

## HLWYM HEmails

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**From:** John Bradbury  
**Sent:** Monday, March 03, 2008 4:45 PM  
**To:** LSNReviews  
**Subject:** Fwd: Re: Bio Partitioning  
**Attachments:** TEXT.htm

>>> John Bradbury 10/24/2007 5:43 PM >>>  
Thanks Pat. I'll look it over.

In trying to provide logical constraints for the amount of recycling, I found that 500ppm = 1DS/m and the ECe (electrical conductivity from soil extraction) that doesn't stunt alfalfa growth is 2DS/m. Therefore, it looks like based on alfalfa tolerance, the TDS can only be increased by a factor of five, from 200ppm to 1000ppm.

I also note that EPA has a secondary maximum drinking water limit for TDS of 500ppm. If that is considered then the factor is only 2.5. These factors are based on the assumption that evaporation increases concentration but does not result in precipitation. If the groundwater is saturated with respect to calcite or gypsum, evaporation won't result in increases in Ca, SO<sub>4</sub>, and CO<sub>3</sub> concentrations. I'll do a PHREEQC calculation to see how much evaporation is needed to reach 1000ppm for the alfalfa constraint or 500ppm for the secondary drinking water standard.

These limits support the conceptual model in which pumping wells move to different locations as the fields become spent.

John  
>>> Pat LaPlante <[plaplante@cnwra.swri.edu](mailto:plaplante@cnwra.swri.edu)> 10/24/2007 4:56 PM >>>

All, After the meeting last week on 'recycling' and to respond to some of Tim's questions regarding partitioning of contaminants in the biosphere (% remaining in soil, % in plants etc) I have put some of the basic calculations from the GENII v1.485 code (which also are used in TPA code) onto a spreadsheet which I have placed in the PAL directory on the N (shared) drive.

The spreadsheet was necessary because the code only provides limited intermediate outputs. A disclaimer was included on the spreadsheet because it isn't a formally QA'd calculation, however, the results for total plant burden do match the code output and the equations were taken directly from the code manual (thus I have some reason for thinking the results are comparable).

Feel free to call me if there are any questions or comments. Pat

From: John Bradbury [mailto:[JWB@nrc.gov](mailto:JWB@nrc.gov)]

Sent: Tuesday, October 23, 2007 12:16 PM

To: Alexander Sun; Paul Bertetti; Patrick LaPlante; Brittain Hill; Jeffrey Pohle; James Rubenstone; Keith Compton; Randall Fedors; Timothy McCartin

Cc: Jack Guttman

Subject: Cambric Documents

Pertinent documents detailing the Cambric site are located on the web. Go to <http://www.osti.gov/bridge/> and then search for "Cambric." There's one report that is entitled "Evaluation of the Transient Source Term for the Cambric Underground Nuclear Test at Frenchman Flat, Nevada Test Site." Also, another pertinent report is Channel Transmission Loss Studies During Ephemeral Flow Events: ER-5-3 Channel and Cambric Ditch, Nevada Test Site, Nye County, Nevada. There may be other documents but I haven't had a chance to peruse them.

Note these reports are big, the transient source term one is 382 pages.  
That's why I'm not sending them to you.

John

**Hearing Identifier:** HLW\_YuccaMountain\_Hold\_EX  
**Email Number:** 308

**Mail Envelope Properties** (a55cb6de-c0d9-483f-93c4-cdd4d39421ee)

**Subject:** Fwd: Re: Bio Partitioning  
**Sent Date:** 3/3/2008 4:45:00 PM  
**Received Date:** 3/3/2008 4:45:36 PM  
**From:** John Bradbury

**Created By:** John.Bradbury@nrc.gov

**Recipients:**  
"LSNReviews" <LSN.Reviews@nrc.gov>  
Tracking Status: None

**Post Office:**

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	2966	3/3/2008 4:45:36 PM
TEXT.htm	7765	

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

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