CDM Smith Comments in Black. Responses from CFAC/Roux Associates in Red. Follow-up CDM Smith Comments in Green. No follow-up indicates response is acceptable.

CDM Smith Comments on Modification 10 and Asbestos Sampling SOP

1). Data Quality Objectives – Where are the data quality objectives associated with the asbestos sampling? The modification simply states that Roux Associates will evaluate the potential presence of asbestos in surface soil in the four asbestos landfills. Is the goal to provide data for the purposes of evaluating the nature and extent of contamination and/or risk assessment? If asbestos is present, what threshold will be used to compare the data to? Note, EPA's asbestos framework (https://semspub.epa.gov/work/HQ/175329.pdf) is clear that simply using a threshold of 1% is not protective of human health. Because of this, the framework recommends that activity-based sampling (ABS) be conducted to evaluate human health risk.

Historical knowledge of operations at the Site, the existing Site Conceptual Model, and previous Site reconnaissance and test pitting, suggest that asbestos containing materials are buried in the landfills. The surface soil sampling proposed in this modification was requested by the EPA to evaluate if the historical ACM disposal activity has impacted surface soil conditions. Therefore, the Data Quality Objective of the sampling is to determine the presence, or lack thereof, of asbestos in the surface soil, which in turn can be used to evaluate if there is any potential for exposure under current site conditions. The scope of work for this sampling effort can be considered an evaluation of Steps 1 through 3 of the EPA Asbestos framework decision process.

It is understood that a threshold of 1% may not be protective of human health, as described in the EPA asbestos framework. Therefore, as discussed below in the response to comment 4, Roux Associates is proposing to utilize the standard CARB 435 method. The standard CARB 435 method utilizes a 400-point count with a method detection limit of 0.25%. The results of this initial sampling will be evaluated during development of the baseline risk assessment work plan to determine if activity-based sampling (ABS) is necessary. If ABS is necessary, the data quality objectives and scope of work will be described in the Phase II Sampling and Analysis Plan.

Formal DQOs have not been developed to ensure the data are of sufficient quality and appropriate for use in attaining the study objective. What has been included are step one and two of the seven-step DQO process (a problem statement and a goal for the study have been stated). The remaining steps have not been outlined. It is recommended that formal DQOs be developed to ensure the data are of sufficient quality and appropriate for use in attaining the study objective.

If it is determined that there is potential for exposure, what are the next steps? How will risk be quantified?

2.) Sample Collection – How will building materials that may contain asbestos be collected if encountered during sampling? Will a separate sample be collected and sent to the laboratory for analysis? How will soil subsamples be collected in areas where vegetation is present? How will vegetation be treated? Will it be removed and the soil beneath it sampled? How will subsamples be collected if the concrete pad in the southwest landfill is identified by random sampling? Why is homogenization/sample size reduction being performed in the field? Can homogenization/sample size reduction be performed at the laboratory?

No building materials are proposed to be sampled as part of the soil sampling effort. As described above, based upon field reconnaissance and test pitting, any asbestos related materials appear to be buried at depth in the landfill, and therefore are not likely to be encountered in surface soils. If ACM is encountered it will be noted in the field book.

The area where sampling will occur is for the most part vegetated with tall grasses. The vegetation will not be sampled as part of the sampling effort. It will be removed and the soil beneath/around the vegetation will be sampled.

If obstructions to the sampling efforts are encountered during sampling which prevent collection of a subsample (e.g., large vegetation such as trees or the concrete pad in the southwest landfill), the subsample collection point will be moved to the closest accessible location without regard to direction. The distance and direction moved will be noted on the field data sheet for the grid. This procedure is outlined in Roux's sampling SOP.

As described in the response to Comment #6 below, the CARB 435 method of analysis is being proposed as part of the modification revision. This method includes a homogenization step that will be performed by the laboratory. The procedures for sample preparation are outlined in the laboratory SOP attached to the modification titled "Asbestos Analysis in Soils and Rock: CARB 435 using PLM". The Roux SOP for sample collection was modified to remove reference to field homogenization/sample size reduction.

Because materials have the potential to rise to the surface, if materials are encountered, it seems reasonable to perform analysis of the material to determine if the material contains asbestos in the event the materials are degrading and contributing asbestos to surface soils.

3.) Field Quality Control - It does not appear that field quality control samples are slated to be collected. Field duplicate samples should be collected as samples co-located in the same area as the parent sample. The duplicate will be collected using the same number of subsamples as the parent sample, but from different randomly-selected subsample locations.

One field duplicate quality control sample will be collected for every 20 samples collected during the sampling effort. Field duplicates will be collected as noted in the comment.

How will field duplicate samples be evaluated? How was the frequency determined?

4.) Custody Seals – Self-adhesive seals should be applied to an individual sample or sample container to demonstrate that sample integrity has not been compromised during sample transfer.

Custody seals will be utilized throughout the sampling to preserve sampling integrity.

5.) Laboratory Sample Preparation – How will samples be prepared at the laboratory? Where is this information specified? There are numerous preparation methods that a laboratory could employ, some of which may not be ideal for the type(s) of asbestos that may be present at the Site.

Sample preparation by the laboratory is specified in the laboratory SOP titled "Asbestos Analysis in Soils and Rock: CARB 435 using PLM". The laboratory SOP will be attached to the modification.

6.) Laboratory Analysis – Why has CARB 435 not been selected as the analysis method as recommended in EPA's asbestos framework? If using EPA 600, has it been confirmed with the laboratory that soil reference materials are available for use in this method? Where will instructions to the laboratory regarding analysis to be provided? Does the laboratory have latitude to perform only a point count analysis or are they being instructed to perform both a visual area estimation (assuming reference materials are available) and a point count? If point counting is to be performed, has the laboratory been provided with the quantity of points to be counted (e.g., 400, 1,000, etc.)?

The EPA 600 method was specifically requested by EPA as part of preliminary discussions about the asbestos landfill sampling scope of work during project meetings held in 2016. However, based on the data quality objectives described above (i.e., response to Comment #1) and the recommendations in the EPA asbestos framework, Roux Associates is proposing to utilize the standard CARB 435 method. The standard CARB 435 method will utilize a 400-point count with a method detection limit of 0.25%.

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