

NEWMOA Hazardous Waste Conference Call July 9, 2013

Topic: C&D Materials Sampling

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Participants

Participants: CT DEEP (10 people); ME DEP (4 people); MassDEP (6 people); NH DES (9 people); NJ DEP (6 people); NYS DEC (3 people); RI DEM (1 person); VT DEC (3 people) EPA Region 1 (3 people); and NEWMOA (1 person).

Draft notes prepared by Mike Hudson, ME DEP with help from Terri Goldberg, NEWMOA; call led by Mike Hastry, NJ DEP.

NJ DEP

NJ DEP has developed a robust C&D materials sampling program. They have a budget of about \$200,000 to support 10-15 sampling events per year.

NJ DEP primarily samples ground-up C&D material, which can include structural components such as painted wood as associated fill, soil, asphalt, and concrete. The grinding is done either onsite or offsite at transfer stations to reduce transportation costs – this practice is common in NJ and C&D waste is received from out-of-state sources in this form.

NJ cited its Fennimore Landfill as an example. C&D debris is accepted at this landfill with 90 percent of it coming from NY City. The C&D debris is ground up prior to shipment to the site.

To support this sampling effort, they have prepared a health and safety plan and a sampling plan. For the C&D debris wastes with paint chips, they find it difficult to get a good determination. Hydrogen sulfide gas is an issue at some landfills that take ground-up C&D material. The State gets a large number of complaints about this.

NJ has huge piles of the C&D debris accumulating in urban areas. The State solid waste inspectors identify the piles, create a grid of the site, and take random samples. Sampling techniques includes discrete grab samples at depth, from six inches to three feet. Sample analysis includes semi-volatile organic compounds (SVOC), total metals, pesticides, and PCBs (depending on Dextsil screen testing). Sample results are compared to NJ clean-up standards /soil screening guidelines since the ground up C&D material is often reused as commercial fill. Most common issue is elevated SVOCs. The elevated SVOCs are suspected to be from asphalt material in the C&D debris. Another possibility is underground fuel tanks. Elevated PCBs have been encountered in some samples, probably due to PCB-contaminated caulking material and /or concrete. Elevated toxicity characteristic leaching procedure (TCLP) results for lead have been encountered in one to two samples. The samples that fail for lead are those with ground up paint chips included.

DEP has developed sampling procedures and a manual. The DEP website includes the remediation standards and regulations. Grinding of C&D material is common in NJ. As long as the ground material meets residential standards, it can be used for fill purposes.

NY and NJ have different standards for the debris. In NY, samples that have one part per million (ppm) for benzo a pyrene are classified as contaminated, but the standard in NJ is two ppm so the material is dirty in NY and clean in NJ.

At older industrial sites, lead and asbestos are common and the State tries to get the C&D waste from those sites separated.

CT DEEP

Generally, residential C&D debris is exempt household hazardous waste (HHW) per federal guidance, however >10 yd³ is not considered residential, even if generated at a residence.

CT DEEP has a comprehensive sampling document, which includes “Strategies for Sampling & Characterization of Lead-contaminated C&D Debris”, and provides guidance on six sampling strategies:

1. Screen/sample/segregate (prior to demo) – there is no requirement to remove lead-coated materials if they pass TCLP. Use x-ray fluorescence (XRF) to test for metals. If found to be non-hazardous, no further analysis required and can be managed as solid waste. If test is positive, conduct TCLP test. If fail TCLP, handle as hazardous waste.
2. Screen/segregate (prior to demo) – based on XRF/total metals screening. Use results to determine if hazardous / non-hazardous and handle appropriately.
3. Composite sample/demo – TCLP of composited subsamples, which is adjusted based on engineering estimate of building material percentages (e.g., roofing is 10 percent of structure, foundation is 30 percent).
4. Remove/cut/sample – Collect cuttings from drum dropping and run TCLP of saw cut sawdust, which provides a good cross section sample of a piece of material. Use results to determine if hazardous / non-hazardous and handle appropriately.
5. Screen/calculate – Sample paint and estimate the volume of paint in the structure using paint thickness and surface area measurements. Use to calculate an estimate of the lead concentration. The screening values and estimated volume of paint can then be compared to the mass of the whole structure to estimate the lead in the structure and make a HW determination. Can do screen and calculate and then screen and sample based on the results.
6. Demolish and test – not preferred sampling strategy, since it is difficult to get a representative sample once the building is demolished since the material is so heterogeneous. DEEP encourages testing the waste prior to generation because it is more effective and costs less.

None of the six strategies is required.

Ratio of surface area to mass is a driver in whether a waste fails TCLP for lead. Thinner painted materials (e.g., siding) can fail TCLP for lead due to increased painted surface area versus total mass of material. DEEP has also seen bricks fail at one site due to clay in the bricks having elevated lead.

CT has fact sheets online targeting homeowners, contractors, and municipal officials. They conducted training on the fact sheets. As part of this effort, they developed a “red flag” list for local officials that tells them if they see certain activities or materials who to call. They have a sample checklist for renovation and demolition projects that cover simple basic procedures, especially for industrial and commercial sites. They’ve done mailings to attorneys, building contractors, and demolition contractors. They’ve prepared a handout on treated lumber. In their training and materials they encourage more recycling but they find that lead, asbestos, chemicals, and other contaminants get in the way of recycling.

It is important to address contamination issues and perform screening early in the process to avoid issues down the road. It is also important to spell out in contracts the party/ies that is/are

responsible for screening/sampling.

They have not yet modified their regulations to be consistent with EPA's definition on PCBs in caulk.

Mass DEP

Residential C&D from routine maintenance and renovation is exempt HHW per federal guidance - this is true even if a contractor performs the work. MA recognizes the federal exemption for lead-based waste generated as a result of remodeling. If a residential home is demolished, the C&D debris is not household exempt. No sampling guidance is provided. The contractor must make determinations at commercial sites. Mass DEP encourages contractors to remove and segregate materials prior to demolition, if those materials may cause the C&D debris to become hazardous waste. They have not prepared any written sampling procedures for the contractor to follow. DEP has prepared fact sheets on how to handle certain C&D materials.

NH DES

Generally, residential C&D is exempt HHW per federal guidance; however demolition of a whole residential structure is not exempt. No sampling guidance, contractor must make determinations at commercial sites. Have found that individual components do not usually fail TCLP but this can happen. Landfills have limits on what is accepted, so this really drives the sampling process. They have prepared a fact sheet for contractors and others.

VT DEC

Residential C&D debris is exempt HHW per federal guidance. Lead-containing paint (LCP) waste, such as architectural components from households, can be disposed of in certified municipal landfill or C& D waste landfill, as well as LCP chips and dust, but VT recommends that chips and dust be collected in secure containers and disposed of through local HHW collection events. For nonresidential LCP waste, VT allows that most painted architectural components to be considered non-HW based on historical experience/data. Not true for chips and dust, which would need to be subject to a hazardous waste determination, e.g., sampled, in a non-residential situation. They developed a fact sheet with the Department of Public Health on the prevention of lead exposure during lead abatement. All C&D debris goes to double lined C&D waste landfills.

NYS DEC

Residential C&D is exempt HHW per federal guidance - this is true even if a contractor performs the work. Agree with CT DEEP's statement in their "Demolish and Test" Strategy that the demolition/test strategy makes it very difficult to get a representative sample. In 2002, EPA developed an Appendix document dealing with strategies for sampling heterogeneous waste,

which was useful. DEC volunteered to share this information with the call participants through NEWMOA (see note below).

It is important to note that part of TCLP method 1311 (step 7.1.3) may introduce variability of sample results depending on particle size reduction technique, since the method allows analyst to crush, grind, or cut sample to meet the 0.95 cm mesh particle size requirement. However, the crushing or grinding can potentially create much more surface area than cutting, which can affect TCLP results. An agency attempting to enforce its regulations against a generator could easily get into a situation where each side would have significantly different TCLP results, with the defense using cutting as the method used to achieve particle size reduction and the state agency choosing crushing. NYS DEC has concluded that the most defensible approach is to have the particle size be 0.95 cm cubes. It was noted that the Electric Power Research Institute, in determining that creosote-treated and Pentachlorophenol-treated telephone poles passed TCLP testing, used 0.95 cm cubes and not the dust.

If collecting samples as part of a composite sample/demolition strategy (see CT above), it is helpful to collect samples of both painted and non-painted materials. This may demonstrate that the wood is not contaminated and then painted materials with elevated metals can be abated prior to demolition. Regarding CT DEEP's "composite-sample and demolish" strategy, New York State suggests to generators that the sample taker, at the time he or she is obtaining a composite sample of each component of the building, also obtain another composite sample, which is taken at the same time as the first and is identical to the first except that any suspected lead-based paint (LBP) surfaces are excluded from that sample. If the first composite sample fails TCLP but the second passes, the generator can avoid having to dispose of the entire quantity of the debris as hazardous waste by abating the LBP surfaces that were excluded from the second composite sample. Only the abated LBP would need to be disposed of as hazardous waste.

ME DEP

Residential C&D is exempt HHW per federal guidance. Maine is similar to MA, NH, and VT.

Note: After the conference call. NYS DEC emailed EPA's Appendix to NEWMOA for sharing with the group (the Appendix is posted on NEWMOA's site along with the notes). NYS DEC noted that the Appendix makes it clear that the basic problem with heterogeneous sampling is that the coring device's diameter needs to be substantially larger than the largest item in the debris pile, resulting in a representative sample so large that the analytical lab receiving the sample would then have to sample the sample. The analytical lab realistically has no choice but to reduce the particle size in order to obtain that representative sample of the larger sample. This is a problem because TCLP results are a function of particle size.