Message

From: Partridge, Charles [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=27DA56DA9A12472787EF56077099CF36-PARTRIDGE, CHARLES]
Sent: 6/3/2020 6:07:40 PM
To: Fritz, Jason [Fritz.Jason@epa.gov]
Subject: FW: Meconium Support
Attachments: Ettinger et al 2017_MIREC Arsenic.pdf; Arbuckle et al 2016_MIREC Study_Maternal fetal Cd-Pb-Mn-Hg.pdf; Aziz et al 2017_Pakistan.pdf

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From: Partridge, Charles
Sent: Monday, December 2, 2019 12:55 PM
To: Wall, Dan <wall.dan@epa.gov>
Cc: Wendy OBrien <OBrien.Wendy@epa.gov>; Berry, David <Berry.David@epa.gov>
Subject: FW: Meconium Support

I agree Lynn, Me and David Berry noticed the same thing and were talking about it. That is a pretty big screwup to have in a paper and to go to the public with when it may be a unit conversion problem. Surely they would have noticed.

cp

From: Woodbury, Lynn <woodburyl@cdmsmith.com>
Sent: Monday, December 2, 2019 12:49 PM
To: Partridge, Charles <Partridge.Charles@epa.gov>
Cc: Greene, Nikia <Greene.Nikia@epa.gov>; David Shanight <shanightdt@cdmsmith.com>; Curt Coover <cooverca@cdmsmith.com>
Subject: RE: Meconium Support

Hi Charlie –

I've been pulling up recent studies on metal concentrations in meconium. Notably, Canada has done a large study – the Maternal-Infant Research on Environmental Chemicals (MIREC) Study – which provides useful information on expected ranges of metal concentrations. There is also a study out of Pakistan that provides metal concentrations in meconium (along with toxicity thresholds for several metals). In looking at the results of these study, I think it is possible that the McDermott manuscript has a units error. For example, see Table 1 of the Arbuckle paper…I've highlighted the results for manganese in meconium. As shown, the median concentration is 4.9 ***ug/g*** (with a range of 0.24 to 40 ug/g) – converted to ug/kg this would be 4,900 ***ug/kg***. According to the McDermott Table 1, the meconium concentrations are reported in ug/kg. However, if that were true, the values for Butte are within the range reported in the MIREC study, but the South Carolina group are about 1,000 times lower than what was reported in the MIREC study. However, if the South Carolina data were actually ug/g, they would be in alignment with expectations.

So, to summarize, my theory is that the reason for the huge disparity between the Butte and South Carolina cohorts is due to a units error. Once the units are in alignment, the difference between the two datasets is within a factor of 2-4. Take a look at the papers I've attached and let me know if you concur with my findings…

Thanks,
Lynn

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Lynn Woodbury | CDM Smith | 555 17th Street, Suite 500 | Denver, CO 80202 | direct: 303.383.2382 | fax: 303.308.3003 | woodburyL@cdmsmith.com

From: Greene, Nikia <Greene.Nikia@epa.gov>
Sent: Monday, December 2, 2019 8:22 AM
To: Woodbury, Lynn <woodburyl@cdmsmith.com>; Shanight, David <ShanightDT@cdmsmith.com>
Cc: Partridge, Charles <Partridge.Charles@epa.gov>
Subject: Meconium Support

Hi Lynn and David,

Charlie will be coming to Helena/Butte tomorrow and going to a Butte Board of Health Meeting Wed. morning at 7am. I don't know all the details yet but he will be on the agenda to talk about EPA's review of the preliminary meconium study from Hailer (Hailer will also be there). I believe we may need some support from you and Charlie will be reaching out later today. Sorry for the short notice but we don't want this to go down the wrong path.

Thanks,

Nikia Greene
Remedial Project Manager
U.S. EPA, Region 8
(406)-457-5019
greene.nikia@epa.gov