From: Brittain Hill
To: "John Trapp" <JST@nrc.gov>
Date: 10/19/2006 3:26:49 PM
Subject: Gas segregation
cc: "James Rubenstone" <JXR5@nrc.gov>

John - I'll leave some direct editorial suggestions on the text mark-up. Overall the paper looks good and doesn't overstate the results. Addresses magma cooling, and gives us some additional insights on degassing (e.g., probably about 1 wt% water left in the melt at 300m, for example).

The methods are straightforward from the original Menand and Philips paper. I didn't review the maths, but the computational approach looks familiar based on preceding work. The assumption for the viscosity model is critical, but is well supported in text. Differences between models may give a factor of around 5x for parameters most representative for YM, so this isn't a big deal IMHO.

Page 26, fisrt paragraph: Need to mention that the thermal analysis neglects the presence of EBS, which adds additional thermal mass to problem and a more complex cooling system than a simple, solid cylinder. A perspective might also be added that the duration of common basaltic eruptions is on order of days to tens of days, which limits the relevance of the exchange flow problem to well within the time where magma molten in drift.

P 30, last para: The implications for carrying HLW into the conduit must be well supported, or stricken from text here. Implication is that Qd is sufficient to carry HLW into conduit? Velocities of <0.1 m/s don't intuitively support that implication. Such a statement needs a paragraph on its own, with some clear support to avoid any misinterpretation or untoward extrapolations. Ibidum page 31-32 in conclusions.

P. 31: What is Qc?? Is this Qex??

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Britt

Hearing Identifier: HLW_YuccaMountain_Hold
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Subject: Gas segregation
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From: Brittain Hill

Created By: BEH1@nrc.gov

Recipients
"James Rubenstone" <JXR5@nrc.gov>
"John Trapp" <JST@nrc.gov>

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Reply Requested: No
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None

Concealed Subject: No
Security: Standard

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