To: Nguyen, Lyndsey[Nguyen.Lyndsey@epa.gov]
From: Daly, Eric
Sent: Mon 2/27/2017 8:21:18 PM
Subject: Re: Question regarding activity to mg/kg conversion

Cool. Off today but I will check up with everyone tomorrow.

Regards,

Eric

"We must, indeed, all hang together, or assuredly we shall all hang separately", Benjamin Franklin
Eric M. Daly
On-Scene Coordinator/Radiological Response Specialist
US Environmental Protection Agency- Region II
ERRD/RPB/PPS
2890 Woodbridge Avenue
Edison, NJ 08837
daly.eric@epa.gov
908-420-1707
On Feb 27, 2017, at 3:19 PM, Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov> wrote:

Yep, I chatted with Gerry today and he confirmed with the laboratory what I needed. We should be moving forward with the maximums.

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Daly, Eric
Sent: Monday, February 27, 2017 12:18 PM
To: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: Re: Question regarding activity to mg/kg conversion

Hi. All ok?

Regards,

Eric

"We must, indeed, all hang together, or assuredly we shall all hang separately", Benjamin Franklin
Eric M. Daly
On-Scene Coordinator/Radiological Response Specialist
US Environmental Protection Agency- Region II
ERRD/RPB/PPS
2890 Woodbridge Avenue
Edison, NJ 08837
daly.eric@epa.gov
908-420-1707
On Feb 27, 2017, at 3:15 PM, Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov> wrote:

Perfect! Thanks a bunch for clarifying the results with me.

For moving forward, all I will need a maximums table for HTC with a new column with the highest results for the on-site HPGe results for each radionuclide. I believe Ben was working on adding the data for HTC. Once I have that, I will run the new calculations.

Thanks,

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Gilliland, Gerald [mailto:Gerry.Gilliland@WestonSolutions.com]
Sent: Monday, February 27, 2017 11:24 AM
To: Nwosu, Bernard <Ben.Nwosu@WestonSolutions.com>; Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>; Daly, Eric <Daly.Eric@epa.gov>
Cc: Fessler, Andrew <Fessler.Andrew@epa.gov>; Denise Breen <denise.breen@westonsolutions.com>
Subject: RE: Question regarding activity to mg/kg conversion

Lyndsey,

As we discussed earlier, I have confirmed that all results, uncertainties, and MDCs for the Holy Trinity Cemetery site were correctly reported under TestAmerica Job ID 160-4913-1 (i.e., TestAmerica accounted for and included dilution factors in their original calculations for the slag samples). In addition, dilutions were not required for the Canadian Radium and Uranium site samples, and all results, uncertainties, and MDCs were correctly reported under TestAmerica Job ID 160-4690-1. Therefore, it is not necessary for you to recalculate any of the values for these projects. The cover pages of the applicable lab reports are attached for your reference (the full reports are too big to email, but let us know if you need a copy).

Please let me know if you need any additional information or if you have any questions.

Thanks.

Gerry G

Gerald V. Gilliland, P.G.
Senior Technical Manager
Weston Solutions, Inc.
205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5826
Cell: (908) 278-0294
Fax: (732) 417-5801
Email: Gerry.Gilliland@westonsolutions.com

From: Nwosu, Bernard
Sent: Monday, February 27, 2017 10:50 AM
To: Nguyen, Lyndsey (Nguyen.Lyndsey@epa.gov) <Nguyen.Lyndsey@epa.gov>; Daly, Eric (Daly.Eric@epa.gov) <Daly.Eric@epa.gov>

Cc: Gilliland, Gerald <Gerry.Gilliland@WestonSolutions.com>
Subject: FW: Question regarding activity to mg/kg conversion

Hi Lyndsey,

Gerry will contact you to discuss how to proceed with Test America regarding the information you need.

Thanks,

Ben Nwosu
Senior Project Scientist / Group Leader
Weston Solutions, Inc.
RST3/ED2

From: Nwosu, Bernard
Sent: Thursday, February 23, 2017 3:54 PM
To: 'Nguyen, Lyndsey' <Nguyen.Lyndsey@epa.gov>; Daly, Eric <Daly.Eric@epa.gov>
Cc: Benton, Tim <Tim.Benton@WestonSolutions.com>; Conway, R. Chad <R.Conway@WestonSolutions.com>; Lisichenko, Peter <lisichenko.peter@epa.gov>; Breen, Denise <Denise.Breen@WestonSolutions.com>; Gilliland, Gerald <Gerry.Gilliland@WestonSolutions.com>
Subject: RE: Question regarding activity to mg/kg conversion

Lyndsey,

We need SAT to discuss this with Test America since they contracted the lab services. We only provided a data table based on the data they reported for each site.

I have copied Denise and Gerry in this email, and I will follow up with them on this.

Please let me know if you have other concerns.

Thanks,

Ben Nwosu
Senior Project Scientist / Group Leader
Weston Solutions, Inc.
RST3/ED2

From: Nguyen, Lyndsey [mailto:Nguyen.Lyndsey@epa.gov]
Sent: Thursday, February 23, 2017 2:52 PM
To: Nwosu, Bernard <Ben.Nwosu@WestonSolutions.com>; Daly, Eric <Daly.Eric@epa.gov>
Cc: Benton, Tim <Tim.Benton@WestonSolutions.com>; Conway, R. Chad <R.Conway@WestonSolutions.com>; Lisichenko, Peter <lisichenko.peter@epa.gov>
Subject: FW: Question regarding activity to mg/kg conversion

Howdy Ben,

I took a look at the lab reports. I couldn't seem to calculate the same activity as the lab so I reached out to Test America just for technical assistance not site specific. Of course, they can't talk to me since I am not the client but I just wanted to ensure that the activity that they reported took into account the dilution factor. I have gotten conflicting answers regarding the dilution factor (see email chain below). I believe the conflict maybe just depends on what value of soil was taken into account during the calculations? Idk. I can't really dive into project specifics with Test America so they will be contacting Weston. Just a suggestion: Could we verify from Test America that the data for NFB and HTC as listed on our tables are correct for the SAT data. They can't really talk with me or else I could have verified all of the data for you. I understand that this doesn't seem relevant but we have based our Action Memos on SAT data

since it gave us the highest concentrations. I can't move forward with the calculations until we know the data is correct. Sorry, I wish I could help more.

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Gish, Erika [mailto:Erika.Gish@testamericainc.com]
Sent: Thursday, February 23, 2017 11:34 AM
To: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: RE: Question regarding activity to mg/kg conversion

The results don't actually change. The dilution factor only changes the RL which is an arbitrary number for radchem. I'll double check with the client to see if they want the reports revised. The RL doesn't factor into the calculations for activity:

"The Requested Limit (RL) for radiochemistry is simply a target for the MDC, and should not be affected/changed due to any aliquot reductions or "dilutions". However, the TestAmerica Lims System (TALS) does not handle the RL for radiochemistry different than for chemistry data. Thus, if a "dilution factor" is listed in the prep batch in TALS, the RL will be multiplied by that factor. To avoid this change to the RL, the laboratory has moved to listing any reduction in aliquot presented to the chemistry by putting the aliquot equivalent into the "initial amount" column in the prep batch. Any "dilution" performed is actually usually achieved by performing a total dissolution on an aliquot, bringing up to a certain volume, and then removing a portion. Thus, it is not truly a dilution in the sense chemistry analyses would employ. The sample results are correct, only the RL may be "incorrect" (although irrelevant after the analysis is completed).

ERIKA K. GISH
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

13715 Rider Trail North
Earth City, MO 63045
Tel 314.298.8566 I Fax 314.298.8757
www.testamericainc.com

From: Nguyen, Lyndsey [mailto:Nguyen.Lyndsey@epa.gov]
Sent: Thursday, February 23, 2017 1:32 PM
To: Gish, Erika
Subject: RE: Question regarding activity to mg/kg conversion

Oh perfect! I didn't take a look at it. Sorry, I should have done that.

So I'm confused. For the previous two reports, the pCi/g results will change for both reports for samples that required diluting?

Lyndsey

Lyndsey Nguyen

Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Gish, Erika [mailto:Erika.Gish@testamericainc.com]
Sent: Thursday, February 23, 2017 11:30 AM
To: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: RE: Question regarding activity to mg/kg conversion

What analysis are we to review for the other job (160-4690)? There were no dilution factors in this job for the radchem.

ERIKA K. GISH
Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

13715 Rider Trail North
Earth City, MO 63045
Tel 314.298.8566 I Fax 314.298.8757
www.testamericainc.com

From: Nguyen, Lyndsey [mailto:Nguyen.Lyndsey@epa.gov]
Sent: Thursday, February 23, 2017 12:43 PM
To: Gish, Erika
Subject: FW: Question regarding activity to mg/kg conversion

I found the other report number. The report number is 160-4690-1 for Canadian Radium and Uranium project.

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Nguyen, Lyndsey
Sent: Thursday, February 23, 2017 10:11 AM
To: 'Gish, Erika' <Erika.Gish@testamericainc.com>
Subject: FW: Question regarding activity to mg/kg conversion

Oh, I didn't realize you were the same person that I had spoken to previously about the dilution factor. I highlighted the relevant information (I had originally was asking about weight when you had caught the discrepancy so there's a lot of other information in the email below). Besides the report that you caught below, I was wondering if you could verify the dilution was taken into account for this report:

160-4913-1 (this is the one mentioned on our phone call today)

I have one other report that I would like for you to verify the activities but I can't seem to find the report. I'll ask Weston to provide the report to me. The project was called "Canadian Radium and Uranium."

Thanks for all of your help!

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Gish, Erika [mailto:Erika.Gish@testamericainc.com]
Sent: Monday, October 10, 2016 2:23 PM
To: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: Re: Question regarding activity to mg/kg conversion

I will need to contact them and see how they want us to address it.
Thanks,

Erika K. Gish
Project Manager
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
13715 Rider Trail North
Earth City, MO 63045
Tel 314.298.8566 I Fax 314.298.8757
www.testamericainc.com

From: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Sent: Monday, October 10, 2016 4:19:55 PM
To: Gish, Erika
Subject: RE: Question regarding activity to mg/kg conversion

Perfect! I did my calculations a little convoluted compared to how simple you guys explained it ☺ I just wanted to make sure that my concept was the same as what the analytical report was stating and that I wasn't missing anything by a factor or two. Looks like we are on the same page (i.e. concentrations are the same no matter how it is diced and that the reported activity in pCi/g takes into account dilutions and aliquot amounts). Thank for all of your help.

Also, for the corrected data, will Weston receive a revised report or notice about the change? I just want to make sure the right folks get the corrected data.

Thanks again!

Lyndsey

Lyndsey Nguyen
Environmental Response Team-Las Vegas
Phone: 702.784.8018
Cell: 702-373-3756
Email: Nguyen.Lyndsey@EPA.gov

From: Gish, Erika [mailto:Erika.Gish@testamericainc.com]
Sent: Monday, October 10, 2016 10:29 AM
To: Nguyen, Lyndsey <Nguyen.Lyndsey@epa.gov>
Subject: Question regarding activity to mg/kg conversion

Lyndsey,
This was the response from our Technical Director:

To convert from pCi/g to mg/kg the only thing needed is the final analyte result in pCi/g. The appropriate conversion factor (specific activity) for a particular isotope needs to be obtained from a reputable source (e.g. National Nuclear Data Center, or other). As an example, to determine the mass concentration for Th-232 when we have an activity concentration result of 1 pCi/g, using a conversion factor of 0.1097 pCi/ug:

(1 pCi/g) ÷ (0.1097 pCi/ug) = 9.12 ug/g = 9.12 mg/kg

That said it looks like we did not correctly apply the "dilution factor" for samples -18 and -20 in the original calculations. When performing a dissolution on 1 gram (nominal) of material but using only 1/50th of that (e.g. we bring the final dissolved material up in 50 mL and use only 1 mL for analysis), we record the actual reduced amount of material used (1 gram ÷ 50 = 0.02 grams) as the aliquot. Only if we are performing a true "dilution" (e.g. a serial dilution) do we now use the dilution factor. This is due to the fact that the Rad RL should never get adjusted (it is just a "requested limit" not a "reporting limit").

The results/uncertainties/MDC for -18 should be 75 times higher and -20 should be 50 times higher. It looks like sample -19 was handled correctly.

I hope this helps...let me know if you have any other questions.

Erika K. Gish
Project Manager
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
13715 Rider Trail North
Earth City, MO 63045
Tel 314.298.8566 I Fax 314.298.8757
www.testamericainc.com

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