Tallaboa Industrial Park

Removal Action Work Plan

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1.0 INTRODUCTION

On February 5, 2014, the US Environmental Protection Agency (EPA) issued the compliance order CAA-02-2014-1009 ("Order") to Homeca Recycling Center, Inc.[1] ("Respondent Homeca") and Tallaboa Industrial Park, LLC ("Respondent Tallaboa") (collectively the "Respondents") with regard to the areas where Homeca previously conducted asbestos abatement and demolition and the remainder of the area scheduled for abatement and demolition within the Tallaboa Industrial Park. In compliance with the Order, Respondents have prepared this Work Plan for approval by EPA. Homeca has been working in accordance with a Work Plan prepared in accordance with the requirements of Order. Refer to Appendix A – Facility location map and area Identification.

On May 12, 2017, the US Environmental Protection Agency (EPA) visited the Tallaboa Industrial Park, LLC (TCI) facilities to discuss the concerns brought by the US EPA On-Scene Coordinator (OSC). He was accompanied by TPI management personnel during the Site visit. Among the concerns brought by the OSC it was the presence of piping on the south side with suspect Asbestos Containing Thermal Insulation (TSI). EPA indicated that TPI must clean-up the suspected Asbestos Containing TSI that has fallen from the piping and to repair several pipe lines sections that have TSI exposed. TIP contracted the services of SAQ Environmental Engineers to conduct an asbestos survey to determine if the piping TSI and debris found under the pipe bridge contain asbestos. Samples were collected and sent to CEI Labs in North Carolina, samples results were received on June 13, 2017 and showed that the TSI and debris contain asbestos in excess of the regulatory amount of 1%. See Appendix B – Pipe bridge Asbestos Inspection Report. TIP proceeded to request proposals to conduct the clean-up and TSI repairs. A contractor was selected to conduct the work, but vandals stealing copper lines damaged the TSI from lines to remove the copper heating coils. This forced TPI to review the scope of work and it was decided to remove the insulation from the damaged piping and to conduct a clean-up of the TSI on the soil underneath the pipe bridge along the length of the damaged pipes. The contractor was requested to visit the Site and submit a new proposal for the new scope of work. By the time that the proposal was prepared it was early September. Because hurricane Irma warning the work was delayed and a few days later it was followed by hurricane Maria warnings which eventually struck the island on September 20, 2017. TPI personnel collected and placed the insulation that was scattered by the hurricane in plastic bags and stored the bags in a shed pending for the abatement project to dispose them. The hurricane caused heavy damage to the asbestos containing insulation of a large tank that it required to have contractor evaluate their proposal to include the asbestos abatement of the tank and collection and disposal of all asbestos tank insulation that fell inside the tank diked area.

[1] The Order was issued to Homeca Recycling and Demolition, Inc. which is not the legal entity that owns the Site.

On October 11, 2017, EPA conducted a visit to the Facility and continued to identify friable SACM on the ground and exposed to surface water run-off that could potentially be discharged from the Facility. In addition, EPA observed that the storage areas with unknown chemicals and compressed gas cylinders were severely impacted by Hurricane María.

On October 27, 2017, EPA issued a Federal Notification of Interest ("FNFI") under CERCLA indicating, among other things, that a release and/or threat of release of hazardous substances, pollutants, or contaminants was detected on October 11, 2017. Such release and/or threat of release consisted of friable SACM on the ground, unknown chemicals and compressed gas cylinders haphazardly stored at the Facility.

On July 2018 the EPA conducted a Site Assessment to identify if there has been a release of Asbestos Containing Materials to the environment. The collected samples inside and outside of the Site premises alongside of road 127 adjacent to fence line. A total of 45 samples were collected and 41 resulted in a concentration of greater than 1%. These results are indicative of asbestos containing material is found deposited on the soil surface. See Appendix C - EPA Asbestos Assessment Summary

The Tallaboa Industrial Park (the "Site") is located at Road 385 Km. 5.4, Tallaboa Poniente Ward, in Peñuelas, Puerto Rico. The Site is part of the former Puerto Rico Olefins Facility (the "Facility"). The Facility is approximately 10 acres in size and includes buildings, distillation towers, pipelines, boilers, tanks and piles of debris and includes the area in which Respondent Homeca has performed and will perform scrap metal removal, asbestos removal, and demolition and renovation activities under contract with Respondent Tallaboa. What remains to be abated includes remnants of suspect Regulated Asbestos Containing Materials ("RACM"). Suspected RACM may exist in the form of thermal systems insulation (TSI) and debris found on the soft and hard surfaces of the Site. A chain link security fence is installed at the perimeter of the property line. Access to the Site is provided at a locked gate off Road 127.

1.1 PURPOSE

The purpose of this Work Plan is to:

a) Develop and implement procedures to immediately control asbestos fibers emissions from debris piles and exposed friable asbestos from structures that are still standing at the TPI facility.

b) Implement procedures to clean-up metals piles scheduled for recycling.

c) Develop procedures to conduct cleanup of all soil and concrete surfaces that have been exposed to Asbestos Containing Waste (ACW).

d) Address the abatement, removal, clean-up, packaging and disposal of suspect RACM and other debris containing asbestos found at the Site.

e) Develop procedures for air monitoring at the facility perimeter and work areas.

f) Conduct a removal site evaluation to identify hazardous substances (facility wide) and assess the condition of those materials.

1.2 Background Information

Tallaboa Industrial Park hired Homeca, to conduct scrap metal removal, asbestos abatement, and demolition activities at the Site. From September 2010 until November 2013, Homeca conducted asbestos abatement activities at the Site pursuant to three (3) yearly permits granted by the Environmental Quality Board of Puerto Rico ("EQB"). Homeca assumed that all the thermal insulation found on the distillation towers, steam lines, boilers and pipe lines was asbestos containing material (ACM) and these materials were removed and disposed of as ACM. On November 27, 2013, EPA issued a Field Notice of Federal Interest (FNFI) under CERCLA. The FNFI requested, among other things, that Respondents cease all demolition and related activities that could potentially result in the migration of asbestos fibers into the environment while it continued its investigation. On February 5, 2014 EPA issued the compliance order CAA-02-2014-1009 that requires, among other things, the preparation of an Asbestos Abatement Work Plan. Homeca has been implementing the Asbestos Abatement Work since then. The Work Plan has been made part of this Asbestos Removal Response Action Plan.

1.3 Assumptions

a) Because the Site was constructed prior 1980 it is assumed that all thermal insulation present on equipment (towers, pipes, tanks, etc.) contain asbestos.

b) All thermal insulation pieces found deposited on the concrete surfaces and soils are assumed to contain asbestos.

c) All thermal insulation is considered friable asbestos containing material and it is defined as Regulated Asbestos Containing Material (RACM) by Asbestos NESHAP regulations.

d) Thermal insulation residues found on metal piles it is assumed to be asbestos containing insulation.

e) All non-metal debris deposited on the ground is considered as asbestos contaminated material to be discarded as ACW.

2.0 PHASE I: ASBESTOS SITE CLEAN-UP

2.1 General Requirements

a) All site activities will be conducted in compliance with federal and territory laws and regulations (NESHAP, OSHA, DOL, RCRA and CERCLA).

b) The Site will always have security provided by guards.

c) Only authorized personnel will be allowed access to the Work Areas. The Work Area perimeter will always be identified and patrolled to ensure that unauthorized personnel do not enter the area.

d) All employees and contractors will comply with all applicable occupational regulations and best management practices.

e) All work will be conducted by Homeca Recycling.

f) Personal Air monitoring activities will be conducted by Altol Environmental.

g) Clearance sampling and Perimeter Air Monitoring will be the responsibility of SAQ Environmental Engineers. Perimeter monitoring will be conducted by SAQ Environmental. The action level for air borne fibers at the area monitors will be 0.01 f/cc. All samples will be analyzed at a maximum interval of 24-hours using Phase Contrast Microscopy (PCM) (EPA would like to see 12-hour sampling). Any air sampling result from PCM exceeding the action level of 0.01 f/cc for total fibers shall be analyzed by transmission electron microscopy (TEM).

h) At the end of Phase I, a partial report will be submitted to the EPA OSC and his approval will be required to continue with Phase II.

2..2 Site Cleanup Procedures

a) No work will start until the Survey and Asbestos Inspection Report have been completed, evaluated by the Asbestos Project Designer completed and the findings discussed with EPA. Refer to Appendix B – Pipe Bridge Inspection and Appendix D – Asbestos Inspection Report by Best Environmental.

b) Work Area will be continuously wetted in accordance to NESHAP applicable regulations. Continuous recordkeeping will be maintained

to assure that wetting is executed continuously.

c) Entrance and exit to and from the Work Area will be through the Decontamination Unit. The decontamination unit will be maintained throughout the entire clean-up and abatement process in accordance with the requirements of 29 CFR 1926.1101. Refer to Appendix D – Decontamination Units Location Map.

d) Decontamination Unit for vehicles will be established for the project and located at the exit of the Work Area, with adequate signs for the entrance and exit of vehicles. The spraying down of the trucks, with emphasis on the tires, will be completed for all vehicles leaving the facility. The cleanup water will be filtered and containerized as described for the rest of the project. Refer to Appendix E – Decontamination Units Location Map.

e) Air monitoring of the work area and around the perimeter fence of the work area shall be conducted throughout the abatement operation during working hours. Air sampling monitors will be placed strategically in areas relative to the work activity being conducted. But fix stations will be placed during the entire work duration (one east, three south, one west and three north of fence line. An upwind monitor shall also be operated to establish a baseline. Data, described in section 2.1g, will be reported, daily via email, to the EPA OSC. Refer to Appendix F - Area Air Monitoring Units Location map.

f) A complete visual inspection across the Facility will be conducted to identify and collect ACM or SACM on the ground. All material will be disposed as ACW. This shall be the first item to be addressed during Phase I.

g) Areas to be the immediate subject of decontamination shall be wetted with amended water. Wetted vegetation shall be cut by string trimmers and removed from the remediation area and disposed as ACM. The purpose of removing the vegetation is to allow a view of the soil surface for visual inspection of the presence of bulk ACM. Upon completion of vegetation removal, the contractor shall lay out a grid system which breaks the site down into work areas not greater than 50’ by 50’. The grid system shall be marked on the Site with paint, flags or posts and shall remain in a maintained and serviceable condition until a final visual inspection reveals that decontamination has been successfully completed within the demarcated grid.

h) All areas shall be visually inspected by the Contractor's AHERA accredited Supervisor (Competent Person), the Owner's Certified Asbestos Project Coordinator (Project Inspector hired by owner) and the EPA representative to identify the location where the presence of

i) Upon completion of the decontamination of each grid, the Contractor's Supervisor shall visually inspect the grid and shall certify that the area is free of visible ACM. A re-cleaning of the area shall be conducted upon discovery, by the Supervisor or other Facility representatives, of additional ACM. The cleaning shall continue until no visible suspect ACM remains. After the contractor visually inspects the grid and determines that the grid is free of ACM, the Project Coordinator together with the EPA's Representative shall then inspect the grid and verify that the area is ACM free

j) The old Olefins plant will be divided into sections beginning from the fence next to Road 127 to the Procaribe fence. The size of these sections will be not greater than 50' by 50'. The grid system shall be marked on the Facility with paint, flags or posts and shall remain in a maintained and serviceable condition until a final visual inspection reveals that decontamination has been successfully completed within the demarcated grid.

k) Demolition procedure will be described in Section 4.0 of this document.

l) The ACM collected after Hurricane María, from Procaribe, by Facility personnel and placed inside a shed will be placed inside Asbestos labeled bags to be disposed as ACM. The shed is surrounded by piles of debris and soil containing various materials, including ACM. These piles of debris and soil shall be disposed as ACW.

m) The drainage ditches will be visually inspected. Any ACM or SACM will be collected and placed in asbestos bags for disposal as ACM.

n) All scrap metal or other material present in Facility, that will be sent off-Site, shall be wet cleaned until it is visually free of any suspect ACM. The designated metal cleanup area will have a container to collect the wash water. Water used to clean the metal will be filtered using 5-micron filters and placed in drums for disposal. Filters will be disposed as ACM.

o) All the metal must be sprayed with encapsulant prior to off-site shipment for recycling.

p) Any loose metals found will be collected, cleaned and sent for recycling.

q) Any other material removed from the metals will also be disposed as ACM.

r) ACM will be placed in asbestos labeled bags and/or containers and disposed as asbestos containing materials). Access by vehicles must

be avoided to the extent as possible, to prevent asbestos disturbance.

s) Waste shipment manifests shall be prepared for all RACWM containers in compliance with 40 CFR 61.150.

3.0 PHASE II: ABATEMENT WORK PLAN

3.1 General Requirements

a) All site activities will be conducted in compliance with federal and territory laws and regulations (NESHAP, OSHA, DOL, RCRA and CERCLA).

b) The Site will always have security provided by guards.

c) Only authorized personnel will be allowed access to the Site. The area perimeter will always be identified and patrolled to ensure that unauthorized personnel do not enter the area.

d) All employees and contractors will comply with all applicable occupational regulations and best management practices.

e) All work will be conducted by Homeca Recycling.

f) Personal Air monitoring activities will be conducted by Altol Environmental.

g) Perimeter monitoring will be conducted by SAQ Environmental. Perimeter monitoring will be conducted by SAQ Environmental. The action level for air borne fibers at the area monitors will be 0.01 f/cc. All samples will be analyzed at a maximum interval of 24-hours using Phase Contrast Microscopy (PCM) (EPA would like to see 12-hour sampling). Any air sampling result from PCM exceeding the action level of 0.01 f/cc for total fibers shall be analyzed by transmission electron microscopy (TEM).

h) The areas where abatement is to be performed are identified in Appendix G - Asbestos Abatement Structures Location Map and Photos.

i) At the end of Phase II, a partial report will be submitted to the EPA OSC and his approval will be required to continue with Phase III.

3.2 Thermal Systems Insulation Removal from Existing Structures

3.2.1 Towers, bricks and tanks

a) Upon completion of Phase I, the contractor will proceed with the removal and disposal of existing TSI from the towers, furnaces and

tanks that have insulation exposed or present a threat for release. All other towers that have its metal jacket in good condition will have the insulation removed after CERCLA activities are completed. The work on these towers will be conducted under NESHAP and EQB regulations.

b) Each remaining tower will be treated as a separate work area. All work shall be conducted according to this Work Plan. A negative pressure enclosure will be built around the component. The enclosure will be equipped with sufficient negative air machines to obtain a negative pressure of -0.02 inches of water. A gage will be available to confirm pressure. Refer to Appendix G – Asbestos Abatement Structures Location Map and Photos and Appendix H - Negative Enclosure Example.

c) Steps will be implemented to ensure that ACM is not dropped to the ground during the abatement of the towers. No chutes will be used. The towers will be abated starting from the top to the bottom in section. The ACM will be wetted and sealed in bags within the specific section and lowered manually down the scaffolding by the workers.

d) There is one large tower, for which the above-mentioned enclosure cannot be constructed. For this tower several negative pressure enclosures will be constructed in sections. The enclosure will be equipped with sufficient negative air machines to obtain a negative pressure of -0.02 inches of water. A gage will be available to confirm pressure. Refer to Appendix G – Asbestos Abatement Structures Location Map and Photos.

e) When the container is full, a manifest will be prepared, and the container will be shipped to the approved off-site disposal site.

f) Refractory bricks in the furnaces will be disposed as ACM. Refer to Appendix G – Asbestos Abatement Structures Location Map and Photos

g) The piping systems will be divided in manageable sections. Each section will be treated as a separate work area. A negative pressure enclosure will be built around the section. The enclosure will be equipped with sufficient negative air machines to obtain a negative pressure of -0.02 inches of water. A gage will be available to confirm pressure. As an alternative the contractor could utilized glove bags to remove the TSI. Refer to Appendix H - Negative Enclosure Example.

h) There is a tank for which the above-mentioned enclosure cannot

be constructed. For this tank several negative pressure enclosures will be constructed in several sections. The tank abatement will be conducted from the top down. Refer to Appendix G – Asbestos Abatement Structures Location Map and Photos

i) All TSI removed will be maintained wetted and placed in labeled 6 mils polyethylene double bags and placed in a closed container.

j) When the container is full, a manifest will be prepared, and the container will be shipped to an approved off-site disposal facility.

k) When the removal is completed, and the component's surface is cleaned and sprayed with encapsulant then the entire enclosure will be inspected by the Project Coordinator or its representative, and if found cleaned, air samples will be collected and analyzed by Phase Contrast Microscopy (PCM). If the PCM result is equal or less than 0.005 f/cc, then the enclosure will be declared free of asbestos contamination. If not, the enclosure will have to be cleaned again. Once air samples are below 0.005 f/cc, the enclosure will be removed, and the work will continue in the next section.

l) All ACM removed will be maintained wetted and placed in labeled 6 mils polyethylene double bags and placed in a closed container, except for the refractory bricks which will be disposed in bulk, covered with a liner. The containers will be labeled as required by DOT 49 C.F.R. § 172 regulation.

3.2.1 Piping Bridge and tanks

a) The Pipe Bridge will be divided in three sections with first section starting next to the maintenance shop to the end of the tank farm, the second section will be along the tank farm west side and the third starting at the tank farm along the road all the way to the Procaribe fence. The sections shall be marked with paint, flags or posts and shall remain in a maintained and serviceable condition until a final visual inspection reveals that decontamination has been successfully completed within the demarcated section.

b) Each section will be treated as a separate work area. A negative pressure enclosure will be built around the section. The enclosure will be equipped with sufficient negative air machines to obtain a negative pressure of -0.02 inches of water. As an alternative the contractor could utilized glove bags to remove the TSI.

c) All TSI removed will be maintained wetted and placed in labeled 6 mils polyethylene double bags and placed in a closed container.

d) When the container is full, a manifest will be prepared, and the container will be shipped to an approved Waste disposal site.

e) When the removal is completed, and the component's surface cleaned and sprayed with encapsulant then the entire enclosure will be inspected by the Project Coordinator or its representative, and if found cleaned, air samples will be collected and analyzed by Phase Contrast Microscopy (PCM). If the PCM result is equal or less than 0.005 f/cc, then the enclosure will be declared free of asbestos contamination. If not, the enclosure will have to be cleaned again. Once air samples are below 0.005 f/cc, the enclosure will be removed, and the work will continue in the next section.

4.0 PHASE III: DEMOLITION

4.1 General Requirements

a) All site activities will be conducted in compliance with federal and territory laws and regulations (NESHAP, OSHA, DOL, RCRA and CERCLA).

b) The Site will always have security provided by guards.

c) Only authorized personnel will be allowed access to the Site. The area perimeter will always be identified and patrolled to ensure that unauthorized personnel do not enter the area.

d) All employees and contractors will comply with all applicable occupational regulations and best management practices.

e) All work will be conducted by Homeca Recycling.

f) Personal Air monitoring activities will be conducted by Altol Environmental.

g) Perimeter monitoring will be conducted by SAQ Environmental. Perimeter monitoring will be conducted by SAQ Environmental. The action level for air borne fibers at the area monitors will be 0.01 f/cc. All samples will be analyzed at a maximum interval of 24-hours using Phase Contrast Microscopy (PCM) (EPA would like to see 12-hour sampling). Any air sampling result from PCM exceeding the action level of 0.01 f/cc for total fibers shall be analyzed by transmission electron microscopy (TEM).

h) Structures that will be demolished are identified in Appendix I - Location map of structures to be demolished.

i) Dust control shall always be implemented during demolition activities.

j) Contactor shall prevent the free-fall of heavy metal structures during demolition to prevent dust generation.

k) Water product of the clean-up activities shall be sampled prior disposal.

l) Filters must be disposed as ACM.

m) All the metal must be sprayed with encapsulant prior to off-site shipment for recycling.

n) Metal to be recycled must be inspected by EPA prior off-site shipment.

o) At the end of Phase III, a partial report will be submitted to the EPA OSC and his approval will be required to continue with Phase IV.

5.0 PHASE IV: SOIL REMOVAL, REPLACEMENT AND CONCRETE SURFACES CLEANUP

5.1 General Requirements

a) All site activities will be conducted in compliance with federal and territory laws and regulations (NESHAP, OSHA, DOL, RCRA and CERCLA).

b) The Site will always have security provided by guards.

c) Only authorized personnel will be allowed access to the Site. The area perimeter will always be identified and patrolled to ensure that unauthorized personnel do not enter the area.

d) All employees and contractors will comply with all applicable occupational regulations and best management practices.

e) All work will be conducted by Homeca Recycling.

f) Personal air monitoring activities will be conducted by Altol Environmental.

g) Perimeter monitoring will be conducted by SAQ Environmental. The action level for air borne fibers at the area monitors will be 0.01 f/cc. All samples will be analyzed at a maximum interval of 24-hours using Phase Contrast Microscopy (PCM) (EPA would like to see 12-hour sampling). Any air sampling result from PCM exceeding the action

level of 0.01 f/cc for total fibers shall be analyzed by transmission electron microscopy (TEM).

h) Prepare an equipment and tools decontamination area. All equipment and tools must be washed before leaving the work area.

i) No dry sweeping will be allowed within the concrete slabs and dikes.

j) Concrete dikes and channels shall be inspected for ACM.

k) During removal, wet the soil using a water hose equipped with a fine sprayer.

l) Place the removed soil in appropriate containers to be shipped to an approved offsite facility.

m) Refer to Appendix J for Soil removal, replacement and concrete surface cleanup procedures.

6.0 PHASE V: MITIGATION

6.1 General Requirements

a) All site activities will be conducted in compliance with federal and territory laws and regulations (NESHAP, OSHA, DOL, RCRA and CERCLA).

b) The Site will always have security provided by guards.

c) Only authorized personnel will be allowed access to the Work Areas. The Work Area perimeter will always be identified and patrolled to ensure that unauthorized personnel do not enter the area.

d) All employees and contractors will comply with all applicable occupational regulations and best management practices.

e) Air monitoring will be conducted to determine PPE Level at each Work Area.

f) Liquids, sludges, and/or residues containing CERCLA hazardous substances, pollutants or contaminants that are present within aboveground storage tanks, process vessels, piping, pits, drums, containers and sumps shall be characterized, removed, and disposed. A report will be submitted to EPA containing all the data generated during this assessment.

g) Complete evaluation, inventory, segregation and disposal of compress gas tanks and cylinders found across the Facility.

h) At the end of Phase V, a partial report containing all the manifest and recycling records will be submitted to the EPA OSC.

7.0 SIGNS AND LABELS

Prior to begin the abatement activities described in this Plan, the contractor will secure and affix the signs and labels described below. Signs will remain in place until the work is complete and all clearance samples received, and the area certified as clean and decontaminated by the Project Coordinator.

- Provide warning signs and barrier tapes at all approaches to asbestos Work Areas. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required before entering the area.

- Provide danger signs (both in English and Spanish) in vertical format conforming to 29 CFR 1926.1101, minimum 20" x 14" displaying the following legend.

DANGER
ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHINGARE REQUIRED IN THIS AREA

- Provide 3" wide yellow barrier tape printed with black lettered, "DANGER ASBESTOS REMOVAL". Locate barrier tape across all entrances and access routes to the asbestos Work Area. Install tape 3' to 4' above work surface.

- Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris and other products contaminated with asbestos.

- Provide asbestos danger labels of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS AVOID CREATING DUSTCANCER AND LUNG DISEASE HAZARD

- Provide the following asbestos labels, of sufficient size to be clearly legible, for display on waste containers (bags or drums) which will be used to transport asbestos contaminated material in accordance with United States Department of Transportation 49 CFR Parts 171 and 172:

RQ HAZARDOUS SUBSTANCE SOLID, NOS
ORM-E, NA 9188
ASBESTOS

- Generator identification information shall be affixed to each waste container indicating the following printed in indelible ink:

    - Generator Name
    - Facility Name
    - Facility Address

7.0 PERSONAL PROTECTION

A Site-Specific Health and Safety Plan (HASP) will be developed as a separate deliverable.

8.0 QUALITY ASSURANCE PROJECT PLAN

A Site-Specific Quality Assurance Project Plan (QAPP) will be developed as a separate deliverable.

9.0 WORK SCHEDULE

The work schedule for all the activities described in this work plan is found on Appendix K.

10.0 PREPARATION OF THE WORK PLAN

The work plan was drafted and prepared by Mr. Samuel Quiñones, P.E, whose Project Designer Certification and Engineer License is included in Appendix L.

Samuel Quiñones, P.E
Asbestos Project Designer

APPENDIX J

SOIL REMOVAL, REPLACEMENT AND CONCRETE SURFACES CLEANUP PROCEDURE.

SOIL REMOVAL, REPLACEMENT AND CONCRETE SURFACES CLEANUP PROCEDURE.

Asbestos has been released into the environment, namely onto hard surfaces, such as parking lots and infrastructure pads, and to soil surfaces, such as internal roads and grassy areas, through weathering of asbestos-containing material (ACM) (i.e., insulation materials) covering tanks, piping, furnances and other infrastructure and direct deposition of ACM materials on the same surfaces. Given the depositional nature of the asbestos release, it is anticiapted that the asbestos fibers would be isolated in the top 2 inches of the soil.

Decision Unit

The approach for remediating the hard surfaces and soils at the Facility will be based upon pre-determined decision units, also known as Contaminant Zones within EPA's lead guidance[1]. Decisions units will be determined using information collected during the ACM removal and infrastructure removal phases. Information will be collected for the areas that do not contain hard surfaces (i.e., grassy/soil areas and internal roads) to establish a preset inventory of soil volumes and cost estimtes for removal and disposal. This information, combined with the data on where ACM was located in greater quanties, will be used to establish decision units that will be utilized for the sampling and removal assessment. A grided system will be incorporated within each decision unit and systematic samples will be collected and composited to obtain a sample result for each decision unit. The number of composite samples, and the number of aliquots within each composite sample, will be decided once the number and size of the decision units are determined. This approach is supported by the Interstate Technical Regulatory Council (ITRC) in their multincremenatal sampling guidance[2]. The ITRC guidance states:

> *There are various approaches to defining DUs. The approach selected should be consistent with the understanding of the site reflected in the CSM and should support the objectives of the investigation. DUs may be defined in regularly spaced and equal volumes as established by exposure areas, or they may be based on irregular features of the site which define contaminant transport or receptor exposure. Alternatively, DUs may be based on an understanding of the contaminant distributions, for example, in and around source areas. Volumes of soil known or suspected to be contaminated are generally good candidates for designation as DUs because the decision over these volumes is best made separately from less-contaminated surrounding volumes. Human health or ecological exposure areas may provide the basis for the designation of DUs. This approach has the advantage that it is conceptually supported by the exposure assumptions used to derive most action levels. DUs may also be based on the needs of remediation or excavation. For example, landfill construction or other remedial approaches may dictate the*

[1] USEPA. 2003. Superfund Lead-Contaminated Residential Sites Handbook. OSWER 9285.7-50.
[2] https://www.itrcweb.org/ism-1/3_3_1_Defining_Decision_Units.html

dimensions of the DU. Sidewalls and floors of excavations may be designated as DUs to determine whether soil removal was sufficient.

Selection of DUs should also consider the geologic aspects of the CSM. If the boundaries between different geologic formations are important for contaminant transport or exposure, they may provide a logical demarcation of the DU. In some cases a DU may extend across more than one geologic formation or soil type, but in other situations basing DU boundaries on the geological boundaries may make more sense. Background studies may particularly require consideration of geological conditions. (from https://www.itrcweb.org/ism-1/3_3_1_Defining_Decision_Units.html)

As described above, the usefulness of decision units is that a representavie sample can be used to evalute the removal decision for a specific area (i.e., the decision unit) without additional delineation. Decision criteria is established early in the process, as well as known costs, allowing removal actions to proceed at a faster pace and conserving resources, while allowing a standardized health-protective action to be completed. If the representive sample that is collected from the decision unit exceeds the decision criteria, the entire decision unit is addressed as a single area. For example, if a site is represented by ten decision units and the representative sampling identifies four decision units with concentrations above the decsion criteria, then four of the ten areas would be addressed.

A different approach will be followed for hard surfaces based on different removal alternatives for this media. The approach is outlined below.

Areas where samples collected during EPA's assessment on July 2018 showed asbestos above cleanup criteria, excavation and post excavation sampling must be conducted.

I. SOIL

Areas where samples collected during EPA's assessment on July 2018 showed asbestos above cleanup criteria, excavation and post excavation sampling must be conducted.

Sample Collection
Composite samples should consist of discrete aliquots of equal amounts of soil collected from 0-2 inches. The soil from each aliquot should be collected into one clean container, such as a stainless-steel bowl or plastic bag, and thoroughly mixed. After mixing, the sample can will be sent to the laboratory for analysis. Remaining sample volume will then be archived. *Note: the number of composite samples per decision unit and the number of aliquots in each composite sample will be determined at a future date.*

Sample Analysis
Soil samples will be analyzed using CARB 435 with polarized-light microscopy (PLM) using a 400 point counting protocol, which will provide a reporting limit of 0.25% asbestos.

Decision Criteria
There are three valid results for the analytical method identified above: a non-detect value of 0.25%, a trace value of 0.25%, and a detected value with a specific value above 0.25%. For this project, at value of trace or a detected above 0.25% will result in the decision unit being identified for removal action. A value of non-detect for the decision unit will result in the decision unit not being identified for a removal action.

Removal Action
Removal actions may include, but not be limited to:

a) Soil excvation to a depth of 6 inches, with confirmatory sampling and placement of clean fill for non-dectect confirmatory sample results.
b) Soil excavation to a depth of 6 inches, with confirmatory sampling and placement of a demarcation barrier and clean fill for trace confirmatory sample results.
c) Soil excavation to a depth of 6 inches, with confirmatory sampling and excavation of an addiitonal removal to a depth of 12 inches and placement of clean fill for detected results above 0.25% in the confirmatory sample results.

II. HARD SURFACES

Sample Collection
Given that the preferred action for hard surfaces consists of pressure washing the surface, followed by sealing the surface to encapsulate any remaining asbestos fibers, no sampling will be required of the hard surfaces.

Sample Analysis
No analysis is recommended for the hard surface evaluation.

Decision Criteria
All hard surfaces will undergo pressure washing and sealing.

Removal Action
Removal actions may include, but not be limited to:

a) Pressure washing hard surfaces, capture and treatment of water, removal of any soil impacted by the water runoff with replacement with clean fill, and sealing hard surface