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MCRD PARRIS ISLAND
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EMAIL REGARDING U S EPA REGION IV COMMENTS ON NORMALIZED DATA FOR FISH
TISSUE RISK ASSESSMENT FOR SITE 3 CAUSEWAY LANDFILL MCRD PARRIS ISLAND
SC
3/10/2010
U S EPA REGION IV

From: Llamas.Lila@epamail.epa.gov
To: [Sladic, Mark](#)
Cc: [Smith, Preston](#); [Jupin, Bob](#); [Churchill, Peggy](#); [Barclift, David J CIV NAVFAC LANT, PNBC](#)
Subject: Re: FW: Parris/ Fish : Tukey's on normalized data
Date: Wednesday, March 10, 2010 11:06:57 AM
Importance: High

I was thinking just the opposite based on what Tom Dillon had said. The outlier question was what had sent me to Tom Dillon in the first place. My original question to Tom was asking how we compare fish concentrations across fish and across data sets, when looking for outliers and doing the screening, since we have collected fish of fairly different size and age, not to mention species. He stated that to compare you must normalize. For PCBs and DDTs you first lipid and then size normalize. For Mercury you only size normalize. You may then compare within species, but not across species. So I am expecting he will say we should apply any statistics, such as Tuckey's, to the normalized data when we are looking for those which exceed the screening values, as well as looking for outliers, and do this within each fish species.

Applying Tuckey's to the original data raises concerns which caused me to ask the question of Tom in the first place. Were those fish that were found to be outliers, simply 1.5 times bigger and longer and fatter and older, rather than did they pick up something somewhere else that does not fit the normal uptake rate of fish exposed to the same pond food sources? Data normalization takes these questions out of the argument, and makes your findings less questionable, and therefore more defensible.

But maybe I missed something.....It would not be the first time!!

Tom and Tim are both out of town, but left me messages saying they would look at the email and get back to me. I will let you know if they have any answers.

-----"Sladic, Mark" <Mark.Sladic@tetrattech.com> wrote: -----

To: Lila Llamas/R4/USEPA/US@EPA
From: "Sladic, Mark" <Mark.Sladic@tetrattech.com>
Date: 03/10/2010 09:55AM
Cc: "Smith, Preston" <Preston.Smith@tetrattech.com>, "Jupin, Bob" <Bob.Jupin@tetrattech.com>, "Churchill, Peggy" <Peggy.Churchill@tetrattech.com>, "Barclift, David J CIV NAVFAC LANT, PNBC" <david.barclift@navy.mil>
Subject: FW: Parris/ Fish : Tukey's on normalized data

Hi Lila – I ran down your question with some technical folks. Please see below. In addition, please note that since Tukey's 'worked' without any additional data set manipulation (normalization), we'd be inclined to think it might be a little more defensible as presented. Thanks. MS

From: Smith, Preston
Sent: Wednesday, March 10, 2010 9:11 AM
To: Sladic, Mark
Subject: Tukey's on normalized data

Hi Mark,

When we normalized the data there were still a couple of outliers. Because the normalization did not add additional benefit to the background comparisons, we just ran the Tukey's on the raw data. I can have Ann-Marie look at the individual congeners for the normalized data, but I am not sure it will give us any different results. The data really sort of flip-flopped with the normalization. The mullet concentrations dropped and the drum species concentrations increased because the mullet had higher %lipids.

Preston

Preston Smith | Ecological Risk Assessor/Environmental Scientist III

Direct: 412.921.8167 | Main: 412.921.7090 | Fax: 412.921.4040

preston.smith@tetratech.com

Tetra Tech NUS, Inc. | Chemistry and Risk Assessment

661 Andersen Drive Foster Plaza No. 7 | Pittsburgh, PA 15220 | www.tetratech.com



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