HLWYM HEmails

From: David Pickett
Sent: Wednesday, April 10, 2002 11:16 AM
To: cgrossman@cnwra.swri.edu
Subject: RE: RE: RE: Gold Sim

Follow Up Flag: Follow up
Flag Status: Flagged

Chris,

I looked at KC_AM_GW_COLLOID in GoldSim. Doing the same calculation I did for KC_PU_GW_COLLOID, I got a mean for log Kd of 5.0, with a standard deviation of 1.0.

Looking at the TSPA-SR model report:

1. Both are discussed, but only KC_AM_GW_COLLOID is shown in figure 6-172, which shows median value SZ transport parameters. Both are shown in figure 6-170 of look-up tables, consistent with both being in GoldSim.

2. Table 6-99 shows median value simulation for KC_AM_GW_COLLOID of 0.01, consistent with GoldSim value for KC_AM_GW_COLLOID_MEDIAN. No median value is given in GoldSim for KC_PU_GW_COLLOID; value in Table 6-99 is 0.00021679.

I guess we don't really know whether or not KC_PU_GW_COLLOID is used anywhere, because the calculation in which Kc is used is offline of GoldSim. Maybe they included the look-up table for Pu in GoldSim in case they decide to use the separate values. The lack of a median value for KC_PU_GW_COLLOID suggests that they aren't yet using this parameter.

I think we can raise the issue for clarification's sake.

David

-----Original Message-----
From: cgrossman@cnwra.swri.edu [mailto:cgrossman@cnwra.swri.edu]
Sent: Tuesday, April 09, 2002 2:26 PM
To: dpickett@cnwra.swri.edu
Subject: Re: RE: RE: Gold Sim

Your calculations look good to me.

I was digging around in some of the DOE reports. My general sense is that they generated two (or more?) inputs for Kc: KC_PU_GW_COLLOIDS and KC_AM_GW_COLLOIDS. The two documents I have read about this (See
below) suggest that ONLY the KC_AM_GW_COLLOIDS parameter was used for all of them. It would be worthwhile to go back into GoldSim and see if KC_AM_GW_COLLOIDS exists and if it is used instead of the Pu counterpart. If this is the case it may be better to verify the Am input parameter instead of Pu.

Earlier you were looking in the UZ transport section. I looked at that and it doesnt seem inconsistent with SZ treatment. There is much less description in the SZ portion of TSPA-SR.

I am still working on writing up something for my parameters. I'll get that to you late today or early tomorrow.

Chris

DOCUMENTS:
1)TSPA-SR
MDL-WIS-PA-000002 REV00
Section 6.3.7.1
Table 6-95 (pg. 410) lists Kc-Am-Gw-Colloid 2)Uncertainty Distribution for Stochastic Parameters
ANL-NBS-MD-000011 REV 00
Section 5.14 (pg. 23) use of Am for all RNs Kc
Section 6.1.4 (pgs. 55-57) explains calculation of Am Kc

----- Original Message -----
From: David Pickett <dpickett@cnwra.swri.edu>
Date: Tuesday, April 9, 2002 10:17 am
Subject: RE: RE: Gold Sim

> Chris,
>
> I re-did the calculation. See the new "Pickett" worksheet in the
> attachedfile. I get a log-normal mean of 1e04, and std dev of 10.
> So they're using
> the Pu distribution discussed on p 386, as opposed to the Am value
> they said they were going to use (mean 1e05, Table 6-90, p 387). So
> we've got a flag to raise here. I suspect that, since writing the
> report, they decided to go with separate numbers for Am(+ Th?) and Pu
> (+ Pa?).
>
> Let me know if you agree with my interpretation after you've had a
> look at the TSPA Model document sections I discussed below.
>
> David
>
> -----Original Message-----
> From: cgrossman@cnwra.swri.edu [mailto:cgrossman@cnwra.swri.edu]
> Sent: Tuesday, April 09, 2002 8:50 AM
> To: dpickett@cnwra.swri.edu
> Subject: Re: RE: Gold Sim
>
>
> David-
>
> That should be it then. I plugged the data set into Excel and plotted
> a histogram of the log (Data/0.03). The log of the distribution looks
> normal. The mean comes out close to DOE's value. Not sure about the
> SD though. The file is attached. I'll send a short write up of what
> I have done shortly. That way you can send Dave a compiled write up
> of what we have accomplished for his summary.
>
> Chris
>
> ----- Original Message -----
> From: David Pickett <dpickett@cnwra.swri.edu>
> Date: Monday, April 8, 2002 4:38 pm
> Subject: RE: Gold Sim

>
> > It looks like the TSPA-SR Model document may have sufficient
> > information.
> > Look at pages 386-387. It says Kc is calculated by multiplying
> Kd for
> > colloids by the colloid concentration. The latter number is taken to
> > be 0.03 mg/L (p 386). The colloid Kd is sampled. It says on p 386
> > that the americiumvalue is used, although they mention a Pu value.
> > The Kd distribution used (Table 6-90, p 387) is log-normal with 1e05
> > ml/g geometric mean and 10 std deviation. It looks like what happens
> > is, offline of GoldSim, the distribution is sampled 100 times and
> > each value is multiplied by
> > 0.03 mg/L
> > (presumably with units handled correctly), producing the lookup
> > table. I guess this is done separately for Pu+Pa and Am+Th (see
> > Table 6- 91). But if the text is to be believed, the same Kd
> > distribution is used in each case.
> >
> > It looks like a way to check this would be to take the data from the
> > table, divide each value by 0.03 mg/L (treat units so that results
> > will be in ml/g), and plot the results. Is it consistent with the
> > given distributionfor Kd?
> >
> > We can look at this together, if you like.
> >
> > David
> >
> > -----Original Message-----
> > From: cgrossman@cnwra.swri.edu [mailto:cgrossman@cnwra.swri.edu]
> > Sent: Monday, April 08, 2002 2:42 PM
> > To: dpickett@cnwra.swri.edu
> > Subject: Gold Sim
> >
> >
> > David-
> >
> > I am having trouble locating the 1-D Table input 'KC_PU_GW_COLLOID'
> > in the AMRs I have searched several and find no mention of it.
> > Could you
> > look up in the GoldSim file to see what the parameter is a function
> > of and what it affects? Also, is there any description associated
> > with this parameter?
> >
> > Its location is
> > TSPA_Model\Saturated_Zone_Transport\SZ_Input_Parameters
> >
>

Hearing Identifier: HLW_YuccaMountain_Hold_EX
Email Number: 671

Mail Envelope Properties (dpickett@cnwra.swri.edu20020410111600)

Subject: RE: RE: RE: Gold Sim
Sent Date: 4/10/2002 11:16:21 AM
Received Date: 4/10/2002 11:16:00 AM
From: David Pickett

Created By: dpickett@cnwra.swri.edu

Recipients:
"cgrossman@cnwra.swri.edu" <cgrossman@cnwra.swri.edu>
Tracking Status: None

Post Office:

Files	**Size**	**Date & Time**
MESSAGE	5925	4/10/2002 11:16:00 AM

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