Message

From: Wax, Peter N. [pwax@nd.gov]
Sent: 2/24/2021 5:13:48 PM
To: Fleisig, Erica [Fleisig.Erica@epa.gov]
CC: Beaman, Joe [Beaman.Joe@epa.gov]; Kesler, Karen [Kesler.Karen@epa.gov]; Wirick, Holiday [wirick.holiday@epa.gov]; Aaron Larsen [allarsen@nd.gov]; Wert, Joshua E. [jewert@nd.gov]; jnett@nd.gov; Ussatis, Todd J. [tussatis@nd.gov]; Quarnstrom, James E. [jquarnst@nd.gov]
Subject: RE: Things 4 Se Sampling 2021

Dear Erica: In the famous words of Dean Martin at the Oscars: "Thank you, thank you, thank you."

Pete

From: Fleisig, Erica <Fleisig.Erica@epa.gov>
Sent: Wednesday, February 24, 2021 10:49 AM
To: Wax, Peter N. <pwax@nd.gov>
Cc: Beaman, Joe <Beaman.Joe@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Wirick, Holiday <wirick.holiday@epa.gov>; Larsen, Aaron L. <allarsen@nd.gov>; Wert, Joshua E. <jewert@nd.gov>; Nett, Joseph H. G. <jnett@nd.gov>; Ussatis, Todd J. <tussatis@nd.gov>; Quarnstrom, James E. <jquarnst@nd.gov>
Subject: RE: Things 4 Se Sampling 2021

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Pete, we reached out to folks in our R10 lab who recently completed an analysis of selenium (and other parameters) in fish tissue and water from the Kootenai River. They provided the attached QAPPs (one for fish tissue, one for water column data), Sample Plan Alteration form (SPAF 4) that has additional detail about sample prep/processing, SPAF 3 which was for burbot sampling conducted by the Kootenai Tribe of Idaho, and some additional thoughts captured below (with one addendum from Karen). You might find these helpful as you are developing your materials. Additionally, see attached files with "FPES" in the title – these are two QAPPs related to a fish plug evaluation study that our office conducted. Please let us know if you have further questions. -Erica

- A suite of measurements are collected for each fish in the field but the fish have been sent on ice whole to the lab for processing.
- Holding time: The HT begins at the time of collection. Frozen tissue has a 2 year HT for most metals, and 1 year for mercury. Obviously there is a small window where the fish are thawed in order to dissect them. Also, our process is to freeze dry the tissue for metals analysis (not mercury though). We consider freeze dried material as stable as frozen material.
- How do we grind up the samples?: Some of the smallest fish have been chopped up by hand (scalpel, on a watchglass, for example). Most fish and/or fillets are blended in food processors. We blend them prior to freeze drying, and then perform further reduction of "clumps" after freeze drying. This may be done with a mortar and pestle, or again with a food processor.
- Digestion method: We use microwave digestion, and I highly recommend this for tissue digestion. It is highly effective at breaking down the fats and other organic materials. We cite 3052 for the microwave digestion. 3052 has a lot of options for acids used. We use primarily nitric acid with some hydrochloric acid and hydrogen peroxide. HF is not necessary or desirable. If you do not have a microwave available, 3050B would work OK as well.
- Analytical method: Yes, 200.8 (or 6020, both are ICPMS methods) and 200.9 are methods with sufficiently low detection limits. [Additional note from Karen: I believe the 200.8/200.9 methods were used for processing fish tissue that has been digested, not for water samples. I don't think the MDLs of those methods are going to be

low enough for the water samples. It looks like from the water QAPP they used EPA 1638 Mod for processing total dissolved selenium samples.]

Erica Fleisig
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(202) 566-1057

From: Wax, Peter N. <pwax@nd.gov>
Sent: Tuesday, February 23, 2021 9:08 AM
To: Beaman, Joe <Beaman.Joe@epa.gov>; Kesler, Karen <Kesler.Karen@epa.gov>; Fleisig, Erica <Fleisig.Erica@epa.gov>; Wirick, Holiday <wirick.holiday@epa.gov>
Cc: Aaron Larsen <allarsen@nd.gov>; Wert, Joshua E. <jewert@nd.gov>; jnett@nd.gov; Ussatis, Todd J. <tussatis@nd.gov>; Quarnstrom, James E. <jquarnst@nd.gov>
Subject: Things 4 Se Sampling 2021

Dear All:

Yesterday Holly provided me notes on the selenium call last week Wednesday. It woke me up that there is not a lot of time to get everything ready. Spring is nearly here. In the next 3 to 4 weeks a QAPP with appropriate SOPs will need to get put together and any missing supplies ordered.

List of things I could use help with:

1) Methods for Water and Fish:
    a. Flesh: Confirm that 30.50.B is appropriate.
        i. Holding time once prepped and frozen
    b. Water: Dissolved and 200.8 or 200.9?
2) SOPs for flesh (I believe someone offered to Region 10 or Montana's QAPP and SOPs
    a. Field Prep (This is very important. The state lab will deliver I can get them a good sample.
        i. Ice or do we need to freeze (dry ice) in the field.
        ii. How to bag (Plastic or glass?)
        iii. Prep (grinder or hand homogenizing?)
        iv. Stainless steel equipment?
3) Target Species
    a. Which species should be targeted Based on the attached fish list

Obviously more stuff will surface but this should get us going.

My hope is if there are at least a few species (based on eating habits) that might shed additional light for criteria development. If so we target additional samples to develop a subset of these animals as well.

Pete

From: Wert, Joshua E. <jewert@nd.gov>
Sent: Thursday, February 18, 2021 1:52 PM

To: Wax, Peter N. <pwax@nd.gov>
Cc: Larsen, Aaron L. <allarsen@nd.gov>; Nett, Joseph H. G. <jnett@nd.gov>
Subject: Eco 46 Fish Data 2016

Good Afternoon,

I have attached the excel file with 2016 fish data for eco 46. If there is any other information that you would like just let me know.

Josh

Joshua Wert
Division of Water Quality • Watershed Management Program

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