

**REMOVAL ASSESSMENT REPORT
For
WR GRACE RIVER ROAD
JEFFERSON, JEFFERSON PARISH, LOUISIANA**

Prepared for

U.S. Environmental Protection Agency Region 6
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1 INTRODUCTION

Under Superfund Technical Assessment and Response Team (START) Contract Number EP-W-06-077, Technical Directive Document (TDD) number (2/Dyn-077-13-002), the U. S. Environmental Protection Agency (EPA) Region 6 tasked the START contractor CSS-Dynamac to conduct a removal assessment (RA) at the former WR Grace – River Road (WRGRR) site (Appendix A) located in Jefferson, Jefferson Parish, Louisiana. The EPA Identification Number for the site is LAN000606896. The WRGRR site is currently owned by Louis Hauser, et. al (Appendix D). W.R. Grace used to operate on this property as W.R. Grace/Zonolite. The WRGRR property is managed by The Industrial Group, LLC, formerly known as Deckbar Realty Company, and currently occupied by ECO-IHS. The former WRGRR site is situated on property bounded by River Road to the south, Boyce Road to the east, commercial properties to the north and west (Figures 1 and 2). The focus of this investigation was to collect dust samples from inside the on-site building (Area A); to collect surface and subsurface soil samples from the adjacent commercial vacant lot (Area B), selected residential properties in the southwestern section of Jefferson Heights Subdivision (Area C), and the abandoned and inactive railroad spur right-of-way (ROW) located north of the site (Area D); and to conduct Activity-Based Sampling (ABS) from outside section of Area A, selected grids from Area B, selected residential properties located in Area C, and from selected grids in Area D. These samples were collected to determine the presence or absence of Libby amphibole asbestos (LAA) fibers associated with vermiculite (packaged and sold under the trade name Monokote) from the Libby, Montana, and W.R. Grace mining facility. For the purposes of the RA, LAA fibers will include the following asbestos mineral types:

- Actinolite;
- Edenite;
- Tremolite;
- Richterite; and
- Winchite

For the purposes of the RA, non-LAA fibers will include the following asbestos mineral types:

- Amosite; and
- Anthophyllite

The RA evaluated the extent of contamination at both on-site (Area A) and off-site properties, designated as Areas B to D. Areas A through D will be defined in later sections of the Removal Assessment Report (RAR).

The WRGRR field assessment activities were conducted in phases. Phase I was conducted in June 2014 and consisted of indoor dust sampling in Area A and soil sampling in Areas B and C. Phase II was conducted in July 2014 and consisted of ABS in Areas A, B and C. Phase III was conducted on September 11, 2014 and consisted of the collection of surface soil samples from Area D. Phase IV was conducted on October 2, 2014 and consisted of ABS activities in Area D. All RA field activities will be discussed in later sections of the RAR. Field observations and data can be found in the site-specific logbooks (Appendix B). Site photo-documentation of removal assessment activities can be found in Appendix C.

As defined in the TDDs scope of work, the purpose of the assessment is to:

- Perform removal assessment activities in accordance with EPA Office of Solid Waste and Emergency Response (OSWER) Directive 9360.3-08 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP);
- Develop and submit a cost estimate/staffing plan;
- Develop a site-specific Health and Safety Plan (HASP);
- Provide Title and Deed search for site and adjacent properties;
- Prepare a Quality Assurance Sampling Plan (QASP) and implement the QASP in the collection and analysis of the collected soil, dust, and air samples;
- Procure laboratory services for the analyses of the collected samples;
- Conduct standard air monitoring for potential hazardous conditions;
- Review and interpret resulting analytical and non-analytical data;
- Recommend potential waste disposal options and associated disposal costs;
- Evaluate the site for factors to be considered in determining the appropriateness of a removal action pursuant to Section 300.415 (b)(2) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);

- Coordinate removal assessment activities with the EPA On-Scene Coordinators (OSCs); and
- Prepare a removal assessment report (RAR).

The EPA Federal On-scene Coordinators (FOSCs) for the WRGRR site are Mike McAteer, and Althea Foster, with support from FOSC Bill Rhotenberry. The CSS-Dynamac START Project Manager (PjM) is Steve Cowan.

2 SITE DESCRIPTION AND BACKGROUND

This section provides information about the site location and description, regulatory history, and summary of previous investigations related to the site. For purposes of the Removal Assessment, the properties sampled were divided into Areas A through D (Figures 3 and 4).

2.1 Site Location and Description

Area A – On-site

Area A consists of the former W. R. Grace/Zonolite Site now known as WRGRR property and currently occupied by ECO-HSI (ECO) (Figure 3). The former WRGRR facility, referred to as Area A, is located at 4729 River Road in Jefferson Parish, Louisiana, (Figures 1 and 2). The geographical coordinates of the site, as taken from the location of the former silos are: 29.949939°N and 90.172678°W. The WRGRR site consists of a 16,000 square-foot building situated on approximately 2 acres of land (Figure 3). At the time of the RA field activities ECO was using the building for office space and storage of janitorial supplies (Appendix G). A concrete pad surrounded by grass on the north side of the building was the former location of several metal storage silos for the facility. This section of Area A is now covered with rock/gravel and soil and is being used to store empty crates and industrial totes. Directly north and adjacent to Area A is a commercial building and concrete pad which are fenced. An abandoned railroad spur, overgrown with vegetation, runs northward along the west side of the adjacent commercial building. The east side of the on-site building (Area A) consists of a concrete loading dock and a parking lot, which is adjacent to Boyce Road. A chain link fence encloses a portion of a gravel, grass, and soil-covered area of the property along the west side of the building. A small area in front of the building along the River Road frontage is both, partially vegetated with grass, and paved with concrete (Appendix E).

The site was purchased in 1964 by Louis D. Hauser et al, and is currently managed by The Industrial Group, LLC, formerly known as Deckbar Realty Company (Appendices D and E). W.R. Grace leased the site and used the existing 16,000 square-foot building for vermiculite exfoliation operations from 1965 to 1989. According to Agency for Toxic Substances and Disease Registry (ATSDR) reports, upon terminating their lease of the site, W.R. Grace sold some of the vermiculite processing equipment and office equipment

to the Deckbar Realty Company, the management company for the property. Among the items left behind or sold to Deckbar Realty Company were the unloading conveyor system for vermiculite, the storage silos, the Monokote bag house, the exfoliation furnace, and various material handling elevators and conveyors (Appendix E).

The facility has been leased to other businesses since 1989 which have included a clothing wholesale company, a printing business, a marine insulation company which used adhesives, and a cardboard storage facility (Appendices D and H).

The Mississippi River is located approximately 1,000 feet to the south of the site. Current land use surrounding the site is primarily commercial and industrial properties, while a residential area, the Jefferson Heights Subdivision, is located northeast of the site. The closest residential properties are located approximately 300 feet northeast of the site (Figures 2 and 4; Appendix E). Jefferson Heights Subdivision (Area C) is visible in aerial photographs dating back to 1940's (Appendix F). According to the United States Census Bureau (USCB) 2000 census data, more than 75% of the homes in this northeast residential area were constructed before 1969. The 1990 U.S. census reported that 5,047 people lived within 1 mile of the facility when it was exfoliating vermiculite (Appendix E).

Area B – Commercial Vacant Lot, 4709 River Road

Area B consists of a commercial vacant lot located to the east of the WRGRR site and is currently covered with grass. The physical address of the property is 4709 River Road. The vacant lot is "L" shaped and is approximately 44,300 ft² in size. The vacant lot was for sale at the time of the removal assessment field activities. There was no maintained fence surrounding the commercial vacant lot and it can be readily accessed by the general public. Three commercial facilities are adjacent to this property (Figure 2); however, they are not part of the removal assessment activities. The property is owned by Albert Mintz, et al., and managed by The Industrial Group, LLC, formerly known as Deckbar Realty Company and operated by commercial entities (Figure 3; Appendix D).

Area C – Residential Properties, Jefferson Heights Subdivision

Area C consists of residential properties located east-northeast of the WRGRR site and is located on Jefferson Heights Avenue and Dodge Avenue (Figures 2 and 4; Appendix D).

Area C is bounded by River Road to the south, Dodge Avenue to the east, South Drive to the north and St. George Avenue and commercial properties to the west. Historical aerial photographs indicate residential properties were present in this section of Area C since the 1930's (Appendix F).

Area D – New Orleans Public Belt Railroad Company (NOPBRC) Railroad Spur Right-of-Way (ROW)

Area D consists of the inactive railroad spur owned by the NOPBRC and is located approximately 150 feet northwest of the WRGRR site and extends for approximately 1,400 feet north to the intersection of the railroad spur with Methurin Street (Figure 3; Appendix D). The width of Area D typically varies from 20 to 35 feet. The railroad spur, at one time provided rail access to the various commercial and industrial businesses situated adjacent to the railroad spur.

2.2 Site History and Summary of Previous Investigations

Vermiculite exfoliation occurred at the WRGRR site from 1965 to 1989. Materials were transported in by rail lines located immediately northwest of the site. Exfoliation operations occurred in the warehouse. The Government Accounting Office (GAO) reported that the available WR Grace invoice data indicates that the facility received approximately 148,295 tons of Libby vermiculite between 1966 –1988 (Appendix I). During that period, the facility produced attic insulation, masonry insulation, lightweight concrete aggregate, spray-applied fireproofing, and various horticultural soil conditioners. The Monokote brand of spray-applied fireproofing was produced at the facility until 1976. The Monokote 3 (MK-3) product, discontinued at all W.R. Grace facilities in 1973, was formulated with 10% to 19% chrysotile as an additive. Subsequent formulations of Monokote, MK-4 and MK-5, were produced at the facility without the addition of chrysotile. The equipment used for the vermiculite exfoliating was said to have been dismantled in the 1980s. The silos used to store the raw vermiculite ore, located on the north side of the building were said to have been removed around 2002 - 2003 (Appendix E).

Operations after 1989, as previously mentioned, included a marine insulation company, a clothing wholesale operation, and a printing business (Wholesale Printables). These tenants have used the property since 2003. After WR Grace/Zonolite vacated the premises in 1989, a marine insulation company that used adhesives occupied the building.

The front (southern) warehouse unit, at the time of the E&E sampling event in November 2008, was leased to a printing company storing cardboard boxes for packaging and shipping. One to two employees were on the property periodically to move boxes from the site to the vendors. The rear (northern) unit of the warehouse facility was vacant but planned for future occupancy (Appendix E). The site is currently occupied by ECO-IHS, who leases the property from the Deckbar Realty Company (Appendices D and H).

The only document filed with the Louisiana Department of Environmental Quality (LDEQ) Electronic Document Management System (EDMS) regarding the site was an e-mail dated from 2005 which stated WR Grace had not operated at the site for over ten years prior. No information regarding operational history was found on file with the LDEQ EDMS (Appendix E).

Previous EPA activities are listed below.

November 20, 2013

The EPA and START-3 conducted a windshield survey at the site on November 20, 2013. The EPA and START-3 made the following observations:

The WRGRR site is now occupied by ECO-HSI, who is leasing the property from Deckbar Realty Company. ECO-HSI provides janitorial and lawn care staffing services to hotels/casinos. Supplies for these services are stored on the site (Appendix G).

START identified 4709 River Road (Area B) as a potential soil sampling location based on it being undeveloped and vegetated land surrounding the commercial building that is located at that address. EPA and START conducted a visual inspection of the undeveloped section of the property for the presence of vermiculite. No visual observations of vermiculite were noted at the time of the survey (Appendix G).

A windshield survey was conducted at the Jefferson Heights residential community (Area C), primarily along Jefferson Heights Avenue, South Drive, Dodge Avenue, and St. George Avenue. It was noted that the properties in the community were well vegetated with trees, shrubs, and grass (Appendix G).

EPA and START located the former NOPBRC railroad spur that was used to provide vermiculite ore to the former WRGRR facility. The NOPBRC railroad spur is located approximately 150 feet northwest of Area A and extends approximately 1,400 feet north-

northwest to Methurin Street. The NOPBRC railroad spur is bordered to the east and west by several commercial properties. EPA and START conducted a visual inspection of 700 feet of the NOPBRC spur ROW for the presence of vermiculite. No visual observations of vermiculite were observed at the time of the survey (Appendix G).

August 25, 2009

The EPA and START-3 conducted a windshield survey of the off-site locations (Appendix H). The EPA and START-3 made the following observations:

- START-3 collected GPS coordinates for the site and collected photo-documentation of the WRGRR site.
- The facility appeared to be active; however, the occupant of the facility could not be determined.
- The site still consists of the same structures identified in the July 17, 2008 EPA visit. EPA and START-3 located flakes of raw vermiculite along the northeast gate (former location of silos).
- The western section of the facility is surrounded by a chain-link fence topped with barbed wire. This area was noted as being well vegetated.
- The facility is bordered to the west by W&O Supply Company; to the south by River Road and the Mississippi River; to the east by St. George Street; and to the north by a warehouse complex (Appendix H).

November, 2008

A Site Inspection (SI) was performed on the WRGRR site by Ecology and Environment, Inc. as documented in the "Site Inspection Report for the Former Zonolite, W.R. Grace Vermiculite Exfoliation Site" dated March 2009 (Appendix E).

The Site Inspection field sampling event was conducted from November 12, 2008 through November 13, 2008. Soil samples, dust samples, and bulk samples were collected both on- and off-site. Four (4) surface soil samples were collected around the former hopper location located on the northern section of the property. These samples were collected at 0.0 feet to 0.5 feet below the ground surface (bgs). Eight grids, each grid 15 feet x 30 feet, were established on the west side of the property and two soil samples were

collected from each grid: one (1) sample collected at 0.0 to 0.5 feet bgs (surface soil) and one (1) sample collected at 1.0 feet to 1.5 feet bgs, for a total of 16 soil samples. Thus, a total of 21 soil samples (on-site) including one duplicate, were collected on-site, as well as three (3) background surface soil samples collected from the Mississippi River Levee located across the street from the site. All the collected soil samples were analyzed for asbestos by CARB 435, PLM methodology and 20% of the soil samples were analyzed by CARB 435, TEM methodology,

Twelve (12) dust samples, including one duplicate sample, were collected from inside the on-site building. The majority of the dust samples were collected in the northern section of the on-site building where exfoliation activities occurred while under the ownership of W.R. Grace. Four (4) dust samples were collected from the southern, inside section of the on-site building, which consist primarily of office space. In addition, two (2) bulk samples of suspect material (on-site) were also collected from the northern section of the site. The dust samples were analyzed for asbestos by ASTM 5755, a TEM methodology; and the bulk material samples were analyzed for asbestos by 40 CFR 763, Subpart F, and a PLM method.

November 2008, Soil Sample Results

CARB 435 PLM analysis of the three (3) background surface soil samples indicated concentrations of less than 0.25% asbestos by weight (< 0.25%). CARB 435 PLM analysis of the four (4) surface soil samples collected in the northern section of the site indicated concentrations of less than 0.25% asbestos by weight (< 0.25%). CARB 435 TEM analysis of sample SS-04 indicated the presence of five asbestos structures. CARB 435 PLM analysis of the surface soil samples collected from the eight grids located on the west side of the site indicated concentrations of < 0.25% asbestos in all eight samples. CARB 435 TEM analysis on one (1) of the surface soil and all eight (8) of the subsurface soil samples collected from the grids indicated asbestos structures in six (6) of the nine (9) soil samples, with number of detected structures ranging from one (1) to five (5). See Appendix E, Table 6-1 for the soil analytical results.

November 2008, Dust Sample Results

Asbestos structures were detected above the AHERA benchmark level of 5,000 structures per cubic centimeter (s/cc) for primary amphibole asbestos in five (5) of the twelve (12)

dust samples collected from the building interior, including the duplicate sample. These sample locations included Dust-1, Dust-2, Dust-5, and Dust-6, which were all located inside the northern section of the building where the vermiculite exfoliation occurred. There were no amphibole asbestos structures detected in the southern section of the building. Detected amphibole asbestos concentrations ranged from 1,829 s/cc at sample location Dust-1 to 7,838 s/cc at sample location Dust-1D (duplicate). Asbestos was detected in seven (7) of the twelve dust samples, with the Total Asbestos concentrations ranging from 1,715 s/cc at sample location Dust-6 to 58,298 s/cc at sample location Dust-5. The dust analytical results can be found in Appendix E, Table 6-2.

Bulk Sample Results

A piece of black mastic and a sample of brown soil were sampled for asbestos content. Asbestos mineral fibers were detected at 1% (tremolite) in the brown soil sample. No asbestos mineral fibers were detected in the black mastic sample (Appendix E, Table 6-3).

July 17, 2008

E & E accompanied an EPA inspection team during an on-site reconnaissance inspection of the former W.R. Grace/Zonolite facility on July 17, 2008. EPA Site Assessment Manager (SAM), Brenda Nixon Cook, and EPA On-Scene Coordinator (OSC) Eric Delgado were present during the inspection (Appendix E). Observations include:

- the southern section of the site consisted of empty office spaces and a bathroom that adjoined a large warehouse area;
- the warehouse area was being used as a staging area for new cardboard products produced off-site;
- there was no access between the large, used warehouse and the smaller, unused warehouse, located in the northern section of the site;
- the silos had been removed from the site in 2003; and
- the railroad spur was visible from the rear, northern portion of the lot.

2005

The ATSDR 2005 Health Consultation Report references unpublished EPA data from 1978 air samples indicating that Libby asbestos fibers were released into the facility during the vermiculite processing and exfoliation. Air samples collected in the employee lunch room and in the general warehouse indicated the presence of 0.3 fibers per cubic centimeter (f/cc) and 0.57 f /cc respectively (Appendix E).

2002

ATSDR representatives visited the site in 2002 based on the large amount of vermiculite contaminated with amphibole asbestos that was processed at the site by exfoliation. During the time of the ATSDR visit, a clothing wholesale and printing business was operating in the main warehouse area, and the adjoining structure on the back portion of the warehouse contained equipment used to process vermiculite. This area was reportedly unused and inaccessible from the occupied section of the warehouse (Appendix E).

1989

W.R. Grace reportedly cleaned the facility and collected air samples to test for asbestos after they ceased vermiculite operations in 1989. The results were not available (Appendix E).

3 ASSESSMENT ACTIVITIES

This section addresses the various assessment activities conducted by START (both field and non-field activities), as specified in the TDD (Appendix A). All sampling activities were conducted according to the Quality Assurance Sampling Plan (QASP) prepared for the WRGRR removal assessment field activities (Appendix J). In addition, the locations of off-site sampling locations (Areas B to D) were determined with the assistance of an Air Dispersion Model prepared by START-3 for the WRGRR site (Appendix K). The Air Dispersion Model is discussed in greater detail in Section 3.3 of the Removal Assessment Report.

3.1 Indoor Dust Sampling Activities

Indoor dust samples were collected from various locations inside the on-site building associated with Area A to determine the presence or absence of amphibole asbestos or LAA, and if detected in concentrations that exceed the removal action level of 5,000 structures per centimeter squared (s/cm^2). The indoor dust samples were collected during Phase I (June 17, 2014) and were collected according to the specifications found in ASTM 5755 (Appendix L) and the W.R. Grace River Road QASP (Appendix J). Two (2) indoor dust samples were collected from the office area, three (3) samples (including one duplicate sample) were collected from the 2nd floor of the warehouse, five (5) indoor dust samples were collected from the warehouse section of the building, and three (3) indoor dust samples were collected from the former W.R. Grace exfoliation area of the building (Figure 6). Sample data related to the collected indoor dust samples can be found in Appendices B, M and N. The collected dust sample cassettes (13) were packaged and shipped to LabCor-Seattle for asbestos identification and quantification by ISO 10312 (Appendices O and P).

3.2 Soil Sampling Activities

Surface soil and subsurface soil samples were collected in various phases to determine the nature and extent of contamination by amphibole asbestos on adjacent properties (Areas B, C, and D) and if detected, whether they are in concentrations that would trigger a removal action. During Phase I, which was conducted in June 2014, surface and subsurface soil samples were collected from Area B, Commercial Vacant Lot, and Area C, Residential Properties located in Jefferson Heights Subdivision. Soil samples were not

collected during Phase II (July 2014). Phase III consisted of the collection of surface soil samples from Area D, NOPBRC Railroad Spur ROW.

Surface Soil Sampling

Where applicable, designated surface soil samples from Area B, Area C and Area D were collected to identify the nature and extent of amphibole asbestos fiber contamination (Figures 8, 9, 14, 15, and 18). In general, each surface soil sample location (designated grid) consisted of two, five-point composite samples. The sample aliquots were collected at 0 to 1 inch ("") bgs and 1" to 6" bgs soil horizons. The surface soil samples were collected approximately 5 feet from each of the four corners and from the center of the designated grid, when possible. For surface soil sampling in Area B, Area C, and Area D, the sample aliquots were collected with dedicated stainless steel trowels or spoons.

After obtaining the necessary five aliquots from the grid, the 0 to 1" bgs sample aliquots were placed in a plastic bag and homogenized. After homogenization, the 0 to 1" bgs sample was placed into a pre-labeled plastic baggie. The 1" to 6" aliquots for each grid were homogenized in a separate plastic bag, and the sample was placed into a pre-labeled plastic baggie.

The number of surface soil samples collected from each designated area is listed below:

- Area B, Commercial Vacant Lot: 18 (8, 0 to 1" bgs and 10, 1" to 6" bgs [two duplicate samples]);
- Area C, Residential Properties: 22 (10, 0 to 1" bgs and 12, 1" to 6" bgs [two duplicate samples]); and
- Area D, NOPBRC: 15 (14, 0" to 6" bgs [one duplicate sample]).

In summary, a total of 55 surface soil samples were collected during the three phases of soil sampling associated with the WRGRR removal assessment.

Subsurface Soil Sampling

Subsurface soil samples (6" to 36" bgs) were collected from Area B, Commercial Vacant Lot during Phase I to identify the vertical extent of amphibole asbestos fiber contamination, if any (Figures 10, 11, and 12). A direct push drill rig was used to collect subsurface cores from four grids in Area B. Also, during Phase I, slam bars with acetate sleeves, were used to collect subsurface soil cores in Area C, Residential Properties. The soil cores were collected to a depth of 24 inches bgs. Subsurface soil cores/samples were not collected during Phase II, III, or IV activities. For subsurface soil samples collected from soil cores obtained in Area B, the following sample collection methodology was utilized:

- After obtaining subsurface soil cores in Area B, the acetate sleeves containing the soil cores were labeled and divided into the following depth intervals as separate samples: 6" to 12" bgs; 12" to 24" bgs; and 24" to 36" bgs. After the soil core acetate sleeves were cut open, dedicated sampling spoons were used to transfer the sample matrix to separate, labeled 1 gallon baggies for homogenization. After homogenization, a soil sample was transferred to a pre-labeled quart sized plastic baggie.
- After obtaining the subsurface soil cores from Area C, the acetate sleeves containing the soil cores were labeled and divided into the following depth intervals as separate samples: 6" to 12" bgs; 12" to 18" bgs, and 18" to 24" bgs. In several of the collected soil cores, there was insufficient subsurface soil recovery to collect subsurface soil samples from all three subsurface sample depths. After the soil core acetate sleeves were cut open, dedicated sampling spoons were used to transfer the sample matrix to separate, labeled 1 gallon baggies for homogenization. After homogenization, a soil sample was transferred to a pre-labeled quart sized plastic baggie.

The number of subsurface soil samples collected from each designated area is listed below:

- Area B, NSRC: 12 (4, 6" to 12" bgs; 4, 12" to 24" bgs, and 4, 24" to 36" bgs horizons); and
- Area C, Residential Properties: 11 (5, 6" to 12" bgs; 4, 12" to 18" bgs, and 2, 18" to 24" bgs horizons).

In summary, a total of 23 subsurface soil samples were collected during the WRGRR removal assessment activities.

All data associated with the collected surface and subsurface soil samples can be found in Appendices M and N. Prior to shipping the soil samples to the laboratory for amphibole asbestos analysis, the sampling data was entered in SCRIBE Enterprise (Appendix N) and chain-of-custody (COC) forms were completed and printed (Appendix O). All collected surface and subsurface soil samples from Areas A East and West, Area B, Area C, and Area D were shipped to the LabCor-Portland, OR facility for amphibole asbestos analysis utilizing California Air Resources Board (CARB 435), modified for soil (Appendix Q) and EPA SRC-Libby-03. CARB 435 was used to prepare the samples for analysis and SRC-Libby-03, a polarized light microscopy (PLM) method was used to determine the presence of amphibole asbestos. Sections 4.2.1, 4.2.2, and 4.2.3 will discuss the analytical PLM analytical results for Areas B, C, and D.

3.3 Activity-Based Air Sampling (ABS) Activities

ABS was conducted in three phases to determine the existence of airborne LAA, and if present, whether an inhalation hazard to human health exists as a result of the exposure to LAA. ABS exposure scenarios chosen to represent activities associated with the areas included: Raking, Child Playing in the Dirt, and use of All Terrain Vehicles (ATVs). The ABS activities were conducted by either EPA/START-3 or by EPA/ERT. All ABS activities were conducted according to *EPA ERT SOP No. 2084 - Activity-Based Air Sampling for Asbestos* (Appendix R).

ABS activities include the collection of personal air samples, perimeter air samples from stationary sampling locations, and daily ambient/upwind air samples, also collected from

stationary sample locations. When conducting the ABS activities in the designated grids, the following air samples were collected, at a minimum, per scenario per grid:

- One (1) Hi Flow Personal Air Sample (designated Hi flow-rate);
- One (1) Low Flow Personal Air Sample (designated Low flow-rate); and
- Two (2) Perimeter Air Samples, designated as P1 and P2.

While the ABS scenarios were being conducted, two (2) stationary air sampling stations with designated sampling pumps (identified as P1 and P2) were collecting the P1 and P2 air samples associated with that location and scenario event. The locations of the P1 and P2 air sampling stations varied from grid to grid. The P1 and P2 air samples were collected in the general breathing zone (approximately 4 to 5 feet above the ground surface).

The duration of the chosen ABS scenarios were conducted for approximately 60 minutes. During the Raking and Child Playing in the Dirt scenarios, one EPA/START-3 member or one EPA ERT/SERA member conducted the scenario event and collected both the High Flow and Low Flow personal air samples with sampling pumps located in a dedicated backpack. During the ATV scenario events, two ATVs were utilized, a Lead ATV and Follow ATV. During the ATV events, the High and Low Flow air samples were collected from both the Lead and Follow ATVs and submitted to the laboratory for LAA analysis.

During Phase I, II, III, and IV ABS activities, ambient/upwind air samples, designated as Ambient 1 and Ambient 2, were collected each day ABS scenario events were being conducted. The Ambient 1 and 2 air sampling locations were fixed, stationary air sampling locations. The sampling High Flow-rate pumps at the Ambient 1 and 2 air sampling stations were allowed to run until all ABS sampling was conducted for that day.

Phase I ABS Activities

No ABS activities were conducted during Phase I field activities.

Phase II ABS Activities

During Phase II (July 10 – 12, 2014), EPA ERT/SERA conducted ABS activities in Area A, On-site; Area B, Commercial Vacant Lot; and in Area C, Residential Properties in Jefferson Heights

Subdivision (Table 11; Figures 7, 13, and 19). In Area A, On-site, ABS activities were conducted between July 10 -11, 2014 and consisted of ATV scenarios conducted in grids AA-001 and AA-002 (Figure 7). Two ATVs were utilized per scenario event, a Lead and a Following ATV. High Flow and Low Flow personal samples were collected from both the Lead and Following ATVs. Two perimeter samples (P1 and P2) were collected per ATV scenario event. During the ABS activities conducted in Area A, 33 air samples were collected for LAA identification and quantification.

In Area B, Commercial Vacant Lot, ABS activities were conducted on July 11, 2012 and consisted of one Lawn Mowing and one Raking scenario per grid area. The ABS activities were conducted in Grids AB-001/002 and AB-006/007 (Figure 13). The lawn mower utilized during the ABS scenarios did not have an attached grass catcher. The mowed grass was raked during the Raking scenario. The individual conducting the lawn mowing or raking collected the High and Low Flow personal samples from the designated grids. Perimeter (P1 and P2) air samples were collected during each scenario event. During the ABS activities conducted in Area B, nineteen (19) air samples were collected for LAA identification and quantification.

In Area C, Residential Properties in Jefferson Heights Subdivision, ABS activities were conducted on July 12, 2014 and consisted of the Raking and Child Playing in the Dirt scenarios. The grids selected for ABS activities in Area C include AC-006, AC-010, and AC-024 (Table 11). The selection was based on one grid (AC-006) with trace detection of amphibole asbestos in the soil, grid AC-010 with no amphibole asbestos detected in the collected soil samples, and grid AC-024 where no soil samples were collected. At each grid and scenario event one individual collected the High and Low Flow personal air samples. Perimeter (P1 and P2) air samples were collected from each grid and during each scenario event. During the ABS activities conducted in Area C, 26 air samples were collected for LAA identification and quantification.

A total of 78 ABS air samples were collected during Phase II activities. See Appendix S, which contains the Air Sampling Data sheets for ABS data associated with the Phase II ABS activities. Sections 4.3.1, 4.3.2, and 4.3.3 will discuss the ABS air sample results for Areas A, B, and C.

Phase III ABS Activities

No ABS activities were conducted during Phase III field activities.

Phase IV ABS Activities

During Phase IV ABS activities (October 2, 2014), EPA/START-3 conducted two Raking scenarios in Area D, NOPBRC Railroad Spur ROW, in Grid AD-009 (Figure 19) and overlapping partially into Grid 008. ABS activities were conducted in grid AD-009 based on the trace concentrations of amphibole asbestos detected in the soil sample collected from this grid on September 11, 2014. The individual conducting the Raking scenarios collected the High and Low Flow personal samples from the designated grids. Perimeter (P1 and P2) air samples were collected during each scenario event. During the ABS activities conducted in Area D, twelve (12) air samples were collected for LAA identification and quantification. See Appendix T, which contains the Air Sampling Data sheets for ABS data associated with the Phase IV ABS activities. Section 4.3.4 will discuss the ABS air sample results for Area D.

An on-site microscopist was not utilized during the Phase II and IV ABS activities due to the low potential of particulate overloading on the air cassettes. In general, the collected ABS air samples were relinquished to START, who packaged, prepared the Sample Hierarchy (Appendix U), and shipped the air samples to LabCor-Seattle facility for asbestos identification and quantification by the International Organization for Standardization (ISO) Method 10312, *Ambient Air – Determination of Asbestos Fibers: Direct Transfer Transmission Electron Microscopy Method* (Appendices N, O, and P).

The analytical sensitivity for the Perimeter, High and Low Flow samples was set at 0.005 structures per cubic centimeter (s/cm³) during Phase II ABS activities and at 0.0005 s/cm³ during Phase IV ABS activities. The analytical sensitivity for the ambient/background samples was set at 0.0005 s/cm³ for both Phase II and IV ABS activities.

3.4 Air Dispersion Models

A deposition impact analysis using the American Meteorological Society/Environmental Protection Agency Regulatory (AERMOD) [version 13350] was conducted for the WRGRR site to show the potential asbestos deposition associated with the WRGRR vermiculite processing activities over a 25-year operation period (Appendix K). For this modeling analysis, it was assumed that vermiculite ore was processed at the site from 1965 to 1980 and that the vermiculite ore originated from the Libby, Montana Mine. See Appendix K for the parameters

and assumptions used to prepare the air dispersion model. The maximum asbestos deposition modeled is 0.7544 grams per square meter [g/m^2] and is located approximately 250 meters north of the WRGRR emissions source (Appendix K).

Estimated asbestos / soil mixing ratios were also determined from the deposition modeling results utilizing soil type data from the NRCS Soil Data Mart and typical bulk density values for soil types. The maximum asbestos/soil mixing ratio modeled for all asbestos deposited within the top 2 inches of soil is 11.69 milligrams of asbestos per kilogram [mg/kg] of soil “sampled”, and is located approximately 250 meters north of the WRGRR emissions source. The maximum asbestos/soil mixing ratio modeled for all emitted asbestos deposited within the top 6 inches of soil is 3.90 milligrams of asbestos per kilogram [mg/kg] of soil “sampled”, and is located approximately 250 meters north of the WRGRR emissions source. The maximum asbestos weight percentage of soil sample modeled for all asbestos deposited within the top 2 inches (sample depth) of soil is 0.0012%, and is located approximately 250 meters north of the WRGRR emissions source.

3.5 On-line Property Ownership Searches

START-3 conducted an on-line title search for the property ownership of Area A, Area B, individual residential property owners in Area C, and Area D. The on-line title data indicates that Area A is currently owned by Luis Hauser, et. al., and is currently being managed by The Industrial Group, LLC, formerly known as Deckbar Realty Company (Appendix D). The commercial property (vacant lot) associated with Area B is currently owned by Albert Mintz, et. al., and also managed by The Industrial Group, LLC (Appendix D). The ownerships of the residential properties located in the section of Jefferson Height that were sampled in June/July 2014 can be found in Appendix D. The on-line property ownership of the inactive railroad spur located north of the site was determined to be the New Orleans Public Belt Railroad Company (NOPBRC) (Appendix D).

4 ANALYTICAL RESULTS

This section presents the analytical laboratory results for Areas A through D. The indoor dust sampling results can be found in the National Asbestos Data Entry Spreadsheets (NADES) and laboratory analytical data package for indoor dust samples (Appendix V). The PLM soil (surface and subsurface) sampling results can be found in the laboratory analytical data package for soil samples (Appendix W). The ABS air sampling results can be found in the corresponding NADES and laboratory analytical data package for air samples (Appendix X).

4.1 Indoor Dust Sampling Results

The indoor analytical results have been presented in Total Asbestos, Libby-Other Amphibole Asbestos Structures (Table 1). Analysis of the collected indoor dust samples by ISO 10312 TEM methodology detected the presence of LAA and chrysotile structures in nine of the thirteen indoor dust samples. Under this asbestos counting category, LAA was detected in concentrations exceeding the Libby site action level benchmark of 5,000 structures per centimeter squared (s/cm^2) in three indoor dust samples: WRG-004 at 29,692 s/cm^2 ; WRG-006 at 148,461 s/cm^2 and WRG-010 at 29,692 s/cm^2 (Table 1; Appendix V). Two of the three sample locations (WRG-004 and WRG-006) were located along the western wall of the central section of the warehouse and one sample (WRG-010) was located along the south wall of the 2nd floor of the central section of the warehouse, near the air conditioning vent (Figure 6). In addition, chrysotile concentrations exceeded the LAA site action level of 5,000 s/cm^2 in three indoor dust sample samples: WRG-007 at 148,461 s/cm^2 ; WRG-008 at 33,403 s/cm^2 ; and WRG-009 at 5,567 s/cm (Table 1B; Appendix V). Sample WRG -007 was located along the eastern wall of the central section of the warehouse; sample WRG-008 was located along the western wall of the central section of the warehouse; and sample WRG-009 was located on the southern wall of the 2nd floor of the central section of the warehouse.

It should be noted that neither LAA, non-LAA, or chrysotile asbestos fibers/structures were identified in concentrations exceeding LAA site action level of 5,000 s/cm^2 in the area where vermiculite exfoliation reportedly occurred in the northern section of the warehouse (samples WRG-001, WRG-002, and WRG-003) or in the office area located in the southern section of the warehouse (samples WRG-011 and WRG-012) (Tables 1A and 1B; Appendix V).

4.2 Surface/Subsurface Soil Sampling Results

4.2.1 Area B, Commercial Vacant Lot, 4709 River Road

PLM analysis of the collected surface soil samples at the 0" to 1" bgs sample depth indicated the presence of amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in samples AB-004, AB-005, AB-006, and AB-007 (Figure 8, Table 3, Appendix W). Amphibole asbestos was not detected in grids AB-001, AB-002, AB-003, and AB-008.

PLM analysis of the collected surface soil samples at the 1" to 6" bgs sample depth indicated the presence of amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in sample AB-006. Amphibole asbestos was detected at 0.25% in grid AB-004 and at 1.5% in grid AB-005. Amphibole asbestos was not detected in grids AB-001, AB-002, AB-003, AB-007 and AB-008. See Figure 9, Table 3 and Appendix W for the location and results of the PLM analysis. The amphibole asbestos detected in grids AB-004 and AB-005 exceed the EPA Region 6 clean-up criterion of 0.25% or greater.

PLM analysis of the collected subsurface samples at 6" to 12" bgs from grids AB-003, AB-004, AB-006, and AB-007 indicated amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in grid AB-006 (Figure 10, Table 4, Appendix W). Amphibole asbestos was not detected in grids AB-003, AB-004, or AB-007.

PLM analysis of the collected subsurface samples at 12" to 24" bgs from grids AB-003, AB-004, AB-006, and AB-007 indicated amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in grid AB-007 (Figure 11, Table 4, Appendix W). Amphibole asbestos was not detected in grids AB-003, AB-004, and AB-006.

PLM analysis of the collected subsurface samples at 24" to 36" bgs from grids AB-003, AB-004, AB-006, and AB-007 did not indicate the presence of amphibole asbestos (Figure 12, Table 4, Appendix W).

4.2.2 Area C, Residential Properties, Jefferson Heights Subdivision

PLM analysis of the collected surface soil samples at the 0" to 1" bgs sample depth did not indicate the presence of amphibole asbestos in samples collected from Area C (Figure 14, Table 6, Appendix W).

PLM analysis of the collected surface soil samples at the 1" to 6" bgs sample depth indicated the presence of amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in sample AC-006 (Figure 15, Table 6, Appendix W). Amphibole asbestos was not detected in grids AC-002, AC-004, AC-007, AC-010, AC-012, AC-013, AC-016, AC-020, and AC-022.

PLM analysis of the collected subsurface samples at 6" to 12" bgs, 12" to 18" bgs and 18" to 24" bgs from grids AC-002, AC-006, AC-007, AC-012, and AC-020 did not indicate the presence amphibole asbestos (Figure 16, Table 7, Appendix W).

4.2.3 Area D, NOPBRC Railroad Spur ROW

PLM analysis of the collected soil samples at 0" to 6" bgs from grids AD-001 to AD-014 indicated amphibole asbestos at trace concentrations ($>0\%$ but $< 0.25\%$) in grid AD-009. Amphibole asbestos was detected at 0.75% in grid AD-011 and at 1.5% in grid AD-010 (Figure 18, Table 9, Appendix W). Amphibole asbestos was not detected in grids AD-001 to AD-008 and AD-012 to AD-014. The amphibole asbestos detected in grids AD-010 and AD-011 exceed the EPA Region 6 clean-up criterion of 0.25% or greater.

4.3 Activity-Based Sampling, Air Sampling Results

4.3.1 Area A - On-site

TEM analyses of the collected ATV scenario air samples from grids AA-001 and AA-002 did not indicate the presence of LAA or chrysotile asbestos structures (Figure 7, Table 2, Appendix X).

4.3.2 Area B - Commercial Vacant Lot, 4709 River Road

TEM analyses of the collected Lawn Mowing and Raking scenario air samples from combined grids AB-001/002 and AB-006/007 did not indicate the presence of LAA structures or chrysotile asbestos structures (Figure 13, Table 5, Appendix X).

4.3.3 Area C - Residential Properties, Jefferson Heights Subdivision

TEM analyses of the collected Raking and Child Playing in the Dirt Scenario air samples from grids AC-006, AC-010, and AC-024 did not indicate the presence of LAA structures or chrysotile asbestos structures (Figure 17, Table 8, Appendix X).

4.3.4 Area D – NOPBRC Railroad Spur ROW

TEM analyses of the collected Raking Scenario air samples from grid AD-009 did not indicate the presence of LAA structures or chrysotile asbestos structures (Figure 19, Table 10, Appendix X).

5 WASTE UNIT/SOURCE EVALUATION

This section describes waste units/sources and the associated waste characteristics of the CERCLA hazardous substances, pollutants or contaminants associated with the waste units/sources.

Contaminated Dust

Area A – On-site Building

TEM analysis of the indoor dust samples detected concentrations exceeding the Libby site action level of 5,000 s/cm² for LAA and chrysotile asbestos fibers in three (3) samples. These indoor dust samples are WRG-004, WRG-006, and WRG-010. The indoor dust samples, samples WRG-004 and WRG-006, were collected from the first floor of the western wall of the central section of the warehouse; sample WRG-010 was collected from the 2nd floor, central section of the southern wall in the warehouse section of the building. In addition, TEM analysis indicated four (4) indoor dust samples, WRG-005, WRG-007, WRG-008, and WRG-009, with detected chrysotile asbestos fibers in concentrations exceeding the LAA site screening level of 5,000 s/cm². Sample WRG-005 was collected from the eastern wall of the northeast section of the warehouse building; sample WRG-007 was collected from the eastern wall, near the central section of warehouse building; sample WRG-008 was collected from the western wall of the southwest section of the central warehouse building; and sample WRG-009 was collected from the air conditioning vent located on the 2nd floor of the warehouse building. The dimensions of the central warehouse section, where the indoor dust concentrations exceeded the AHERA screening level benchmark, are approximately 70 feet in width by 175 feet in length, and with a height of 20 feet. The dimensions of the entire building structure are approximately 70 feet in width by 235 feet in length, and with a height of 20 feet.

Contaminated Soil

Area B – Commercial Vacant Lot, 4709 River Road

PLM analyses of collected soil samples indicate amphibole asbestos-contaminated soil in grids AB-004 and AB-005 (Figure 9, Table 3). Based on an excavation depth of 2 feet, the calculated

waste stream volume of amphibole asbestos-contaminated soil in Area B is 889 cubic yards (yds³) or 1,334 tons (Appendix Y).

Area D – NOPBRC Railroad Spur ROW

PLM analyses of collected soil samples indicate amphibole asbestos-contaminated soil in grids AD-010 and AD-011 (Figure 18, Table 9). Based on an excavation depth of 2 feet, the calculated waste stream volume of amphibole asbestos-contaminated soil in Area D is 520 yds³ or 780 tons (Appendix Y).

Based on the calculated waste streams in Area B and Area D, approximately 1,409 yds³ or 2,114 tons of asbestos-contaminated soil associated with the WRGRR site may need to be excavated and transported to a permitted disposal facility.

6 THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

This section addresses factors delineated in the National Oil and Hazardous Substance Pollution Contingency Plan at 40 CFR 300.415(b)(2) for determining the appropriateness of a potential removal action for a site. The factors applicable to the WRGRR site are summarized below.

- **Actual or potential exposure of nearby human populations, animals, or the food chain to hazardous substances or pollutants or contaminants (if applicable).**

The former WRGRR site is situated within a commercial and industrial setting. The on-site building (Area A) is currently occupied by ECO-HSI to store janitorial supplies. The employees of ECO-HSI may become exposed to the LAA and chrysotile contaminated dust in the warehouse as part of their everyday activities. The detected indoor dust concentrations (Total Asbestos - LAA, Other Amphibole category) for seven samples exceeded the Libby site action level of 5,000 s/cm². Three indoor dust samples, with detected LAA and chrysotile asbestos, ranged in concentration from 29,400 s/cm² to 148,000 s/cm². In addition, four of the indoor dust samples with only chrysotile asbestos detected, ranged from 6,500 s/cm² to 150,000 s/cm² in the central section of the warehouse building.

The commercial, vacant lot located at 4709 River Road (Area B) was for sale at the time of the removal assessment field activities. Should the vacant lot be purchased and dirt work as part of the construction of a commercial or industrial facility be conducted, the construction workers may become potentially affected by the amphibole contaminated soil in Area B. In addition, the lawn was being maintained by The Industrial Group, LLC representatives. PLM analysis of the collected soil samples from Area B indicated amphibole asbestos concentrations ranging from 0.25% to 1.5% in grids AB-004 and AB-005. It should be noted that residential properties are located approximately 400 feet to the east-northeast from the WRGRR site and approximately 150 feet east-northeast of grid AB-004. The vacant lot is accessible to the general public, as there is no maintained fencing surrounding the property.

The NOPBRC railroad spur ROW (Area D) is located north-northwest of the former WRGRR site. Commercial properties are situated on either side of the railroad spur and there is no fencing or security in place to prohibit individuals from traversing this area. PLM analysis of the soil samples collected in grids AD-010 and AD-011 indicated amphibole asbestos concentrations at 1.5% and 0.75%, respectively.

- **Weather Conditions that may cause hazardous substances or pollutants or contaminants to migrate.**

The New Orleans, LA area is subjected to heavy precipitation events (thunderstorms), hurricanes (heavy precipitation and high winds), which could lead to flooding, and tornadoes (violent winds) that may cause amphibole and or LAA structures and fibers to migrate from Area B – Commercial Vacant Lot.

7 DISPOSAL OPTIONS AND COST

This section describes the potential disposal options and associated costs for the identified waste streams located at the site.

7.1 Potential Disposal Options

It has been determined that the asbestos-contaminated dust from the warehouse (Area A – On-site Building) requires abatement by a Louisiana-licensed abatement company.

The LAA-contaminated soil in Area B –Commercial Vacant Lot and Area D – NOPBRC Railroad Spur ROW will be excavated, transported and disposed at an asbestos-licensed landfill located in the New Orleans, LA or southern LA area.

7.2 Associated Disposal Cost

The estimated disposal costs are based on past experience conducting asbestos-contaminated soil excavation and disposal. The transportation and disposal (T&D) costs are based on a volume of 2,114 tons, and T&D prices of \$50.00 per ton, \$75.00 per ton, and \$100.00 per ton.

The T&D costs associated with the asbestos-contaminated soil from Area B and Area D can be calculated as follows:

- $1,409 \text{ yds}^3 \times 1.5 = 2,114 \text{ tons} \times \$50.00 \text{ ton} = \$105,700$ (Appendix Y);
- $1,409 \text{ yds}^3 \times 1.5 = 2,114 \text{ tons} \times \$75.00 \text{ ton} = \$158,550$ (Appendix Y); and
- $1,409 \text{ yds}^3 \times 1.5 = 2,114 \text{ tons} \times \$100.00 \text{ ton} = \$211,400$ (Appendix Y);

Therefore, the total T&D cost for the WRGRR site ranges between \$105,700 and \$211,000. This cost does not include the necessary labor costs associated with the potential excavation and loading process.

8 SUMMARY

The W.R. Grace River Road (WRGRR) site was a former vermiculite exfoliation facility located 4729 River Road in Jefferson, Jefferson Parish, Louisiana and formerly operated by W.R. Grace from 1965 to 1989. It has been reported that approximately 148,000 tons of vermiculite obtained from the W.R. Grace Libby, Montana mine was exfoliated at this facility. The WRGRR site is located in a commercial/industrial sector of Jefferson, Louisiana and is located approximately 400 feet west-southwest of the southwest section of the Jefferson Heights Subdivision. Located at the site is one, 16,000 ft² building that is currently being occupied by ECO-HSI (ECO). The on-site building contains an office area and a warehouse area. ECO currently uses the warehouse to store janitorial equipment and supplies. The WRGRR site is fenced on the north and west sides of the property; the east side contains a parking lot; and the south side borders River Road. ECO is currently leasing the property from The Industrial Group, LLC, formerly known as Deckbar Realty Company, who in turn serves as the property manager for Luis Hauser, et al, the current owner of the property.

As part of the EPA Region 6, Superfund Response and Prevention Branch's removal assessment, indoor dust, soil, and Activity-Based Sampling (ABS) activities were conducted over four (4) phases to determine the extent of amphibole-asbestos contaminated dust and soil and to determine if air borne concentrations pose a significant risk to human health. During Phase I, indoor dust samples were collected from the on-site building and surface/subsurface soil samples were collected from Areas B and C. TEM analysis of the indoor dust samples detected concentrations exceeding the Libby site action level of 5,000 s/cm² in seven sample locations (WRG-004, WRG-005, WRG-006, WRG-007, WRG-008, WRG-009, and WRG-010). These seven locations were located inside the warehouse section of the on-site building. PLM analysis of the collected soil samples from Area B indicated concentrations exceeding the EPA Region 6 Excavation Action Level of 0.25% in two grids, AB-004 and AB-005. PLM analysis of the collected soil samples from Area C did not indicate soil sampling locations exceeding the EPA Region 6 Excavation Action Level of 0.25%. Trace concentrations, > 0% but < 0.25% amphibole asbestos was detected in one grid, AC-006.

During Phase II activities, ABS was conducted in Area A (ATV Scenarios), Area B (Lawn Mowing and Raking Scenarios) and Area C (Raking and Child Playing in Dirt Scenarios). TEM

analysis of the collected air samples from Areas A, B, and C did not detect the presence of LAA structures. It should be noted that rainfall events were frequent during this time period.

During Phase III activities, surface soil sampling (0 to 6 inches bgs) was conducted in Area D. PLM analysis of the collected soil samples from Area D indicated amphibole asbestos concentrations exceeding the EPA Region 6 Excavation Action Level of 0.25% in two grids, AD-010 and AD-011. Trace concentrations, > 0% but < 0.25% amphibole asbestos was detected in one grid, AD-009.

During Phase IV activities, ABS (2 Raking Scenarios) was conducted in Area D, grid AD-009, and partly overlapping into Grid 008. TEM results for the collected air samples from grid AD-009 did not indicate the presence of LAA structures.

Based on the indoor dust TEM results, the LAA-contaminated dust inside the on-site building, warehouse section, will need to be abated during a removal action. The soil within Area B, grids AB-004 and AB-005, and Area D, grids AD-010 and AD-011 will need to be excavated and the excavated soil disposed at an asbestos-licensed Landfill. The calculated soil waste stream is approximately 1,409 yds³ or 2,114 tons.