

Concrete Coring and Sampling Procedures for Characterizing the Copper and Lead Stack Materials

The following describes the procedures that will be used for sampling of concrete core material that will be removed from the stacks to evaluate the material prior to demolition with respect to potential concentrations of Chemicals of Concern (COCs). The cores will be two to four inches in diameter and will be advanced through the entire width of the stack walls (approximately two to three feet long). Both ERM and Malcolm Pirnie Inc. will participate in this activity as described below:

ERM will perform the following tasks:

- Three cores will be collected at three heights (ranging from 0 to 100 feet) at different radial positions on the lead stack.
- Six cores (three for the inner stack and three for the outer stack) will be collected at three heights (ranging from 0 to 100 feet) at different radial positions on the copper stack.
- The coring process will be documented using photographs. The area to be cored will be marked and photographed prior to and after coring takes place. A photograph of the core after removal will also be taken.
- An on-site crusher will be used to process the stack material for collecting samples. The crusher will be decontaminated by ERM by first hand-wiping the crusher and then blowing out the crusher jaws with compressed air prior to starting crushing and before and after each core is processed. The crusher will be set to a maximum diameter of 0.5 inches.
- Each core will be crushed and the material will be placed in a five gallon bucket. One bucket will be used for each core to prevent cross-contamination of the samples. Pieces of rebar found during crushing will be removed.

The following tasks will be performed by Malcolm Pirnie, Inc.:

- The entire volume of the crushed core will be poured through a riffle sample splitter, which halves the volume. The two sample halves will then be combined and mixed together and poured through the sample splitter again. This process will be repeated for a total of three times. After the third split of the entire volume, each half will be split to create four quarters. The four quarters will then be sampled and composited as the representative sample for that core. The riffle sampler will be decontaminated using the same method as with the crusher.
- One sample will be collected from each bucket for laboratory analyses. Samples will be placed in zip lock bags and double bagged. A field duplicate and QA sample will also be included. Samples will be shipped via overnight shipping to Test America and analyzed using a 3 day turn-around time.

- The following table summarizes the list of COCs that will be submitted for laboratory analyses.
 - Metals - RCRA Metals plus COCs and Analytes of Interest (AOIs) (methods 6010B and 7471)
 - arsenic
 - cadmium
 - copper
 - chromium
 - iron
 - lead
 - selenium
 - zinc
 - antimony
 - barium
 - cobalt
 - mercury
 - molybdenum
 - nickel
 - silver
 - Volatile Organic Compounds from Priority Pollutants List (PPL) (method 8260B)
 - Semivolatile Organic Compounds from PPL (method 8270B)
 - Other
 - Crystalline silica – Per NIOSH method 7500 to be run at HIH Laboratory

Crystalline silica is being sampled to evaluate its potential as an airborne particulate.