I. Background

The scope of work (SOW) for the former AZC Smelter / Townsite Soil Area (TSA) includes the following:

- Community outreach, as specified in Section II, to inform property owners of the opportunity to have their property sampled and, if necessary, cleaned up;
- Sampling and analysis, as specified in Section III, of those properties for which access is obtained to determine if average concentrations of arsenic, cadmium, or lead, hereinafter referred to as the Target Constituents (TCs), exceed the levels specified in Section V.A.4, hereinafter referred to as Cleanup Levels;
- Evaluation and expansion if necessary, of the TSA Site Boundary as specified in Section IV; and
- Cleanup and disposal, as specified in Section V, of soil on those portions of properties for which access for cleanup is obtained that are determined by the sampling and analysis to have soil concentrations exceeding one or more of the TC Cleanup Levels.

II. Community Outreach and Access Agreements

The objective of the community outreach is to inform owners of eligible[1] property located within the Site Boundary of the opportunity to have their property sampled, obtain access agreements for sampling, and (if applicable) access agreements for cleanup. Granting of access for either sampling or cleanup will be voluntary by the property owner. Cyprus may also require permission for access by a tenant if the property is not occupied by the owner.

A. Sampling Access

Cyprus may, at its sole discretion, establish a deadline for acceptance of sampling access agreements provided that the deadline is no earlier than 90 days after the date of the direct mailing required by Section II.A.1.

Cyprus will perform the following activities to accomplish the objective of the community outreach activities.

1. One direct mailing to all property owner's of record based on parcel tax records as of the effective date of this order that includes the following information:

   - Contact information for Cyprus or its representative,
   - Summary information about the sampling program,

[1] Eligible properties are those properties or portions thereof that have been developed (e.g., cleared, graded, etc.) for residential or non-residential use (defined in Sections III.A.1 and III.A.2). Developed areas do not include naturally wooded or heavily vegetated areas where routine access or use of the property does not occur

- Notifying the property owner that the sampling will be performed by Cyprus at no expense to the property owner,
- Information on how to request sampling,
- Any deadlines for submission of access agreements with any such deadline being no sooner than 90 days after the date of the direct mailing, and
- Information to facilitate submission of an access agreement for the sampling.

2. If after transmittal of the information specified in Section II.A.1, the property owner does not either provide access or an explicit denial of access for sampling, Cyprus will make one additional attempt to contact the property owner either by mail, telephone, email, or personal visit requesting access.

B. Cleanup Access

Once a property or portion of a property is determined to exceed a Cleanup Level, Cyprus will perform the following activities in attempting to obtain access for cleanup of that property from the property owner:

1. Transmit the following information, either by mail or personal contact, to the property owner of record based on parcel tax records as of the effective date of this order:

- Contact information for Cyprus or its representative,
- Summary of the sampling results
- Notification that based on a comparison of the TC concentrations with the Cleanup Levels, cleanup is recommended
- Summary information about the cleanup program,
- Notifying the property owner that the cleanup will be performed by Cyprus at no expense to the property owner, and
- Information to facilitate submission of an access agreement for the cleanup.

2. If after transmittal of the information specified in Section II.B.1 the property owner does not either provide access or an explicit denial of access for cleanup, Cyprus will make up to three additional attempts to contact the property owner either by mail, telephone, email, or personal visit requesting access until either cleanup access or an explicit denial of access is obtained.

3. Cyprus will notify PADEP of the property location and owner of any property for which access is either denied or the owner is unresponsive to Cyprus' attempts to obtain access.

C. Communication where Cleanup Levels are not exceeded

Cyprus will provide the following information by mail to owners of those properties where sampling and analysis indicated that Cleanup Levels are not exceeded:

- Contact information for Cyprus or its representative,

- Summary of the concentrations of the TCs for each sample analyzed and the Sample Area (SA) represented by that sample
- Notification that, based on a comparison of the TC concentrations with the Cleanup Levels, cleanup is not necessary

III. Sampling and Analysis

Cyprus will sample all eligible properties within the Site Boundary for which sampling access is obtained pursuant to Section II. Sampling and analysis will be performed as described within this Section III unless otherwise approved by PADEP:

A. Property Areas to be Sampled

The accessible[2] portion of each property will be sub-divided into separate SAs and the average soil concentration of the TCs will be determined within each SA using composite samples as specified in Section III.B. Property use categories and the determination of SAs within each category are described within the remainder of this sub-section A.

1. Residential

For purposes of sampling and application of the TC Cleanup Levels, Residential properties will include properties which have the following use or zoning:

- Single and multifamily residences,
- Vacant lots that are zoned residential,
- Discrete portions of an agricultural property that is in residential use,
- Houses of worship,
- Community centers,
- Child care facilities,
- Schools,
- Public recreational including ball fields, playgrounds, etc., and
- Vacant lots that are zoned commercial and located adjacent to a property that is in one of the uses referenced in the foregoing.

A Residential property yard is defined as extending to the further of the property line, the edge of an adjoining street alleyway, or the top edge of a drainage ditch or creek. Generally, a street curb or, in the absence of curb, the edge of the pavement will define the edge of the street or alleyway. Utility easements and right-of-ways not owned by the property owner that serve as part of one of the SAs defined below will either be sampled as part of the SA or, depending on the configuration and the desire of the owner, as a separate SA (e.g., a street right-of-

[2] For purposes of sampling, accessible areas are those that represent a potential for direct contact with surface soil that is bare or covered by grass or gravel. Accessible areas do not include paved or impervious areas or the area underneath stationary structures.

way within a given block). In either case, sampling of the utility easement or right-of-way will be dependent upon obtaining sampling access from the owner of that area.

Residential properties will be divided into separate SAs as follows:

- Front yard and back yards will each be sampled as a separate SA provided that each yard area is at least 10 feet in width measured from the drip line to the closest property boundary. If either the front or back yard is less than 10 feet in width, that yard area will be sampled as part of the larger yard area SA.
- Individual side yards will each be sampled as a separate SA provided that the side yard is at least 15 feet wide from the drip line to the closest property boundary. If a given side yard is less than 15 feet in width, that yard area will be sampled as part of either the front or back yard SA.
- A gravel or earthen driveway will be sampled as a single SA.
- Any individual SA identified in the foregoing that exceeds 3,600 square feet (SF) but is less than one acre in size will be subdivided into approximate equal size SAs such that no individual SA exceeds 3,600 SF.
- Individual SAs larger than one acre will be sampled as described in Section III.A.4.

2. Non-residential

For purposes of sampling and application of the TC Cleanup Levels, Non-residential properties will include properties that have a use, except for industrial, other than Residential (as defined in Section II.A.1 of this Section) and vacant lots not located adjacent to a Residential use property that are zoned for commercial use.

A Non-residential property SA is defined as the accessible portion of the property that extends to the further of the property line, the edge of an adjoining street or alleyway, or the top edge of the drainage ditch or creek. Generally, a street curb, or in the absence of curb, the edge of the pavement will define the edge of the street or alleyway. Utility easements and right-of-ways associated with the property that are not owned by the property owner, but are part of the accessible portion of the Non-residential SA to be sampled, will either be sampled as part of the Non-residential SA or, depending on the configuration, as a separate SA (e.g., a street right-of-way within a given block). In either case, sampling of the utility easement or right-of-way will be dependent upon obtaining sampling access from the owner of that area.

Any individual Non-residential SA that exceeds 5,000 SF but is less than one acre in size will be subdivided into approximate equal size SAs such that no individual SA exceeds 5,000 SF.

Individual SAs larger than one acre will be sampled as described in Section III.A.4.

3. Alleyways

Unpaved alleyways adjoining Residential and Non-residential property will be sampled as outlined within this section. The approach to sampling will depend on whether access has to be obtained from individual property owners or a single governmental entity. Depending on the access scenario, the sample locations for the alleyway will be determined as follows:

- Alleyway is sampled on an individual property basis:

  The length and width of the alleyway adjoining the property being sampled will be measured to determine the alleyway SA. If access has been granted by both adjacent property owners, the full width of the alleyway will be used; otherwise, the width will be determined to the middle of the alleyway.

- Alleyway is sampled on a block basis:

  The full length and width of the alleyway for the block (i.e., from street to street) will be measured to determine the SA.

Any individual alleyway SA that exceeds 3,600 SF in a Residential area or 5,000 SF in a Non-residential area but is less than one acre in size will be subdivided into approximate equal size SAs such that no individual SA in Residential areas exceeds 3,600 SF or 5,000 SF in Non-residential areas.

4. Large Residential and Non-residential Areas

If an individual SA as defined in A.1 through A.3 of this Section is larger than one acre, that SA will be divided into sub-areas (grids) that are approximately equal in size but no larger than 3,600 SF. for Residential or 5,000 SF for Non-residential. The larger count of 12 grids or 25 percent of the total number of grids will then be selected as individual SAs using a random start systematic sampling approach as follows:

- The first grid (i.e. SA) will be selected randomly
- Then sampling will proceed by stepping out to every other grid from the first grid with the grids in alternating rows being shifted one grid.
- A composite sample will then be obtained from each of the selected grids for each depth interval following the procedures specified in Section II.B. If the concentration of one or more of the TCs in a composite sample from a given grid is above the applicable Cleanup Level for that property's land use, then each of the four adjacent grids will also be sampled.
- The data obtained from the sampled grids will then be used to predict the probability of any given un-sampled grid having an average metals concentration that would exceed the Cleanup Level as follows:
  - The data from the sampled grids will be modeled using geospatial statistics.

- The statistical model will then be used to determine the probability that the average concentrations of each TC within each of the un-sampled grids would exceed the Cleanup Level.
- If the probability is estimated to be greater than five percent that the Cleanup Levels would be exceeded in a given un-sampled grid, a composite sample from that grid will be obtained and analyzed.

- This process will continue until each grid has either been sampled or determined to have a five percent or less probability of an exceedance.

5. Agricultural Properties

If an owner of an agricultural property has specific knowledge of the use of smelter material as fill within that property then a visual inspection of such areas will be performed with the property owner. If smelter material is observed, composite soil samples will be collected from these visually identified areas in accordance with B.1. of this Section. Any soil samples taken will be analyzed for comparison with the Residential Cleanup Levels.

6. Other Requirements for Sampling Locations

The purpose of the sampling is to determine the concentrations of metals in soil areas that could potentially be related to the smelter. Therefore, sample locations (whether for a composite aliquot or a discrete sample) will be selected to avoid the potential impact from other sources of metals including: lead-based paints, lead-contaminated vehicle fluids, or prior emissions from leaded gasoline. The following guidelines will be used to implement these criteria:

- Sample locations will be selected no closer than five feet from existing structures (and at least three feet from the drip zone) to minimize any potential influence of lead-based paint.
- Sample locations will be selected no closer than 10 feet from existing roads and paved parking lots to minimize potential influence of lead from fuels, oils, and vehicle emissions. In addition, sample locations will be a minimum of three feet from driveways.
- Soil samples will not be collected in areas visually observed to be impacted by oil or other petroleum products.
- Soil sampling locations will be no closer than three feet from in-yard garbage/compost piles, vehicles in repair or abandoned, or other "junked" items.
- Soil samples will not be collected from within drainage ditches and creeks.

B. Sample Collection

1. Composite Samples

A separate composite sample from each depth interval specified in B.3 of this Section will be taken within each SA. Each composite sample will be obtained as follows:

- By combining equal volumes of sub-samples (or aliquots) taken at a frequency of one aliquot for each 400 SF of SA with a minimum of five aliquots per composite sample.
- The aliquot locations will be located visually to result in an approximate equal spacing of the aliquots within the SA; however, the aliquot locations may be adjusted as necessary to avoid those areas identified in A.6 of this Section or facilitate the sampling of soil associated with visually identified smelter material as described later within this sub-section.
- Any grass or sod at an aliquot location will be removed prior to taking the aliquot and loose soil will be shaken from the roots and added to the aliquot sample container.
- If visually identifiable smelter material is present within a SA in a localized contiguous sub-area that is greater than 100 SF, then a minimum of one of the composite soil sample aliquots will be located within the sub-area. If the contiguous sub-area is greater than 20 percent of the entire SA area, additional soil aliquots from the composite sample for that SA will be located within the sub-area in proportion to the size of the sub-area relative to the size of the SA.

2. Discrete Samples

In addition to the composite samples, individual discrete samples will be taken from the following sub-area within a SA:

- A bare soil play areas (e.g., under swing sets),
- When a sample from either of the two upper intervals of the bare soil play area exceeds the remediation levels, additional discrete samples will be collected to establish the vertical (as described in Section III.B.3, as well as horizontal extent, of affected soil.

3. Depth Intervals

Each sample (whether it is an aliquot for a composite sample or a discrete sample) will be obtained from the following depth intervals below ground surface (bgs).

Sample Depth Intervals (Inches bgs)		
Residential	**Non-residential**	**Purpose**
0 to 3	0 to 6	These two depth intervals will be obtained at each sample location to determine if cleanup is needed.
6 to 12	6 to 12	
12 to 18	12 to 18	If the 6" to 12" sample indicates that cleanup is needed, the TC concentrations in the lower intervals will be analyzed sequentially to determine the depth of excavation (i.e. the depth necessary to achieve the Cleanup Levels). These samples may be obtained either when the uppermost intervals are sampled or in follow-up sampling
18 to 24	18 to 24	

C. Submittal of a Sampling Work Plan and Quality Assurance Plan.

Cyprus will submit a Sampling and Analysis Work Plan and a Quality Assurance Plan.

1. The Sampling and Analysis Work Plan will specify procedures or criteria for:

   - Project organization,
   - Collection and homogenization of composite aliquots,
   - Collection of discrete samples,
   - Sample identification and management including containers, preservatives, holding times, shipping, and chain of custody,
   - Documentation of sampling activities,
   - Decontamination of sampling equipment and management of decontamination fluids, and
   - Final report.

2. The Quality Assurance Plan will specify procedures or criteria for:

   - Project organization,
   - Data quality objectives,
   - Analytical methods,
   - Calibration and maintenance of instruments;
   - Laboratory and field quality control and quality assurance for sampling and cleanup activities

- Procedures for management and preservation of data,
- Data validation and usability, and
- Identification of the PADEP certified laboratory.

IV. Evaluation and Expansion, if necessary, of the Site Boundary

The Site Boundary (Exhibit B to the COA) delineates the area where soil TC concentrations above applicable Cleanup Levels may potentially be associated with the smelter. Other common non-smelter related sources within the Site Boundary (e.g., leaded paint, pesticides, herbicides, prior use of leaded gasoline, fertilizers, treated wood, and other commercial or industrial sources, etc.) can also result in elevated soil TC concentrations of the TA metals in soil.

The analytical data obtained from implementation of Section III will be evaluated to determine if there is a compelling basis for expansion of the Site Boundary. Expansion of the Site Boundary will be considered if:

- There is a pattern of TC exceedances of the applicable Cleanup Levels co-located with the presence of visually identified smelter material which would indicate the likely use of smelter material as fill outside of the Site Boundary and that such use results in TC soil concentrations above Cleanup Levels, or

- There is a trend in TC soil concentrations with distance from the former AZC smelter location and pattern of TC exceedances that would indicate TC soil concentrations that may be associated with air deposition would likely exceed applicable Cleanup Levels outside of the Site Boundary.

The foregoing evaluation and any recommendation for expansion of the Site Boundary will be submitted to PADEP for review and approval.

Requests for access, sampling, and cleanup of properties, as defined within the CO&A, within any expansion of the Site Boundary will occur as described within Sections II, III, and V of this SOW.

V. Cleanup

The objective of the Cleanup activities is to excavate and replace soil within each SA of a given property where the average concentrations of the TCs within that soil exceed the Cleanup Levels to the extent necessary for post-cleanup average soil concentrations of the TCs within that SA to be lower than the Cleanup Levels. Guidelines for achieving that objective are as follows:

A. Determination of Cleanup Level Exceedances

Exceedance of Cleanup Levels for each SA within a given property will be determined as follows:

1. Composite Samples

- If the concentration for one or more TCs exceeds the applicable Cleanup Level within either of the composite samples obtained from the two uppermost depth intervals specified in Section III.B.3 (0 – 3

in. and 6 – 12 in. for residential and 0 – 6 in and 6 – 12 in. for non-residential) within a given SA, then that SA will be excavated and backfilled as specified in Sections V.B and V.C. (i.e., the Cleanup)

2. Discrete Samples

- If the concentration for one or more TCs exceeds the applicable Cleanup Level within either of the discrete samples obtained from the two uppermost depth intervals specified in Section III.B.3 (0 – 3 in. and 6 – 12 in. for residential and 0 – 6 in and 6 – 12 in. for non-residential) within a given SA, additional discrete samples will be collected to establish the vertical, as well as horizontal extent, of soil needing to be cleaned up.
- If vertical delineation is required at a discrete sample location, such delineation will consist of collecting samples from additional six inch intervals to the depth of 24 inches. For the purposes of vertical delineation, each discrete sample will be regarded as representing no more than 400 SF of area. If the horizontally delineated area exceeds 400 SF, then additional vertical delineation samples will be required for each additional 400 SF.
- If horizontal delineation around a discrete sample location is required, additional discrete sample locations will be taken in a grid pattern around the discrete sample location. The maximum grid spacing between these horizontal delineation sample locations will be 20 feet. Structural boundaries such as pavement, buildings, or property lines will be excluded from this grid pattern.

3. Depth of Cleanup

- The depth of the Cleanup with a given SA will extend to the top of the uppermost six inch interval (excluding the surface interval) which has all TC concentrations below Cleanup Levels. Samples for determining the TC concentrations will be taken as specified in Sections III.B.1. through III.B.3 to a total depth of 24 inches. Should unusual circumstances result in the full depth of the removal not being practical the removal will extend to the deepest depth practicable; a geotextile marker fabric will be placed at the bottom of the excavation, and the excavation backfilled.

4. Cleanup Levels

Cleanup Levels will be as follows:

Target Constituent	**Cleanup Level**
Arsenic (CASRN 7440-38-2	37 mg/kg
Cadmium (CASRN 7440-43-9)	110 mg/kg

Lead (CASRN 7439-92-1	500 mg/kg
The site specific cleanup levels for arsenic and cadmium are based on the risk assessment approved by PADEP (included as Attachment A). The cleanup level for lead is from Appendix A, Table 4-Medium-Specific Concentrations (MSCs) For Inorganic Regulated Substances in Soil, A. Direct Contact Numerical Values, 25 Pa. Code 250.	

B. Excavation

1. Lateral Extent

Except as provided for in A.2 and A.3, SAs (or a portion of a SA associated with a discrete sample) identified for cleanup by the procedures specified in Section III will be excavated throughout the accessible potion of the SA.

Side yard areas that are less than 15 feet, but greater than 5 feet wide, will have been sampled as part of either the front yard or back yard SA as described in Section III. In this case, the side yard portion of the SA will be excavated only if the front yard or back yard SA that the side yard was a part of is excavated.

In the event that a side area is less than five feet wide (and therefore, not sampled) and accessible, it will be excavated if either the front or back yard SA needs to be cleaned up. In this case, the entire accessible portion of the side yard area will be excavated.

2. Accessible Area

For purposes of cleanup, the accessible portion of a SA (or a portion of a SA associated with the delineation of a discrete sample) includes grass covered and bare areas; gardens and flowerbeds (unless the owner requests otherwise); and unpaved driveways, parking areas and alleys. Examples of inaccessible yard areas are those covered by brick or pavement surfaces (such as concrete pads, patios, paths and driveways); where permanent structures are present (such as houses, garages and sheds); in areas covered by large landscaping items (such as retaining walls, water features, etc.); wooded areas; and setbacks from structures, features and buried utilities.

3. Excavation Setbacks

The potential for damage to structures and utilities will need to be considered on a case-by-case basis in determining the extent of the excavation. Any nominal amounts of soil that may be left in place as a result of these considerations will not affect the achievement of the primary objective of the cleanup.

The nominal setbacks that will be considered as guidance in weighing the considerations described above are as follows:

- Twelve to eighteen inches from permanent structures (house, garage, outbuildings, etc.),
- Six to twelve inches from other improvements (sidewalks, paved areas, etc.),
- Within a distance of one foot from the trunk for every inch of trunk diameter (International Society of Arboriculture, 2001) and the drip line of shrubs excavation will be limited to removal of existing grass and the immediately underlying soils (three to six inches) to minimize potential damage to the root structure,
- Twelve inches laterally from underground utilities with no removal underneath the utility line,
- Limit removal to twelve inches within two feet from other permanent appurtenances or improvements (e.g., power poles, light poles),
- Six to twelve inches around large stationary objects (e.g., sheds, animal shelters, inoperable automobiles),
- Appropriate distance from structures with basements so as not to impact basement walls (to be determined on a case-by-case basis),
- Six inches from fences that are not removed for access, and
- Six to twelve inches from the property line.

C. Backfill

Backfill materials will be imported from sources outside of the Project Area. Prior to placement in an excavated area, samples of the proposed backfill materials will be collected and analyzed to verify that they meet the project requirements specified within this sub-section B unless otherwise approved by PADEP:

1. Physical Characteristics

- Top Soil - Soil used in the upper four inches of Residential yard area backfill that is to be re-vegetated will be a natural workable, friable, loamy soil that is suitable for the establishment of and sustaining vegetation without amendments. Top soil will also be free of refuse, foreign materials, hard clumps (> 3 inches), stiff clay, hardpan, gravel, noxious weeds, brush, or other undesirable material.
- General Backfill – General backfill may be any soil that is not classified as a PT, OH, or OL material as determined by ASTM D2487 and does not contain unsuitable materials. Unsuitable materials include but are not limited to those materials containing roots and other organic material, trash debris, frozen particles, contaminated soil, and stones larger than three inches.
- Gravel backfill – Gravel backfill will consist of a natural or processed mixture of hard, durable particles of coarse aggregate. Crushed aggregate will consist of 100 percent crushed stone and will not include slag, refractory, or waste materials. The materials will be relatively free from soft or decomposed particles and clay.

- The determination of whether the backfill material meets the above requirements for the physical characteristics will be determined based on visual observation, clay, silt and sand composition data determined by gradation analysis, as well as visual and other pertinent characteristics to evaluate the appropriateness of the soil as backfill.

2. Chemical Characteristics

In addition to the physical characteristics specified in B.1., backfill materials and sources of sod will meet the requirements for clean fill specified in PADEP's Management of Fill Policy Document No. 258-2182-773.

D. Excavated Soil Transport

Material excavated from individual properties will be transported to an Excavated Soil Staging Area (ESSA) located at or near the former the American Zinc and Chemical Company ("AZC") site which is being remediated by Cyprus under a separate Order.

Pursuant to Section V.E., the transport of the excavated material between the property being excavated and the ESSA will not be subject to hazardous waste transportation requirements. However, the excavated material will be transported pursuant to criteria that are consistent with the following substantive requirements of 25 Pa. Code Chapter 299 Subchapter B that are applicable to the TSA project.

- Excavated material will be transported using transportation vehicles and trailers that have a valid Waste Transporter Authorization issued by PADEP.
- Loading of the excavated material will be performed in a in a manner that minimizes spillage or spreading of the material
- Protective temporary covering, such as polyethylene sheeting (6-mil Visqueen or equivalent) will be placed over clean areas situated between the hauling vehicle and the excavation area,
- Inspecting the loading zone for spilled material, isolation of the spilled material with traffic cones as necessary, removal of the material (using broom and shovel or other suitable means) with placement in the truck to minimize any subsequent tracking of materials beyond the work site or into local storm drains,
- Covering the loaded material with an adequately secured tarp, or other device,
- Performing routine inspection and maintenance of hauling vehicles as necessary to minimize the potential for release of material from the vehicle,
- Park the hauling vehicle in a manner that does not cause a hazard to public health, safety and welfare, and
- Do not store excavated material in the hauling vehicle for longer than five days, unless that vehicle is within the staging area described in Section V.D.

Transportation of excavated material will also be subject to a contingency plan that is submitted for PADEP review and approval with the Remedial Action Work Plan (RAWP) required by Section III.F. The contingency plan will be consistent with the Guidelines for the Preparation of a Contingency Plan for the Transportation of Residual

Waste provided by the Pennsylvania Bureau of Waste Management, Waste Transportation, and Safety Program

E. Excavated Soil Staging/Disposal

Subject to the conditions specified within this sub-section, excavated material will be managed by placement within a Consolidation Area located within or adjacent to the ESSA.

1. Material Excavated from Residential and Agricultural Properties

When brought to the ESSA, excavated material from Residential and Agricultural properties will be sampled and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) for each TC to determine if the material exceeds the toxicity characteristic specified in 40 CFR Part 261.24 Table 1 (hereinafter referred to as the TCLP Threshold) for that TC. TCLP sampling and analysis will be performed at a frequency of one test per 1,000 cubic yards of material staged at the ESSA in accordance with procedures specified in the RAWP. Any given 1,000 cubic yard batch of material that is found to exceed the TCLP Threshold for one or more TCs will be stabilized within the ESSA such that TCLP Threshold is no longer exceeded prior to placement in the consolidation area.

2. Material Excavated from Non-residential Properties

Prior to the testing specified within this sub-section, excavated material from Non-residential properties will be brought to and staged within the ESSA separately from material that is excavated from Residential and Agricultural properties. The staged material will be sampled and analyzed using the TCLP for each constituent listed in 40 CFR Part 261.24 Table 1 (hereinafter referred to as Table 1 Constituents) to determine if the material exceeds the TCLP Threshold for any of the Table 1 Constituents. TCLP sampling and analysis will be performed at a frequency of one test per 1,000 cubic yards of material staged within the ESSA in accordance with procedures specified in the RAWP.

The suitability and conditions for placement of each 1,000 cubic yard batch of Non-residential material will be determined based on the results of the testing as follows:

Results of Testing on any given 1,000 Cubic Yard Batch of Non-residential Material Tested	**Management**
A. Material does not exceed the TCLP Threshold for any Table 1 Constituent	Will be placed in the consolidation area
B. Material only exceeds the TCLP Threshold for one or more of the TCs	Will be stabilized within the ESSA such that the material no longer exceeds the TCLP Threshold identified in the testing prior to

	placement within the Consolidation Area
C. Material exceeds the TCLP Threshold for one or more of the TCs and any other metal listed in the Table 1 Constituents, but does not exceed the TCLP Threshold for any organic listed in the Table 1 Constituents	Will be stabilized within the ESSA such that the material no longer exceeds the TCLP Threshold identified in the testing prior to placement within the Consolidation Area
D. Material exceeds the TCLP Threshold for any organic listed in the Table 1 Constituents	Will be shipped within 90 days of such a determination to a properly permitted hazardous waste treatment, storage, or disposal facility pursuant to all applicable state, federal, and local regulations, statutes, and ordinances
E. Material exceeds the TCLP Threshold for a metal listed in Table 1 Constituents but does not exceed the TCLP Threshold for one or more of the TCs	Will be shipped within 90 days of such a determination to a properly permitted hazardous waste treatment, storage, or disposal facility pursuant to all applicable state, federal, and local regulations, statutes, and ordinances

3. Design and Operating Requirements of the ESSA and Consolidation Area

Detailed design and operating requirements for the ESSA and Consolidation Area that address the criteria provided within this subsection will be provided for PADEP review and approval within the RAWP required by Section V.F.

a. Design criteria common to both the ESSA and Consolidation Area

- Prevent run on of surface water into those areas that are used for management of excavated materials,
- Manage stormwater runoff from all disturbed areas in a manner that is consistent with the substantive requirements of PAG-2 General NPDES Permit for Construction Activities
- Provide for best management practices (BMPs) and a maintenance program that will minimize the potential for accelerated erosion and sedimentation consistent with the substantive requirements of 25 Pa. Codc § 102.4 (Erosion and sediment control requirements)
- Manage the generation of fugitive dust using a combination of good construction practices, visual inspection for fugitive dust, real time air

aerosol monitoring for particulate matter less than 10 microns in diameter (PM_{10}), and specified corrective measures to be implemented as necessary to minimize the occurrence of PM_{10} levels above 150 micrograms per cubic meter (µg/m3)[3] at the downwind boundary

b. Design criteria specific to the ESSA

Some portions of the ESSA may be used for the temporary staging and stabilization of material that is found to exceed the TCLP Threshold. Pursuant to Section V.E. RCRA requirements will not be applicable to the management and stabilization of such material within the ESSA. However, the design of the ESSA should achieve the following performance criteria for staging piles found within 40 CFR 264.554 (d) (1) (ii)[4]. Achievement of these performance criteria may be achieved with design and operating procedures that meet the following criteria in addition to those specified in Section IV.D.3.a:

- Prevent cross contamination between excavated material, any clean backfill materials that may be managed within the ESSA, and their respective working areas by segregation of material stockpiles and implementation of appropriate material handling and transport procedures,
- Prevent comingling of individual stockpiles of excavated material until sampling and analysis has confirmed that the material does not exceed the TCLP Threshold,
- Provide for appropriate decontamination of equipment prior to the equipment exiting the ESSA for travel on public roads or into any clean fill management area that may exist within the ESSA, and
- Provide for tracking and documentation that material has been tested to confirm that it meets the conditions specified in Sections V.D.1 and D.2 prior to placement within the Consolidation Area.
- Either locating the ESSA on a portion of the AZC site which will be covered with a soil cap as specified in a separate cleanup plan for the AZC site to be remediated by Cyprus under a separate Order (provided that placement of the soil cap within the ESSA area occurs after the use of the ESSA is completed) or, if located on an uncapped portion of the AZC site, removal of material beneath the ESSA as necessary to ensure that the six inch interval remaining beneath the base of the ESSA (the Verification Interval) has TC concentrations equal to or less than the Statewide health standards specified in 25 Pa. Code § 250 (Administration of Land Recycling Program) Appendix A, Table 4.A (direct contact) for non-residential use.

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[3] The pertinent National Ambient Air Quality Standard for PM_{10}

[4] 40 CFR 264.554 (d) (1) (ii) The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate);

Confirmation that the Verification Interval meets the foregoing requirement will be obtained as follows:

- By taking twelve samples within the uppermost six inch interval underlying the ESSA, or the base of any required removal, using a systematic random grid and analyzing each sample for the TCs.
- Confirming that the concentrations of each of the TCs from the twelve samples meet the following requirements:
  - Seventy-five percent are less than or equal to the non-residential direct contact standard referenced above and no individual concentration exceeds ten times that standard, or
  - The 95% UCL of the arithmetic mean of the concentrations is less than or equal to that standard.

Any material removed from beneath the ESSA can be placed within the Consolidation Area and backfill of the removal will only be required as necessary to maintain proper drainage.

c. Design criteria specific to the Consolidation Area

In addition to the requirements of Section V.D.3.a., the design of the Consolidation Area will meet the following criteria:

- The final grading and cover design will meet the requirements of 25 Pa. Code § 288.234, and
- Revegetation of the cover will meet the requirements of 25 Pa. Code § 288.236 and 237.

F. Applicability of the AOC Policy to Excavated Material Management

The Project Area is within the Area of Contamination (AOC) that includes the AZC Site. Under the U.S. Environmental Protection Agency's AOC policy, transport, stabilization, and final placement within the AZC consolidation area of material containing hazardous waste would not trigger RCRA requirements.

G. Submittal of a Remedial Action Work Plan

Within 90 days of the effective date of the Order, Cyprus will submit, for PADEP review and approval, a Remedial Action Work Plan (RAWP) that addresses the following:

- Cleanup project organization,
- Noise control,
- Dust control criteria provided in Section V.D.3.a.,
- Providing physical access for property residents during cleanup,
- Decontamination of cleanup equipment and management of decontamination fluids,

- Pre and post cleanup property inspection and coordination with property owner,
- Engineering controls, inspection, stabilization, placement, and maintenance procedures for management and disposal of excavated material within the ESSA and consolidation area that meet the criteria provided in Sections V.D.3.b and c.,
- An erosion and sediment control plan for the ESSA and consolidation area that meets the criteria provided in Section V.D.3.a.,
- Details of erosion and sediment control BMPs to be used at individual property excavation areas,
- A transportation contingency plan referenced in Section V.C, and
- Final report.