Message

From: Alexander, Shanna [Alexander.Shanna@epa.gov]
Sent: 9/21/2021 12:39:19 PM
To: Richards, Jon M. [Richards.Jon@epa.gov]; Hansel, Joel [Hansel.Joel@epa.gov]; Walker, Stuart [Walker.Stuart@epa.gov]; Burgess, Michele [Burgess.Michele@epa.gov]; Amoroso, Cathy [Amoroso.Cathy@epa.gov]
CC: Frederick, Tim [Frederick.Tim@epa.gov]
Subject: RE: request for call about our Oak Ridge DOE/TN wastewater dispute tech workgroup issue on Fish Meal Approach
Attachments: Roving Creel Survey - Poplar Creek - Report_07302021.docx; EPA-TDEC Fish Meals Calculation rev20SEP2021.xlsx

All,

To support the upcoming discussion, please find attached the TWRA's 2018 creel report and the updated fish meal calculations which now includes the combined ORNL Biological Monitoring and Abatement Program (BMAP) and August 2021 fish sampling information (weights, species, counts) at BCK 3.3. Note that the average fish catch rate based on measurements at BCK 0.7 and 3.3 is actually 43% when rounded. The fish catch rate assumes a 6-hour fishing trip and reflects the 95UCL of the TWRA 2018 Creel Report's catch per hour estimates from Melton Hill as a regional estimate of catch success. The catch success percentage at each POE is determined by dividing the TWRA's catch per hour rate for a 6-hour trip by the number of edible fish at each POE. In addition, please note that EPA's number of fishing trips per year (30 fishing trips) is also based on the TDEC creel survey and represents a time-weighted average for time spent fishing over the course of a year (i.e., 4 trips per month for 6 months and 2 trips per month for 3 months). No fishing was observed for Jan – Mar 2021 resulting in 9 months of fishing per year. Please let us know if you have any questions.

Thanks,

Shanna Alexander, DABT | Toxicologist
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From: Richards, Jon M. <Richards.Jon@epa.gov>
Sent: Monday, September 20, 2021 4:16 PM
To: Hansel, Joel <Hansel.Joel@epa.gov>; Walker, Stuart <Walker.Stuart@epa.gov>; Burgess, Michele <Burgess.Michele@epa.gov>; Amoroso, Cathy <Amoroso.Cathy@epa.gov>; Alexander, Shanna <Alexander.Shanna@epa.gov>
Subject: request for call about our Oak Ridge DOE/TN wastewater dispute tech workgroup issue on Fish Meal Approach

Joel, Stuart, Michelle,
We are hoping we can find an hour [!] next Monday 9/27 or Wednesday, 9/29 afternoons, say 3-4pm?
Glenn Adams advised us to discuss our fish meal approach with you all what Shanna, our R4 risk assessor has outlined below with the attached calculation details. We've been having weekly calls with our counterparts at Oak Ridge since Feb [as a result of the Wheeler Agreement 12/31/20], and after many discussions, we are coming to final conclusions with this group, so we are hoping to get your input/feedback on this key part of the Wheeler Agreement: site-specific fish meal consumption..

Joel, I know has seen some of this but we know Stuart and Michelle have not, so we tried to include below what we've already shared and discussed with DOE & TN:

So let me know if you have preferred time on dates above and I'll set up teams call.

Jon Richards
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US EPA R4, SEMD
Richards.jon@epa.gov
404-431-1340

From: Alexander, Shanna <Alexander.Shanna@epa.gov>
Sent: Monday, September 20, 2021 3:55 PM
To: Richards, Jon M. <Richards.Jon@epa.gov>
Cc: Amoroso, Cathy <Amoroso.Cathy@epa.gov>
Subject: Updated Fish Meal Approach Language

It's been updated to reflect the fish meal method described below. Note that the fish meal is 14.73 not 15.08. Using the updated approach, the fish catch rate went down from 43% to 42%.

EPA's suggested evidence-based fish meal approach incorporates a fish catch rate based on the average of the fish catch rates calculated for two points of exposure (POEs) along Bear Creek (i.e., BCK 3.3 and BCK 0.7). Since a creel survey has not been conducted for Bear Creek, EPA has proposed the use of available information from the August 2021 fish sampling event, fish community survey and the last 5 years of BMAP biomonitoring fish counts for BCK 3.3 (which had inadequate fish species collected to derive a reliable fish catch rate). The method factors information from the 2018 TWRA roving creel survey conducted by TDEC for Melton Hill (a nearby location on the Oak Ridge Reservation). This information was used to inform the fish catch rate and the number of fishing trips per year. The fish catch rates are based on a 6-hour per fishing trip rate and the number of fishing events are time-weighted over a 9-month fishing period as reported in TDEC's roving creel survey for Melton Hill. This resulted in a total of 30 fishing trips per year. The fish catch rates were combined with information regarding the number of fishing events and the average weight of the fish at each POE to calculate a representative number of fish meals.

Although three POEs (BCK 3.3, BCK 0.7 and EFK 1.0) were initially selected for the fish community survey and August 2021 fish sampling event, EPA elected to exclude the fish catch rate derived for the furthest downstream POE (EFK 1.0) since it is not a part of Bear Creek, but East Fork Poplar Creek. The average fish catch rate for BCK 0.7 (58%) and BCK 3.3 (26.9%) is 42%. Due to the limited fish count reported for BCK 3.3 during the August 2021 fish sampling event (i.e., 1 fish collected), TDEC's fish catch rate method overestimated the catch rate at BCK 3.3 (i.e., 700%). Therefore, EPA expanded the fish count by incorporating the last 5 years of BMAP data collected for BCK 3.3. Note that by increasing the average weight/biomass available at BCK 3.3, this allows for better and more reliable estimation of the fish catch rate.

Finally, to derive a representative fish meal estimate for the entire Bear Creek based on the estimates calculated for the two reasonable maximum POEs (BCK 0.7 and BCK 3.3), EPA took the average of the calculated fish meals for the two POEs (see attached spreadsheet). This yielded 14.73 fish meals per year.

Shanna