

**Subject: information on representativeness:**

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Stephanie:

With respect to protocols to assess representativeness, the response should address, at a minimum, the following:

1) Primarily, what we need to see is that GM will thoroughly evaluate whether the "representative" sample is truly representative of the subject waste stream. We revisited the need to "statistically analyze" the samples to assess representativeness, but this is so subject to waste type and thousands of other variables, we think that GM should probably commit to only assessing whether a statistical protocol would be appropriate (probably not, in most cases), and should focus more on how they will subjectively evaluate whether a representative sample has been taken. Factors that GM would probably would to consider in their evaluation include but are not limited to:

- a) sampling protocol
- b) sample location
- c) sample type (composite vs. grab)
- d) waste generation
- e) waste stratification (with respect to sampling location/protocol)
- f) sample matrix
- g) system configuration with respect to sampling performed (i.e. was the sample collected in an adequate location)

2) The representativeness discussion should state the that the above (and other) elements shall be examined, what GM will "look for" with respect to each (i.e. that scoop was not used to collect a representative sample from a stratified waste stream), and how they will determine whether the sample is representative of the waste stream (i.e. shall assess sample location with respect to the site waste generation system, shall assess whether the generator took site heterogeneity/homogeneity into appropriate consideration when collecting the sample, etc).

Also, in terms of sampling protocols, etc., the following guidance documents are useful and GM may wish to state that they'll examine these, as well as others, as part of the process:

- ASTM D4547-91 Standard Practice for Sampling Waste and Soils for Volatile Organics
- SW-846 Part III
- RCRA Sampling Procedures Handbook, EPA Region VI

Hopefully this helps clear the air a bit-- I think a one-two page discussion would certainly suffice. We were hoping to get a good discussion included so that any questions that could be raised at the hearing about the representative sample "representativeness" could be covered in a general way.