From: Casey, Carolyn
To: Ballew, Mary
Cc: Wainberg, Daniel
Subject: USM risk eval
Date: Wednesday, March 07, 2018 2:12:00 PM
Attachments: J&E SG3 duplicate suite 157 J RL 2 but .xlsm

Dan, to keep you up to speed, Mary and I discussed the need to get IUR factors from HQ to see what additional risk these 16 COCs may add. It's a long list and Mary may have to pare it down (?) as this may be an unreasonable ask and may take too long. Mary please correct me if I am wrong.

Mary and I may also run the MassDEP short forms with the IDA data to see what we get. Then I will run this by the state.
I have updated the spread sheet that goes along with this data (attached).

Suite 157J (3 soil gas and 3 IDA samples collected)
I selected these COCs (below) as they were detected in both soil gas and IDA and were detected in one or more soil gas samples at concentrations that were in excess of one or more of the 3 IDA concentrations. I did not use what USM claimed as a determination of whether VI is occurring or not (see below), as I cannot find this in MassDEP or EPA guidance and there is no confounding source evaluation.

> "In addition, for vapor intrusion to be present, the concentrations of contaminants in indoor air cannot exceed (or be in the same order of magnitude as) the concentrations in soil gas. Otherwise, the presence of indoor air contaminants would primarily be due to other circumstances, such as indoor air sources or outdoor ambient air contaminants impacting interior building spaces."

Notes:
(1) These COCs were not necessarily detected above the screening levels in either IDA or soil gas. Naphthalene was the only exc in soil gas and carbon tetrachloride, chloroform, isopropyl alcohol and c5-c8 aliphatic hydrocarbons were the only exc in IDA.
(2) No outdoor ambient air sample so no COCs deleted as background.
(3) All IDA samples had very similar results in this suite so assume fairly complete mixing of IDA.
(4) These COCs (below) are in addition to other COCs that have IUR factors. Based on the J&E using soil gas, there is a slight exc of a target risk of 1E-06 here (Northeast ARC) without all of the COC, as there is no IUR factor (3.64E-06 and HQ of 9.74E-02 or 0.1). Of that risk, 3.6E-06 is from the naphthalene. As Mary and I discussed, it would be best to find out if any of these other COC, without an IUR factor, are likely risk drivers. The concentrations are low. Nonetheless, it made sense to add them all up to look at cumulative risk.
(5) obviously it would be best to use the IDA data and not soil gas (especially since the GW is so shallow here and J&E may not even be appropriate) but this was a good start and again, next we will look at the DEP short forms.

No IUR (inhalation unit risk in the J&E Excel spreadsheet for VI)

Chloroethane (ethylene chloride)
Cyclohexane
Dichlorodifluoromethane
Cis12 dichloroethene
Freon 113
hexane
2 butanone (MEK)
m, p xylene
n heptane
o xylene
propylene
styrene
tetrahydrofuran
trichlorofluoromethane
124 trimethylbenzene
135 trimethylbenzene