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SENT VIA EMAIL TO: paula.wilson@deq.idaho.gov

Ms. Paula Wilson
Idaho Department of Environmental Quality
1410 N. Hilton, Boise, ID 83706

Re: Docket: 58-0102-1801, Human Health Water Quality Criteria for Arsenic

Dear Ms. Wilson:

The Department of Environmental Quality (Department) held a negotiated rulemaking meeting on July 23 to revise the arsenic human health water quality criteria. The J.R. Simplot Company (Simplot) has participated in past meetings on this rulemaking and retained Arcadis U.S. Inc. (Arcadis) to attend this meeting. Simplot has the following comments for the Department's consideration in regards to the upcoming field work.

Sample Locations

The sample sites selected by the Department should provide a good representation of arsenic concentrations in the water column and fish tissues.

Minimum Detection Limits (MDL) for Tissue Samples

The Department and stakeholders all realize the importance of achieving at least the same 0.002 mg/kg MDL as the sampling/study in 2008 for inorganic arsenic in fish tissue and, hopefully, actually lowering that MDL. Because of changes in the method certification process over the past decade, the analytical laboratory is unable to assure the Department that it will be able to achieve an MDL lower than the current 0.004 mg/kg. If concentrations of inorganic arsenic in fish tissue continue to be non-detectable at the current MDL, the 2019 sampling effort will not provide new insights about the actual concentration of inorganic arsenic in fish tissue. Simplot encourages the Department to work with stakeholders to refine the current MDL.

Predicting Arsenic Concentrations in Fish Tissues

During this rulemaking process, Simplot has provided the Department with white papers and comments demonstrating the benefits of a regression-based approach to derive bioaccumulation factors (BAFs). Those white papers and comments have demonstrated that the regression approach better predicts measured concentration of arsenic in fish tissue collected from Idaho surface waters than BAFs derived using other approaches or based on non-Idaho data. Simplot continues to urge the Department to adopt a regression-based approach when developing BAFs. During the rulemaking meeting EPA scientists pointed out that regression-based approaches have been used to estimate bioaccumulation from sediments and saw no reason it would not work for surface water as well. Lastly, to Simplot's knowledge, the paired arsenic surface water and fish tissue data collected in 2008 combined with the data to be collected this fall represent the most extensive data set available, and those data are specific to Idaho surface waters. When developing BAFs for Idaho, those data should take primacy over data collected in other areas of the United States or for non-Idaho species.

Surface Water Sample Collection

During the rulemaking meeting, EPA scientists suggested that when collecting the surface water sample that is paired with a fish tissue sample, that the Department collect a composite water sample from the stream reach rather than a single grab to better represent the arsenic concentration in the surface water in which the fish live. Simplot believes the Department should adopt such an approach. For example, during the discussion on this topic during the rulemaking meeting, the Department indicated that fish are typically collected from a reach of a stream, rather than a single point. The Department could collect a composite sample from each reach where that composite sample is comprised of five (5) grab samples, one from each end of the reach and three others about equally spaced within the reach. Such a composite sample would better represent the surface water throughout the reach than a single grab sample from a single point within the reach.

Assigning Concentrations to Non-Detects

The Department needs to be prepared for the possibility (likelihood) that most fish tissue samples will have non-detected concentrations of inorganic arsenic. Given that 53 of 54 fish tissue samples in 2008 had non-detectable concentrations of inorganic arsenic at a MDL of 0.002 kg/kg, it seems very unlikely that all 53 samples with non-detectable concentrations had a concentration equal to 0.002 mg/kg. Particularly given that concentrations of inorganic arsenic and total arsenic in surface water varied by more than 100-fold and that concentrations of total arsenic in fish tissue varied by more than 10-fold. The Department should explore approaches to assigning a concentration(s) to non-detects other than simply assuming that because the concentration could be equal to the MDL, it should be assumed to be equal to the MDL. This is an important matter when calculating a BAF or the ratio of total to inorganic arsenic in fish tissue due to the detection limits and trace concentrations of inorganic arsenic in these samples.

Other Data Sets

Simplot encourages the Department to issue a call for data from the regulated community and other stakeholders. Over the years, studies may have been conducted by members of the regulated community (such as in northern Idaho) looking at arsenic concentrations in the water column and fish tissues.

We appreciate the input that the Department is seeking to this important study and the opportunity to provide information for consideration. Please contact me at (208) 780-7365 if you have any questions.

Sincerely,



Alan L. Prouty
Vice President, Environmental & Regulatory Affairs

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