

## HLWYM HEmails

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**From:** Randall Fedors  
**Sent:** Thursday, May 24, 2007 10:12 AM  
**To:** 'Robert Lenhard'  
**Subject:** RE: update

Bob,

Another idea I think I mentioned at one time was to put the box in the back of a truck, and do some shaking by driving around on slightly bumpy roads. This might be useful as another means for packing. The only other way I could think of improved packing by settling, was to use a hydraulic jack to lift corners of the wooden box a few inches, then kick out the jack.

Also, Plot 3 was from a area with more intense fracturing, and thus smaller fragments and smaller size distribution. It would add another perturbation to the packing. Plot 1 was more similar to Plot 2.

Let's go over the report idea when I come to San Antonio. I want to make sure that minimal additional effort is put into the report writing activity, thus a brief and to the point report. IMs do not have to be big and glitzy. And no timetable for the report yet, I don't want mgmt forcing a report out too quickly (burden when other priorities are at hand). Please give a heads up to Danielle that we want include her shape characterization to the report.

A table of preliminary results and packing methods/procedures would be nice to have soon. I want to pass it around here to get people thinking, and start gaining consensus.

--Randy

>>> Robert Lenhard <[rlenhard@cnwra.swri.edu](mailto:rlenhard@cnwra.swri.edu)> 05/24/2007 9:31:01 AM >>>  
Randy,

I will talk with Don Bannon to see if the shipping weight is included for each drum -- or it is only a combined weight -- or if any weight is listed on the paper work. We have conducted another packing yesterday besides the one with Goodluck. We will need to weigh the contents. So to weigh all rubble from plot 2, we will need to only weigh another 100-150 kg. We can estimate the volume of rubble in the drums from pictures we took. I do not know if DOE may have itemized the weights for each drum and how they may have labelled each drum. If their labels are not plots 1, 2, & 3, then we might have some uncertainty connecting a weight to a particular drum, unless there are other markings/labels on the drums. Don was careful in organizing all paperwork that came with the shipment.

-- Bob

-----Original Message-----

**From:** Randall Fedors [mailto:[RWF@nrc.gov](mailto:RWF@nrc.gov)]

**Sent:** Thursday, May 24, 2007 8:06 AM

**To:** Robert Lenhard

**Subject:** RE: update

So, you are telling me that the shipping information did not include the weight, which is usually how they set the cost. I was hoping that the paperwork that came with the barrels, had the shipping weights for each pallet. I could also ask DOE to track this down.

--Randy

>>> Robert Lenhard <[rlnhard@cnwra.swri.edu](mailto:rlnhard@cnwra.swri.edu)> 05/24/2007 7:59:56 AM >>>

Randy,

The best that we can do is to weigh all of the rubble and then estimate the volume from pictures we took of the drums.

-- Bob

-----Original Message-----

**From:** Randall Fedors [mailto:[RWF@nrc.gov](mailto:RWF@nrc.gov)]

**Sent:** Thursday, May 24, 2007 5:27 AM

**To:** Robert Lenhard

**Subject:** Re: update

About the estimate from the shipping barrels that I wanted. It seems that you have a good enough estimate of the volume. Can't you get the weight from the shipping paperwork for each barrel? Then, of course, subtract off metal drum and pallet weights?

Just an idea.

--Randy

<<< Robert Lenhard <[rlnhard@cnwra.swri.edu](mailto:rlnhard@cnwra.swri.edu)> 05/23/2007 5:25 PM >>>

Randy,

Luis and Goodluck packed rubble. Most of the openings in the voids between larger rubble sections were filled with smaller particles. The results, in my opinion, reflect a dense packing, which yielded a lower bulking factor, e.g., 1.25 -- assuming a fracture porosity of 1%. We will draft a brief report over the next several weeks.

-- Bob

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**Created By:** Randall.Fedors@nrc.gov

**Recipients:**  
"Robert Lenhard" <rlnhard@cnwra.swri.edu>  
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