built on a sloping lot and includes two interior levels and a crawlspace-basement. The main level at grade in the front includes a living room, kitchen, pantry, bathroom, and bedroom. The upstairs includes a bathroom, hallway, and two bedrooms. The basement is only accessible from the exterior back side of the house, and it was used mainly for storage. The main level back bedroom is a later addition built on a concrete block foundation over a dirt crawlspace. The original construction is wood framed with plaster interior walls and ceilings over wood lath. Limited newer walls are drywall or fiberboard. The rear addition has wood framing with drywall. Most of the structure has hardwood flooring, except for the kitchen and pantry-bath which have layers of VFT, vinyl sheet flooring, and ceramic tile. The roof is pitched and covered with asphalt shingles. A fire has severely damaged the main level back bedroom, limiting accessibility for the survey. Smoke damage is evident throughout the structure.

The former residence at 1209 Island Home Avenue is also built on a sloping lot and includes two interior levels. The main level includes a combination bedroom-living room, kitchen, and

bathroom. The lower level includes former laundry and storage spaces. The back kitchen and bathroom are a later addition built on a concrete block foundation. The original construction is wood framed with plaster interior walls and ceilings over gypsum board lath. The interior plaster walls are mostly covered with wood paneling, and the living room ceiling has a suspended grid and acoustical tiles. Walls in the addition are mostly fiberboard with wood paneling. The main level has hardwood flooring in the living room and layers of VFT and vinyl sheet flooring in the kitchen and bathroom. The basement floor is concrete. Basement walls are a combination of drywall, fiberboard, and Formica panels. The roof is pitched and covered with asphalt shingles. Photographs are provided in Appendix 1.

The air in each structure was formerly conditioned by heating, ventilating, and air conditioning (HVAC) units with ducted supply and return. Both structures are currently abandoned, and the HVAC units and most other appliances have been removed. The homes were likely originally heated with coal-fired furnaces and/or radiators, but those have also been removed since construction.

2.2 Asbestos-containing Materials

Fifteen (15) potentially asbestos-containing HAs were identified at 1151 Sevier Avenue and sixteen (16) were identified at 1209 Island Home Avenue during the survey. QE2 personnel collected twenty-one (21) samples at 1151 Sevier Avenue and seventeen (17) samples at 1209 Island Home Avenue to evaluate the HAs. Laboratory results for the samples collected from the houses are provided in Tables 1 and 2, respectively, and the confirmed ACM are highlighted. QE2 confirmed two (2) materials at 1151 Sevier Avenue and four (4) materials at 1209 Island Home Avenue as ACM. Laboratory data sheets and chain of custody forms for asbestos samples are provided in Appendix 2.

Table 1
Laboratory Results of Asbestos Sampling
1151 Sevier Avenue, Knoxville, Tennessee

Sample #s	Sample Description / Location	Asbestos Content
1151-1-1	Plaster ceiling base & skim coat & texture / Pantry	Base – ND Skim – ND Texture – ND
1151-1-2	Plaster ceiling base & skim coat & texture / Kitchen	ND
1151-1-3	Plaster ceiling base & skim coat & texture / Upstairs East Bedroom	ND
1151-2-1	Plaster wall base & skim coat / Upstairs East Bedroom	Base – ND Skim - ND
1151-2-2	Plaster wall base & skim coat / Living Room	ND
1151-3-1	Tan & brown vinyl floor tile (VFT) & brown mastic / Kitchen at Hall, under ceramic tile, backer board, vinyl (HA-4 & HA-5), and plywood	VFT – 2% Chrysotile Mastic - ND
1151-4-1	Brown 6-in brick patterned vinyl sheet flooring / Kitchen at Hall, under ceramic tile, backer board, & white vinyl (HA-5)	20% Chrysotile
1151-4-2	Brown 6-in brick patterned vinyl sheet flooring / Kitchen at Pantry, under ceramic tile, backer board, & white vinyl (HA-5)	20% Chrysotile
1151-5-1	Off-white square-patterned vinyl sheet flooring & leveling compound / Kitchen at Hall, under ceramic tile & backer board	Vinyl – ND Leveler – ND
1151-5-2	Off-white square-patterned vinyl sheet flooring & leveling compound / Kitchen at Pantry, under ceramic tile & backer board	Vinyl – ND Leveler – ND
1151-6-1	Gray backer board / Kitchen at Hall, under ceramic tile	ND
1151-6-2	Gray backer board / Upstairs Bathroom, under vinyl sheet flooring	ND
1151-7-1	Beige 12-in square patterned vinyl sheet flooring / Pantry-bathroom	ND
1151-8-1	White 8-in square patterned vinyl sheet flooring & mastic / Pantry-bathroom, under beige vinyl (HA-7)	Vinyl – ND Mastic - ND
1151-9-1	Drywall & joint compound wall / Pantry-bathroom around shower	Drywall – ND Compound – ND
1151-10-1	Burned flooring material / Back Bathroom	ND
1151-11-1	Fiberboard wall & texture / Upstairs East Bedroom Closet	Wallboard – ND Texture – ND
1151-12-1	Beige duct tape / Upstairs West Bedroom Closet	ND
1151-13-1	Woodgrain patterned vinyl sheet flooring, mastic, & vinyl backing / Upstairs Bathroom	Vinyl – ND Mastic – ND Vinyl - ND
1151-14-1	Roof shingle & liner shingle / Roof, northwest corner	Black shingle – ND Gray shingle – ND
1151-15-1	Interior window glaze / Basement steel framed window	ND

ND = None Detected

VFT = Vinyl Floor Tile

Note: Highlighted entries indicate confirmed ACM.

Table 2
Laboratory Results of Asbestos Sampling
1209 Island Home, Knoxville, Tennessee

Sample #s	Sample Description / Location	Asbestos Content
1209-1-1	Drywall ceiling with wallpaper over ceiling tiles / Living Room	ND
1209-2-1	White 2' x 4' suspended ceiling tiles / Living Room	ND
1209-3-1	Drywall walls under wood paneling (no joint compound) / Living Room	ND
1209-3-2	Drywall walls under Formica wall panels (no joint compound) / Basement	ND
1209-4-1	Tan 12-in square patterned vinyl sheet flooring / Kitchen	ND
1209-5-1	Black felt liner / Kitchen floor, under HA-4	ND
1209-6-1	Black felt liner / Kitchen floor, under plywood & HA-4	ND
1209-7-1	Tan 10-in square patterned vinyl sheet flooring / Bathroom	ND
1209-8-1	4 layers of brown patterned vinyl sheet flooring & mastic / Bathroom, under HA-7	Vinyl – 20% Chrysotile Mastic - <1% Chrysotile
1209-9-1	Red-brown vinyl floor tile (VFT) / Bathroom, under HA-8 & particle board	4% Chrysotile
1209-10-1	Black felt liner / Bathroom floor, under HA-9	ND
1209-11-1	Black felt liner, mastic, & fiber board wall / Bathroom wall, under paneling	Fiber board – ND Mastic – ND Liner – ND
1209-12-1	Green-painted Transite panel with ridges / Basement, attached to ceiling	10% Chrysotile
1209-13-1	Green-painted Transite panel, smooth / Basement, attached to wall	10% Chrysotile
1209-14-1	Exterior window glaze / wood framed Main Level windows	ND
1209-15-1	Interior window glaze / steel framed Basement windows	<1% Chrysotile
1209-16-1	Brown & black roofing shingles / Roof over Porch	Brown shingle – ND Black shingle - ND

ND = None Detected

VFT = Vinyl Floor Tile

Note: Highlighted entries indicate confirmed ACM.

The types and locations for confirmed ACMs at the two houses are presented in Tables 3 and 4, respectively.

Table 3
Confirmed ACMs and Locations
1151 Sevier Avenue, Knoxville, Tennessee

Confirmed ACM	Locations	Estimated Quantity
1151-3 & 1151-4 Tan & brown vinyl floor tile (VFT) and brown 6-in brick patterned vinyl sheet flooring	Kitchen - under ceramic tile, backer board, and non-ACM white vinyl sheet flooring; VFT is also under plywood (potentially under cabinetry)	200 SF of area with 1 layer of VFT & 1 layer of vinyl

ACM = Asbestos-containing Material

HA = Homogeneous Area

VFT = vinyl floor tile

Table 4
Confirmed ACMs and Locations
1209 Island Home Avenue, Knoxville, Tennessee

Confirmed ACM	Locations	Estimated Quantity
1209-8 & 1209-9 4 layers of brown patterned vinyl sheet flooring and 1 layer red-brown vinyl floor tile (VFT)	Bathroom – under tan vinyl sheet flooring; VFT is also under particle board	40 SF of area with 4 layers of vinyl and 1 layer of VFT
1209-12 & 1209-13 Green-painted Transite panels with ridges & smooth green-painted Transite panel	Basement, 2 ridged panels on ceiling, 1 smooth panel on wall	6 SF

ACM = Asbestos-containing Material

HA = Homogeneous Area

VFT = vinyl floor tile

In the house at 1151 Sevier Avenue, one type of VFT (1151-3, tan & brown) and one type of vinyl sheet flooring (1151-4, brown 6-in brick patterned) were confirmed as ACMs. No asbestos was detected in the associated mastics. The ACM VFT and vinyl are layers in the same space in the Kitchen. Both layers are under ceramic tile, backer board, and non-ACM white vinyl sheet flooring. The VFT is also under plywood. Both layers are potentially under kitchen cabinetry. No other materials in Building 1 were confirmed as ACMs.

In the house at 1209 Island Home Avenue, one type of VFT (1209-9, reddish brown) and one type of vinyl sheet flooring (1209-8, brown patterned) were confirmed as ACMs. The ACM VFT and vinyl are layers in the same space in the Bathroom. Both layers are under non-ACM tan vinyl sheet flooring. The VFT is also under particle board sheeting. Four layers of the ACM vinyl sheet flooring are present in the doorway and may cover the entire Bathroom space.

Three small (approximately 2 square feet each) asbestos-cement Transite panels were confirmed in the Basement of 1209 Island Home Avenue. Two of the panels have a ridged

texture (1209-12) and are mounted on the ceiling. The third panel (1209-13) is smooth and mounted on a wall. All three are painted a light green color.

Traces of asbestos at less than 1% were detected in two additional materials (Basement window glaze and Bathroom vinyl sheet flooring mastic) at 1209 Island Home Avenue, but these materials do not meet the definition of an ACM; therefore, they do not require abatement or special disposal prior to demolition. Photos are provided in Appendix 1.

2.3 Other Hazardous Materials

Due to future potential relocation or disposal, the presence, locations, or quantities of other hazardous materials items may change prior to demolition. The inspection for other potentially hazardous materials revealed the following items which must be further assessed and/or properly managed if renovation plans include disturbance or disposal:

- mercury-containing fluorescent bulbs, various appliances with potential thermostats,
- ODS-containing refrigerator at 1151 Sevier Avenue, and
- miscellaneous cleaning compounds, paint containers, oils and lubricants, a motor, etc., mostly in the Basement at 1151 Sevier Avenue.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Asbestos

The presence of Category I non-friable ACM (VFT and vinyl sheet flooring) was confirmed at both houses during the survey. Category II non-friable ACM (Transite panels) were confirmed at 1209 Island Home Avenue. Non-friable materials are not considered to be regulated ACM (RACM) unless they have become friable or are expected to become friable through being subjected to breaking, sanding, grinding, cutting, or abrading during demolition, renovation, or maintenance activities. Future demolition of the structures could render them friable. Locations of confirmed ACM are provided for the two structures in Tables 3 and 4.

The TDEC APC obtained authorization from the EPA to regulate activities involving asbestos or ACM within most of Tennessee. The APC developed the Tennessee Asbestos Rules (TDEC Rules: Chapter 1200-3-11-.02), which are like the federal NESHAP regulations. In Knox County, the rules are enforced by the Knox County DAQM. The DAQM must be notified, and a permit obtained before any renovation, removal, or demolition activities that disturb more than 260 linear feet, 160 square feet, or 35 cubic feet of RACM. The threshold values are exceeded at 1151 Sevier Avenue. The threshold value would also be exceeded at 1209 Island Home Avenue, since the 40-square foot Bathroom has 5 layers of ACM flooring. A completed Notification must be post-marked or hand-delivered to the DAQM at least ten (10) working days before work

begins. An accredited and Tennessee-licensed asbestos abatement contractor must perform the ACM removal. Other policies of the Owner may apply, and project scopes of work should be reviewed prior to work that may impact the ACM.

Other Hazardous Materials

Detailed visual assessments identified the presence of mercury-containing equipment including light bulbs and appliances or equipment potentially containing thermostats. Mercury-containing wastes and articles that are generated by households and commercial and industrial facilities are in most cases considered hazardous waste and must be managed properly. Mercury-containing wastes are regulated by TDEC under Standards for Universal Waste Management (Per TDEC Rule 1200-1-11-.12 and equivalent Federal regulations). Any removed mercury-containing equipment should be handled as a hazardous waste and are subject to the EPA Land Disposal Restriction Regulations. Any mercury-containing equipment should be recycled, and the mercury retorted. Transportation, waste manifesting/profiling, and receipt certification should be coordinated with the recycling firm. Final documentation of disposal certification should be provided to the Owner for their records.

Although the inspection did note at least one fluorescent light fixture, the equipment is newer and not expected to include a PCB ballast.

The house at 1151 Sevier Avenue includes a refrigerator that could potentially contain ODSs. Other cooling equipment like HVAC units have been removed from the site. Federal law prohibits the open discharge of ODSs to the atmosphere during maintenance or disposal. Under 40 CFR Part 82, the EPA issued a Final Rule (May 14, 1993) promulgating regulations under Section 608 of the Clean Air Act that establish a recycling program for ozone-depleting refrigerants recovered during the servicing and disposal of air-conditioning or refrigeration equipment. Together with the prohibition (effective July 1, 1992) on venting during servicing, repair, and disposal of Class I and Class II substances, these regulations are intended to reduce emissions of ODSs to the environment. The regulations require that ODSs contained “in bulk” (i.e., with refrigerant charge intact) in appliances/equipment be removed prior to disposal. Section 608 contains requirements concerning the safe disposal of Class I and Class II substances. If the equipment contains ODSs with the charge intact, then trained technicians must safely recover the ODSs. According to the EPA regulations, the last entity in the disposal chain must either remove the refrigerant or obtain verification that refrigerant has been removed previously. The regulations note that refrigerant lines cannot simply be cut before disposal as this is a violation of the statute and the regulations prohibiting venting of ODSs to the environment.

The visual assessment also noted miscellaneous cleaning compounds, an oil-bearing motor, paint containers, oils and lubricant containers, etc., mostly in the Basement of 1151 Sevier Avenue. When the equipment and containers are removed prior to demolition, methods should be utilized to ensure that no damage occurs to the equipment, containers, or contents. Transportation, waste manifesting/profiling, and disposal certification should be coordinated with a licensed recycling or disposal firm or licensed disposal facility. Final documentation of disposal certification should be maintained by the Owner for all hazardous materials.

LBP was not assessed during the surveys, since TDEC does not require the abatement of LBP prior to demolition work that does not involve sanding, scraping, or other activities which create lead dust. If future work requires sanding or scraping of painted surfaces, then LBP testing is recommended for those specific surfaces prior to initiation of the work.

4.0 DISCLAIMER

The hazardous materials survey reported herein is for the former residential structures at 1151 Sevier Avenue and 1209 Island Home Avenue in Knoxville, Knox County, Tennessee. This report relies solely on conditions visually observed and readily accessible for sampling during the sampling events. If demolition activities reveal any suspect materials, they should be assumed as ACM until inspection and sampling can confirm or deny asbestos content. This report does not constitute an agreement to indemnify or insure any party against any liability of expense.

APPENDIX 1

Photographs



1151 Sevier Avenue south face



East & north sides, Basement access at plywood



West side, burned rear bedroom addition



ACM VFT & vinyl under ceramic tile in Kitchen



Brown patterned vinyl sheet floor in Kitchen



Refrigerator in 1151 Sevier Kitchen



1151 Sevier – fluorescent light bulbs, household containers of cleaners



1151 Sevier Basement – spray paint, antifreeze, & oil containers



1151 Sevier Avenue Basement – paint and caulk containers





1151 Sevier Avenue Basement - motor



1151 Sevier Avenue burned back Bedroom



1209 Island Home south side



East & north sides



1209 Island Home Basement – wall-mounted & ceiling-mounted Transite panels



1209 Island Home Bathroom – 4 layers patterned vinyl sheet flooring & reddish brown VFT underneath

APPENDIX 2

Laboratory Reports and Chain-of-Custody Forms



The Identification Specialists

Analysis Report
prepared for
Quantum Environmental & Engineering Services, LLC

Report Date: 5/25/2021

Project Name: Sevier Ave Roundabout

Project #: 501588

SanAir ID#: 21024963



NVLAP LAB CODE 200870-0

1551 Oakbridge Dr. Suite B | Powhatan, Virginia 23139-8061
888.895.1177 | 804.897.1177 | fax: 804.897.0070 | IAQ@SanAir.com | SanAir.com



SanAir ID Number

21024963

FINAL REPORT

5/25/2021 3:46:18 PM

Name: Quantum Environmental & Engineering Services, LLC
Address: 126 Dante Road
Knoxville, TN 37918
Phone: 865-689-1395

Project Number: 501588

P.O. Number:

Project Name: Sevier Ave Roundabout

Collected Date: 5/20/2021

Received Date: 5/21/2021 10:30:00 AM

Dear Terry Davis,

We at SanAir would like to thank you for the work you recently submitted. The 38 sample(s) were received on Friday, May 21, 2021 via FedEx. The final report(s) is enclosed for the following sample(s): 1151-1-1, 1151-1-2, 1151-1-3, 1151-2-1, 1151-2-2, 1151-3-1, 1151-4-1, 1151-4-2, 1151-5-1, 1151-5-2, 1151-6-1, 1151-6-2, 1151-7-1, 1151-8-1, 1151-9-1, 1151-10-1, 1151-11-1, 1151-12-1, 1151-13-1, 1151-14-1, 1151-15-1, 1209-1-1, 1209-2-1, 1209-3-1, 1209-3-2, 1209-4-1, 1209-5-1, 1209-6-1, 1209-7-1, 1209-8-1, 1209-9-1, 1209-10-1, 1209-11-1, 1209-12-1, 1209-13-1, 1209-14-1, 1209-15-1, 1209-16-1.

These results only pertain to this job and should not be used in the interpretation of any other job. This report is only complete in its entirety. Refer to the listing below of the pages included in a complete final report.

Sincerely,

A handwritten signature in black ink that reads "Sandra Sobrino". The signature is written in a cursive, flowing style.

Sandra Sobrino
Asbestos & Materials Laboratory Manager
SanAir Technologies Laboratory

Final Report Includes:

- Cover Letter
- Analysis Pages
- Disclaimers and Additional Information

Sample conditions:

- 37 samples in Good condition.
- 1 samples in Layer Missing condition. (#20)



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FINAL REPORT

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Name: Quantum Environmental & Engineering Services, LLC
Address: 126 Dante Road
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Phone: 865-689-1395

Project Number: 501588**P.O. Number:****Project Name:** Sevier Ave Roundabout**Collected Date:** 5/20/2021**Received Date:** 5/21/2021 10:30:00 AM

Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1151-1-1 / 21024963-001 Plaster Ceiling-Texture, Skim, Base/Pantry, Plaster	Grey Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-1 / 21024963-001 Plaster Ceiling-Texture, Skim, Base/Pantry, Skim Coat	Off-White Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-1 / 21024963-001 Plaster Ceiling-Texture, Skim, Base/Pantry, Texture	White Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-2 / 21024963-002 Plaster Ceiling-Texture, Skim, Base/Kitchen, Plaster	Grey Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-2 / 21024963-002 Plaster Ceiling-Texture, Skim, Base/Kitchen, Skim Coat	Off-White Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-2 / 21024963-002 Plaster Ceiling-Texture, Skim, Base/Kitchen, Texture	White Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-3 / 21024963-003 Plaster Ceiling-Texture, Skim, Base/Upstairs East Bedroom, Plaster	Grey Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-3 / 21024963-003 Plaster Ceiling-Texture, Skim, Base/Upstairs East Bedroom, Skim Coat	Off-White Non-Fibrous Homogeneous		100% Other	None Detected
1151-1-3 / 21024963-003 Plaster Ceiling-Texture, Skim, Base/Upstairs East Bedroom, Texture	White Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: *Mary E. Roseblock*Approved Signatory: *Johnathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021



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Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1151-2-1 / 21024963-004 Plaster Walls-Skim & Base/Upstairs East Bedroom, Plaster	Grey Non-Fibrous Homogeneous		100% Other	None Detected
1151-2-1 / 21024963-004 Plaster Walls-Skim & Base/Upstairs East Bedroom, Skim Coat	Off-White Non-Fibrous Homogeneous		100% Other	None Detected
1151-2-2 / 21024963-005 Plaster Walls-Skim & Base/Downstairs Living Room, Plaster	Grey Non-Fibrous Homogeneous		100% Other	None Detected
1151-2-2 / 21024963-005 Plaster Walls-Skim & Base/Downstairs Living Room, Skim Coat	Off-White Non-Fibrous Homogeneous		100% Other	None Detected
1151-3-1 / 21024963-006 VFT Under Plywood/Kitch Wall, Floor Tile	Tan Non-Fibrous Homogeneous		98% Other	2% Chrysotile
1151-3-1 / 21024963-006 VFT Under Plywood/Kitch Wall, Mastic	Brown Non-Fibrous Homogeneous		100% Other	None Detected
1151-4-1 / 21024963-007 Vinyl/Kitch Hall	Brown Non-Fibrous Homogeneous		80% Other	20% Chrysotile
1151-4-2 / 21024963-008 Vinyl/Kitch Pantry	Brown Non-Fibrous Homogeneous		80% Other	20% Chrysotile
1151-5-1 / 21024963-009 Vinyl/Kitch Hall, Vinyl	Off-White Non-Fibrous Homogeneous	20% Cellulose	80% Other	None Detected

Analyst: *Mary E. Roseblock*Approved Signatory: *Johnathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021



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Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1151-5-1 / 21024963-009 Vinyl/Kitch Hall, Mastic/Leveler	Various Non-Fibrous Heterogeneous		100% Other	None Detected
1151-5-2 / 21024963-010 Vinyl/Kitch Pantry, Vinyl	Off-White Non-Fibrous Homogeneous	20% Cellulose	80% Other	None Detected
1151-5-2 / 21024963-010 Vinyl/Kitch Pantry, Mastic/Leveler	Various Non-Fibrous Heterogeneous		100% Other	None Detected
1151-6-1 / 21024963-011 Backerboard Under Ceramic Tile/Kitchn	Gray Fibrous Homogeneous	70% Cellulose	30% Other	None Detected
1151-6-2 / 21024963-012 Backerboard Under Bath Vinyl/Upstairs Bath	Gray Fibrous Homogeneous	70% Cellulose	30% Other	None Detected
1151-7-1 / 21024963-013 Vinyl 12"/Kitch Pantry	Beige Non-Fibrous Homogeneous		100% Other	None Detected
1151-8-1 / 21024963-014 Vinyl/Kitch Pantry, Vinyl	White Non-Fibrous Homogeneous	20% Cellulose	80% Other	None Detected
1151-8-1 / 21024963-014 Vinyl/Kitch Pantry, Mastic	Yellow Non-Fibrous Homogeneous		100% Other	None Detected
1151-9-1 / 21024963-015 Drywall & Joint Compound/Downstairs Shower Wall, Drywall	White Non-Fibrous Homogeneous	5% Cellulose	95% Other	None Detected
1151-9-1 / 21024963-015 Drywall & Joint Compound/Downstairs Shower Wall, Joint Compound	White Non-Fibrous Homogeneous		100% Other	None Detected

Analyst: *Mary E. Roseblock*Approved Signatory: *Johnathan Wilson*

Analysis Date: 5/25/2021

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Received Date: 5/21/2021 10:30:00 AM

Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1151-10-1 / 21024963-016 Flooring Material/Burned Back Bathroom	Gray Non-Fibrous Homogeneous		100% Other	None Detected
1151-11-1 / 21024963-017 Fiberboard Wall & Texture/Upstairs East B/R Closet, Fiberboard	Brown Fibrous Homogeneous	99% Cellulose	1% Other	None Detected
1151-11-1 / 21024963-017 Fiberboard Wall & Texture/Upstairs East B/R Closet, Texture	Various Non-Fibrous Homogeneous		100% Other	None Detected
1151-12-1 / 21024963-018 Duct Tape/Upstairs West B/R Closet	Beige Fibrous Homogeneous	55% Cellulose	45% Other	None Detected
1151-13-1 / 21024963-019 Vinyl Flooring/Upstairs Bath, Vinyl	Brown Non-Fibrous Homogeneous		100% Other	None Detected
1151-13-1 / 21024963-019 Vinyl Flooring/Upstairs Bath, Mastic	Clear Non-Fibrous Homogeneous		100% Other	None Detected
1151-13-1 / 21024963-019 Vinyl Flooring/Upstairs Bath, Vinyl	Gray Non-Fibrous Homogeneous		100% Other	None Detected
1151-14-1 / 21024963-020 Roof Shingle & Tar Paper Liner/NW Corner, Shingle	Black Non-Fibrous Heterogeneous	15% Glass	85% Other	None Detected
1151-14-1 / 21024963-020 Roof Shingle & Tar Paper Liner/NW Corner, Shingle	Gray Non-Fibrous Heterogeneous	10% Glass	90% Other	None Detected
1151-15-1 / 21024963-021 Interior Window Glazing/Basement Windows	Brown Non-Fibrous Homogeneous	15% Cellulose	85% Other	None Detected

Analyst: *Mary E. Roseblock*

Approved Signatory: *Johnathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021



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Project Number: 501588**P.O. Number:****Project Name:** Sevier Ave Roundabout**Collected Date:** 5/20/2021**Received Date:** 5/21/2021 10:30:00 AM

Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1209-1-1 / 21024963-022 Drywall Ceiling/Living Room	White Non-Fibrous Homogeneous	5% Cellulose	95% Other	None Detected
1209-2-1 / 21024963-023 2x4 Ceil. Tile Fiberboard/Liv. Room	White Fibrous Homogeneous	99% Cellulose	1% Other	None Detected
1209-3-1 / 21024963-024 Drywall Wall Under Paneling/Liv. Room	White Non-Fibrous Homogeneous	5% Cellulose	95% Other	None Detected
1209-3-2 / 21024963-025 Drywall Wall Under Formica Panel/Basement	White Non-Fibrous Homogeneous	5% Cellulose	95% Other	None Detected
1209-4-1 / 21024963-026 12" Vinyl/Kitchen	Tan Non-Fibrous Homogeneous		100% Other	None Detected
1209-5-1 / 21024963-027 Felt Under HA4/Kitchen	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
1209-6-1 / 21024963-028 Felt Under Plywood/Kitchen	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
1209-7-1 / 21024963-029 10" Vinyl/Bath	Tan Non-Fibrous Homogeneous	20% Cellulose	80% Other	None Detected
1209-8-1 / 21024963-030 Vinyl/Bath Under HA-7, Vinyl	Beige Non-Fibrous Homogeneous		80% Other	20% Chrysotile
1209-8-1 / 21024963-030 Vinyl/Bath Under HA-7, Mastic	Various Non-Fibrous Heterogeneous		100% Other	< 1% Chrysotile

Analyst: *Mary E. Roseblock*Approved Signatory: *Jonathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021



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Project Name: Sevier Ave Roundabout
Collected Date: 5/20/2021
Received Date: 5/21/2021 10:30:00 AM

Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1209-9-1 / 21024963-031 VFT/Bath Under HA-8	Red Non-Fibrous Homogeneous		96% Other	4% Chrysotile
1209-10-1 / 21024963-032 Felt Liner/Bath Under HA-9	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
1209-11-1 / 21024963-033 Felt Liner & Fiberboard Wall Under Paneling/Bath, Felt	Black Fibrous Homogeneous	65% Cellulose	35% Other	None Detected
1209-11-1 / 21024963-033 Felt Liner & Fiberboard Wall Under Paneling/Bath, Mastic	Brown Non-Fibrous Homogeneous		100% Other	None Detected
1209-11-1 / 21024963-033 Felt Liner & Fiberboard Wall Under Paneling/Bath, Fiberboard	Brown Fibrous Homogeneous	99% Cellulose	1% Other	None Detected
1209-12-1 / 21024963-034 Ridged Panel On Ceiling/Basement	Green Non-Fibrous Homogeneous		90% Other	10% Chrysotile
1209-13-1 / 21024963-035 Smooth Panel On Wall/Basement	Green Non-Fibrous Homogeneous		90% Other	10% Chrysotile
1209-14-1 / 21024963-036 Exterior Window Glazing/Front Porch	White Non-Fibrous Homogeneous		100% Other	None Detected
1209-15-1 / 21024963-037 Interior Window Glaze/Basement	Tan Non-Fibrous Homogeneous		100% Other	< 1% Chrysotile
1209-16-1 / 21024963-038 Roof Shingle Layers/Front Porch, Shingle	Brown Non-Fibrous Heterogeneous	10% Glass	90% Other	None Detected

Analyst: *Mary E. Roseblock*

Approved Signatory: *Jonathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021



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Project Number: 501588

P.O. Number:

Project Name: Sevier Ave Roundabout

Collected Date: 5/20/2021

Received Date: 5/21/2021 10:30:00 AM

Analyst: Roseblock, Mary

Asbestos Bulk PLM EPA 600/R-93/116

SanAir ID / Description	Stereoscopic	Components		Asbestos Fibers
	Appearance	% Fibrous	% Non-fibrous	
1209-16-1 / 21024963-038 Roof Shingle Layers/Front Porch, Shingle	Black Non-Fibrous Heterogeneous	10% Glass	90% Other	None Detected

Analyst: *Mary E. Roseblock*

Approved Signatory: *Johnathan Wilson*

Analysis Date: 5/25/2021

Date: 5/25/2021

Disclaimer

This report is the sole property of the client named on the SanAir Technologies Laboratory chain-of-custody (COC). Results in the report are confidential information intended only for the use by the customer listed on the COC. Neither results nor reports will be discussed with or released to any third party without our client's written permission. The final report shall not be reproduced except in full without written approval of the laboratory to assure that parts of the report are not taken out of context. The information provided in this report applies only to the samples submitted and is relevant only for the date, time, and location of sampling. The accuracy of the results is dependent upon the client's sampling procedure and information provided to the laboratory by the client. SanAir assumes no responsibility for the sampling procedure and will provide evaluation reports based solely on the sample(s) in the condition in which they arrived at the laboratory and information provided by the client on the COC, such as: project number, project name, collection dates, po number, special instructions, samples collected by, sample numbers, sample identifications, sample type, selected analysis type, flow rate, total volume or area, and start stop times that may affect the validity of the results in this report. Samples were received in good condition unless otherwise noted on the report. SanAir assumes no responsibility or liability for the manner in which the results are used or interpreted. This report does not constitute and shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any other U.S. governmental agencies and may not be certified by every local, state, and federal regulatory agencies.

Samples are held for a period of 60 days. Fibers smaller than 5 microns cannot be seen with this method due to scope limitations.

For NY state samples, method EPA 600/M4-82-020 is performed.

NYELAP Disclaimer:

Polarized- light microscopy is not consistently reliable in detecting asbestos in floor covering and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.

Asbestos Certifications

NVLAP lab code 200870-0

City of Philadelphia: ALL-460

PA Department of Environmental Protection Number: 68-05397

California License Number: 2915

Colorado License Number: AL-23143

Connecticut License Number: PH-0105

Massachusetts License Number: AA000222

Maine License Number: LB-0075, LA-0084

New York ELAP lab ID: 11983

Rhode Island License Number: PCM00126, PLM00126, TEM00126

Texas Department of State Health Services License Number: 300440

Commonwealth of Virginia 3333000323

Washington State License Number: C989

West Virginia License Number: LT000616

Vermont License: AL166318

Louisiana Department of Environmental Quality: 212253, Cert 05088

Revision Date: 8/14/2020

SanAir Technologies Laboratory, Inc.

1551 Oakbridge Drive, Suite B - Powhatan, VA 23139

804.897.1177 888.895.1177 Fax 804.897.0070

www.sanair.com

Asbestos Chain of Custody

SanAir ID Number

21024963

Company	Quantum Environmental & Engineering, LLC	Project #	501588	Phone #	865-689-1395
Address	126 Dante Road	Project Name	Sevier Ave Roundabout	Phone #	865-607-0210
City, St., Zip	Knoxville, TN 37918	Date Collected	5/20/2021	Fax #	865-689-6844
Samples Collected By	TLD	P.O. Number		Email	tdavis@QE2LLC.com

Asbestos Analysis Types

Bulk		Air		Soil/Vermiculite	
ABB	PLM EPA 600 R-93 116	<input checked="" type="checkbox"/>	ABA	PCM NIOSH 7400	<input type="checkbox"/>
	Positive Stop	<input type="checkbox"/>	ABA-2	OSHA w TWA*	<input type="checkbox"/>
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/>	ABTEM	TEM AHERA	<input type="checkbox"/>
ABB1K	PLM EPA 1000 Point Count	<input type="checkbox"/>	ABATN	TEM NIOSH 7402	<input type="checkbox"/>
ABBEN	PLM EPA NOB	<input type="checkbox"/>	ABT2	TEM Level II	<input type="checkbox"/>
ABBCH	TEM Chatfield	<input type="checkbox"/>			
ABBTM	TEM EPA NOB	<input type="checkbox"/>			
ABBNY	TEM NY FLAP 1984	<input type="checkbox"/>			
OTHER Matrix:		<input type="checkbox"/>			

Water		Dust			
ABHE	EPA 100.2	<input type="checkbox"/>	ABWA	TEM Wipe ASTM D-6480	<input type="checkbox"/>
		<input type="checkbox"/>	ABDMV	TEM Microvac ASTM D-5755	<input type="checkbox"/>

Turn Around	<input type="checkbox"/> 3 HR (4 HR TEM)	<input type="checkbox"/> 6 HR (8 HR TEM)	<input type="checkbox"/> 12 HR	<input type="checkbox"/> 24 HR
Times	2 Days <input checked="" type="checkbox"/>	3 Days <input type="checkbox"/>	4 Days <input type="checkbox"/>	5 Days <input type="checkbox"/>

Sample #	Sample Identification/Location	Volume or Area	Sample Type	Flow Rate*	Time* Start - Stop
1151-1-1	plaster ceiling - texture, stain, base / Pantry			bulk	
1151-1-2	↓ Kitchen				
1151-1-3	↓ upstairs east bedroom				
1151-2-1	plaster walls - stain + base / upstairs east bedroom				
1151-2-2	↓ downstairs Living Room				
1151-3-1	tan brown under under plywood / Kitch hall				
1151-4-1	brown brick pattern vinyl / Kitch hall				
1151-4-2	brown brick pattern vinyl / Kitch pantry				
1151-5-1	off-white square pattern vinyl / Kitch hall				
1151-5-2	↓ Kitch pantry				
1151-6-1	gray backer board under ceramic tile / Kitch.				
1151-6-2	↓ under bath vinyl / upstairs bath				

Special Instructions	2-day IAI - Thanks!
----------------------	---------------------

Relinquished by	Date	Time	Received by	Date	Time
Terence Davis	5/20/2021	1:34/5	AM	5/21/21	10:30am

Unless scheduled, the turn around time for all samples received after 5 pm Friday will begin at 8 am Monday morning.
Weekend or Holiday work must be scheduled ahead of time and is charged for rush turn around time.
Work with standard turn around time sent Priority Overnight and Billed To Recipient will be charged a \$10 shipping fee.

SanAir Technologies Laboratory, Inc.

1551 Oakbridge Drive, Suite B - Powhatan, VA 23139

804.897.1177 888.895.1177 Fax 804.897.0070

www.sanair.com

Asbestos Chain of Custody

SanAir ID Number

21024963

Company	Quantum Environmental & Engineering, LLC	Project #	501588	Phone #	865-689-1395
Address	126 Dante Road	Project Name	Sevier Ave Roundabout	Phone #	865-607-0210
City, St., Zip	Knoxville, TN 37918	Date Collected	5/20/2021	Fax #	865-689-6844
Samples Collected By	TLD	P.O. Number		Email	tdavis@QE2LLC.com

Asbestos Analysis Types

Bulk		Air		Soil/Vermiculite	
ABB	PLM EPA 600 R-93 116	<input checked="" type="checkbox"/> ABA	PCM NIOSH 7400	<input type="checkbox"/> ABSE	PLM EPA 600 R-93 116 (Qual)
	Positive Stop <input type="checkbox"/>	<input type="checkbox"/> ABA-2	OSHA w. TWA*	<input type="checkbox"/> ABSP	PLM CARB 435 (LOD 0.1%)
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/> ABTEM	TEM AHERA	<input type="checkbox"/> ABSP1	PLM CARB 435 (LOD 0.25%)
ABBIK	PLM EPA 1000 Point Count	<input type="checkbox"/> ABATN	TEM NIOSH 7402	<input type="checkbox"/> ABSP2	PLM CARB 435 (LOD 0.1%)
ABBEN	PLM EPA NOB	<input type="checkbox"/> ABT2	TEM Level II		
ABBCU	TEM Chatfield				
ABBTM	TEM EPA NOB				
ABBNY	TEM NY ELAP 198.4				
OTHER Matrix					

Water		Dust	
<input type="checkbox"/> ABHE	EPA 100.2	<input type="checkbox"/> ABWA	TEM Wipe ASTM D-6480
		<input type="checkbox"/> ABDMV	TEM Microvac ASTM D-5755

Turn Around	<input type="checkbox"/> 3 HR (4 HR TEM)	<input type="checkbox"/> 6 HR (8 HR TEM)	<input type="checkbox"/> 12 HR	<input type="checkbox"/> 24 HR
Times	2 Days <input checked="" type="checkbox"/>	3 Days <input type="checkbox"/>	4 Days <input type="checkbox"/>	5 Days <input type="checkbox"/>

Sample #	Sample Identification/Location	Volume or Area	Sample Type	Flow Rate*	Time* Start - Stop
1151-7-1	beige vinyl 12" pattern / Kitch pantry				bulk
1151-8-1	white square+rectangle pattern vinyl / Kitch pantry				
1151-9-1	drywall + joint compound / downstairs shower wall				
1151-10-1	flooring material / behind back bathroom				
1151-11-1	fiberboard wall + texture / upstairs east B/R closet				
1151-12-1	duct tape / upstairs west B/R closet				
1151-13-1	wood grain vinyl flooring / upstairs bath				
1151-14-1	roof shingle + tarpaper liner / NW corner				
1151-15-1	interior window glazing / basement windows				
1209-1-1	drywall ceiling / Living room				
1209-2-1	2x4 cer. tile fiberboard / Liv. Room				
1209-3-1	drywall wall under paneling / Liv. Room				

Special Instructions	2-day IAT - Thanks!
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Relinquished by	Date	Time	Received by	Date	Time
Terrance Davis	5/20/2021	1:35	mm	5/21/21	10:30pm

Unless scheduled, the turn around time for all samples received after 5 pm Friday will begin at 8 am Monday morning.

Weekend or Holiday work must be scheduled ahead of time and is charged for rush turn around time.

Work with standard turn around time sent Priority Overnight and Billed To Recipient will be charged a \$10 shipping fee.

SanAir Technologies Laboratory, Inc.

1551 Oakbridge Drive, Suite B - Powhatan, VA 23139
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Asbestos Chain of Custody

SanAir ID Number

21024963

Company: Quantum Environmental & Engineering, LLC	Project #: 501588	Phone #: 865-689-1395
Address: 126 Dante Road	Project Name: Sevier Ave Roundabout	Phone #: 865-607-0210
City, St., Zip: Knoxville, TN 37918	Date Collected: 5/20/2021	Fax #: 865-689-6844
Samples Collected By: TLD	P.O. Number:	Email: tdavis@QE2LLC.com

Asbestos Analysis Types

Bulk		Air		Soil/Vermiculite	
ABB	PLM EPA 600 R-93 116	<input checked="" type="checkbox"/>	ABA	PCM NIOSH 7400	<input type="checkbox"/>
	Positive Stop	<input type="checkbox"/>	ABA-2	OSHA w TWA*	<input type="checkbox"/>
ABEPA	PLM EPA 400 Point Count	<input type="checkbox"/>	ABTEM	TEM AHERA	<input type="checkbox"/>
ABBIK	PLM EPA 1000 Point Count	<input type="checkbox"/>	ABATN	TEM NIOSH 7402	<input type="checkbox"/>
ABBEN	PLM EPA NOB	<input type="checkbox"/>	ABT2	TEM Level II	<input type="checkbox"/>
ABBCH	TEM Chatfield	<input type="checkbox"/>			
ABBTM	TEM EPA NOB	<input type="checkbox"/>			
ABBNY	TEM NY ELAP 198.4	<input type="checkbox"/>			
OTHER Matrix:		<input type="checkbox"/>			

Water		Dust			
ABHE	EPA 100.2	<input type="checkbox"/>	ABWA	TEM Wipe ASTM D-6480	<input type="checkbox"/>
			ABDMV	TEM Microvac ASTM D-5755	<input type="checkbox"/>

Turn Around Times	<input type="checkbox"/> 3 HR (4 HR TEM)	<input type="checkbox"/> 6 HR (8 HR TEM)	<input type="checkbox"/> 12 HR	<input type="checkbox"/> 24 HR
	2 Days <input checked="" type="checkbox"/>	3 Days <input type="checkbox"/>	4 Days <input type="checkbox"/>	5 Days <input type="checkbox"/>

Sample #	Sample Identification/Location	Volume or Area	Sample Type	Flow Rate*	Time* Start - Stop
1209-3-2	dry wall wall under paneling / basement		bulk		
1209-4-1	12" square pattern vinyl / Kitchen				
1209-5-1	black felt under H44 + lugan / Kitchen				
1209-6-1	black felt under plywood / Kitchen				
1209-7-1	10" square pattern vinyl / Bath				
1209-8-1	beige patterned vinyl / Bath under H4-7				
1209-9-1	red-brown VFT / Bath under H4-8				
1209-10-1	black felt liner / Bath under H4-9				
1209-11-1	felt liner + fiberboard wall under paneling / Bath				
1209-12-1	ridged panel on ceiling / basement				
1209-13-1	smooth panel on wall / basement				
1209-14-1	exterior window glazing / front porch				

Special Instructions	2-day TAT - Thanks!
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Relinquished by	Date	Time	Received by	Date	Time
Terence Davis	5/20/2021	1:34 PM	AM	5/21/21	10:30 AM

Unless scheduled, the turn around time for all samples received after 5 pm Friday will begin at 8 am Monday morning.
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1209-15-1 interior window glaze / Basement
1209-16-1 roof shingle layers / Front porch