HLWYM HEmails

From: Brittain Hill
Sent: Tuesday, August 21, 2007 8:42 PM
To: Debashis Basu; John Stamatkos; Philippe Dubreuilh; Donald Hooper; John Trapp; James Rubenstone; nadams@swri.org
Cc: Bret Leslie; Eugene Peters; Jack Guttmann
Subject: Re: Characterize eruptive parameters (comment).

Their carbonaceous speculation is in error. The reason for the confusion is that we sampled the latest stage of the cone, which preserved the evidence for a Tolbachik-like white ash event during the end of the eruption. Much of that deposit has been destroyed or removed by mining.
Nevertheless, I still have the slides if someone wants to examine them in detail.

We were concerned with underestimating xenolith abundances, as many of the xenoliths are cored bombs with basaltic rinds. Thus, they would not show on the photos as light pixels.

As Perry and others have demonstrated, the outer flanks of Lathrop wells cone are chemically distinct from the preserved top of the fall deposit.
While this difference first led them to error in assuming many tens of thousands of years passed between the fall and subsequent cone eruption, they have recanted such nonsense. Nevertheless, they are falling into a similar, facies-based error again. By measuring xenolith abundances in the fall, they are not examining the last stages of the eruption. The last stage is when the white-ash (i.e., major conduit widening) event occurred at Tolbachik. Clearly, they have look for a record of an eruption process where no deposit of that time is preserved. Carbonate, indeed.

Interesting to note that the xenoliths in the Tolbachik falls prior to the white-ash event yielded a conduit on order of 15m diameter. Given the similarity in mass flow rates likely between Lathrop and Cone 1 Tolbon, this is noteworthy. The late-stage event, as preserved (but not sampled by DOE) on the outer southern flanks of LW, likely represents a 10's of meters widening, by analogy with Tolbachik and direct comparison of the deposits.

I do think this has poured a bit of HCl on their fizzy assertions.

Selah.
Britt

Brittain E. Hill, Ph.D.
Senior Technical Advisor for Repository Science US Nuclear Regulatory Commission MS EBB-2-BO2, NMSS/HLWRS/TRD Washington, DC 20555-0001

Ph (301) 492-3168; Fax (301) 492-3357; email: BEH1@nrc.gov
>>> John Trapp 08/21/07 9:32 AM >>>
As I have said in other e-mails DOE is trying to justify a 16 meter diameter conduit. Section C-7 of this report provides their justification which is simplest form is a contention that the percentage of lithics at Lathrop Wells is 9.8 X 10-4. They note that this is an order of magnitude less then Doubik and Hill. (however, according to this report, the "secondary carbonate" is probably why Doubik and Hill got this "large" numbers. I am smiling as I am waiting for Brits comment on this assertion)

One of my real problems is DOE is dealing with the cone only in this analysis, and the real transport I would be worried about is the ash (remember the "white Ash".) About the most detailed analysis on lithic content of Lathrop Wells ash still goes back to the "Status of Volcanic Hazard Studies for the Nevada Nuclear Waste Storage Investigations"
LA-9325-MS, Vol II, 1986). While there are concerns with the report, the measured volumes of lithic fragments in the ash averages about 1 percent for the non "hydrovolcanic" samples.

Bottom line is that DOE is going to be trying for a much smaller conduit based on the above analysis, and using this for a reduction in probability (i.e. only ~ 25 percent of the time will a conduit intersect waste packages) and pushing this thru their TPA. It don't fly, but need a good write-up on our end.

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 1366

Mail Envelope Properties (s6cb4e18.032)

Subject: Re: Characterize eruptive parameters (comment).
Sent Date: 8/21/2007 8:41:35 PM
Received Date: 8/21/2007 8:42:28 PM
From: Brittain Hill

Created By: Brittain.Hill@nrc.gov

Recipients:
"Bret Leslie" <Bret.Leslie@nrc.gov>
Tracking Status: None
"Eugene Peters" <Eugene.Peters@nrc.gov>
Tracking Status: None
"Jack Guttmann" <Jack.Guttmann@nrc.gov>
Tracking Status: None
"Debashis Basu" <dbasu@cnwra.swri.edu>
Tracking Status: None
"John Stamatkos" <jstam@cnwra.swri.edu>
Tracking Status: None
"Philippe Dubreuilh" <pdubreuilh@cnwra.swri.edu>
Tracking Status: None
"Donald Hooper" <dhooper@cnwra.swri.edu>
Tracking Status: None
"John Trapp" <JST@nrc.gov>
Tracking Status: None
"James Rubenstone" <James.Rubenstone@nrc.gov>
Tracking Status: None
"nadams@swri.org" <nadams@swri.org>
Tracking Status: None

Post Office: NRNWMS05.NRC.GOV

Files	**Size**	**Date & Time**
MESSAGE	3431	8/21/2007 8:42:28 PM

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received: