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June 6, 2018

SENT VIA EMAIL TO: [paula.wilson@deq.idaho.gov](mailto:paula.wilson@deq.idaho.gov)

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

Dear Ms. Wilson:

The Department of Environmental Quality (the Department) has commenced a rulemaking to revise the arsenic human health water quality criteria. During the May 23, 2018 negotiated rulemaking meeting, the Department requested comments on several subjects including: (a) approaches to identify appropriate background; (b) approaches to calculating BAF, and (c) comments on other issues discussed.

The J.R. Simplot Company (Simplot) has numerous operations in Idaho (such as mining, food and fertilizer manufacturing) which may be affected by changes to Idaho's water quality criteria. Thus, Simplot has a direct interest in this rulemaking and offers the following comments on the subjects raised by the Department.

### **1. Establishing Background**

At the rulemaking meeting, DEQ presented several alternatives for establishing background. One alternative was basing background on a specific percentile of the state-wide distribution of arsenic concentrations in surface water. DEQ showed an example using the 75<sup>th</sup> percentile. Simplot recommends that DEQ not use the "percentile" approach to establish background. It would mean that some portion of Idaho surface waters (the portion with concentrations above the selected percentile) would exceed the human health criteria (HHC) due solely to naturally occurring arsenic concentrations. The arsenic HHC needs to recognize the full range of naturally occurring background concentrations of arsenic in Idaho surface waters. All dischargers, regardless whether present on low or high natural background receiving waters, should be treated equally with regard to consideration of background concentrations.

### **2. BAF Data and Methodology**

With regard to the data used to establish a BAF, the Department asked for input as to whether data from outside of the state, including data from saltwater systems, should be considered. Given the availability of paired state-wide data collected in 2008, Simplot does not recommend inclusion of other data unless those other data can be shown to be of equal or higher quality than the Department's own 2008 data and those non-Idaho data can be shown to representative of conditions and fish present in Idaho. Simplot

appreciates that the paired 2008 data may be considered by some as “limited” because they consist of “only” 54 samples from larger Idaho streams and rivers. However, those data were collected using a probabilistic methodology designed to be representative of the cross section of all larger Idaho streams and rivers and robust collection and analytical methods. Furthermore, this data set was gathered specifically to help answer questions around arsenic concentrations in Idaho waters and what the biological accumulation of arsenic is in Idaho waters.<sup>1</sup> It seems unlikely that another currently available dataset exists that would be more representative and appropriate to evaluate arsenic accumulation in Idaho surface waters.

During the May 23, 2018 rulemaking meeting the Department also asked whether it should limit consideration of BAFs to those derived from “(relatively) low ambient concentrations” of arsenic when calculating BAFs. During the May 23, 2018 rulemaking discussion, the concentrations to which “relatively low” referred was unclear. Simplot recommends that all data representative of arsenic concentrations in Idaho surface waters be used to derive BAFs. In other words, BAFs should be based on all the data collected by the Department in 2008 and not just data from “relatively” low ambient concentrations present in Idaho surface waters.

With regard to the methodology used to establish a BAF for arsenic in Idaho waters, Simplot’s comments in response to information presented at the April 19, 2018 rulemaking meeting described and presented examples of why the commonly used “ratio” approach to derive BAFs is not representative of arsenic bioaccumulation in Idaho fish. Simplot’s comments in response to the April 19, 2018 meeting described and presented the results of a linear regression approach that better represents accumulation of arsenic by Idaho fish. The information presented at the May 23, 2018 rulemaking meeting continues to suggest that the linear regression approach is superior to the ratio approach and Simplot continues to recommend that the Department use the former (linear regression) instead of the latter (ratio). At the May 23, 2018 meeting, the Department did present a BAF based on a power function (i.e., a curvilinear regression). The curvilinear regression presented did not fit available data as well as the linear regression indicating that of the regression models evaluated to date, the linear regression presented by Simplot fits the data best and should be used to develop a BAF. However, if an alternative regression model can be identified that fits the available data better than the linear regression model, it could be used to estimate the BAF in Idaho fish.

### **3. Fish Consumption Only HHC for Arsenic**

During the May 23, 2018 rulemaking meeting, the Department indicated that an arsenic HHC protective of fish consumption only is necessary because fish consumption must be considered given the existence of nearly 97,000 stream miles of waters in Idaho designated for fish consumption only (i.e., recreational use) and not a domestic water supply.

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<sup>1</sup> This data was gathered in response to the 2007 discussions on revising Idaho’s human health water quality criterion.

As shown in our April 30, 2018 comments, when the fish consumption exposure assumptions used by the Department to develop the 2016 HHC are combined with the state-wide fish concentration data collected in 2008, the estimated cancer risk for 53 of 54 samples is well below the acceptable risk threshold. Even the single fish sample with a detectable concentration of 0.006 milligrams per kilogram (mg/kg) inorganic arsenic has a potential risk below the Department's acceptable risk threshold. Simplot believes such an evaluation of the potential risks represents the required consideration of potential fish consumption risks associated with arsenic in fish.

Additionally, the paired state-wide data collected indicate that inorganic arsenic concentrations in fish are not related to arsenic concentrations in surface water, at least at the detection limits available to date. Concentrations of inorganic arsenic in all except one fish sample were non-detect at a detection limit of 0.002 mg/kg even though inorganic arsenic concentrations in water ranged from 0.02 micrograms per liter (ug/L) to over 8 ug/L. A range of over 400-fold. These paired data provide strong indication that inorganic arsenic concentrations in fish are independent of inorganic arsenic concentrations in water. In such instances, establishing a HHC will have no effect on the concentration of inorganic arsenic in fish and potential risks associated with consumption of such fish.

For both of the above reasons, Simplot recommends that the Department carefully consider whether the need exists to develop arsenic HHC that include consumption of fish. If the Department determines that such HHC continue to be necessary, that such criteria recognize the low levels of inorganic arsenic in Idaho fish and the absence of data that allow for the establishment of a relationship between inorganic arsenic in water and fish.

#### **4. Arsenic Toxicity and Implementation**

Simplot encourages the Department to continue to consider all options that lead to a protective and pragmatic (i.e., achievable) arsenic human health criteria (HHC). That includes the possibility of re-evaluating the carcinogenic toxicity of arsenic and the methodology used to estimate the potential cancer risk associated with arsenic. As Simplot noted in its April 30, 2018 comments, if DEQ were to use the same exposure assumptions and allowable risk thresholds as it used to develop the 2016 HHC for other compounds, the resulting arsenic HHC would be exceeded by naturally concentrations of arsenic in most Idaho rivers that have been sampled to date. Given the Department's stated preference to not change the exposure assumptions or allowable risk thresholds, Simplot recommends consideration of an option that involves evaluating alternative approaches to assessing toxicity of arsenic. The ultimate effect on the arsenic HHC of an alternative approach to assessing arsenic's carcinogenic toxicity is unknown at this time, but it is an option with the possibility of leading to a protective and achievable HHC in Idaho.

The State of Idaho has wrestled for over two decades with reconciling the uncertainty in the science on the toxicity of arsenic, differences in EPA regions as to what criteria for arsenic is acceptable, and how to account for naturally high concentrations of arsenic in

Idaho groundwater and surface water.<sup>2</sup> Attached is a 2007 letter from DEQ Director Hardesty which describes well the difficulties regarding the practical implementation of an arsenic HHC, such as the National Toxics Rule value. Thus, due to these difficulties, implementation tools (such as variances) may have limited utilization. Developing an alternative approach to assessing toxicity and accounting for background conditions are likely key to have a workable standard for the Idaho regulated community.

We appreciate the opportunity to comment on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'A.L. Prouty', with a large, stylized flourish at the end.

Alan L. Prouty  
Vice President  
Environmental and Regulatory Affairs

Attachments (2)

Cc:  
Idaho Association of Commerce and Industry  
Idaho Mining Association  
North American Metals Council

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<sup>2</sup> Attached is a table showing EPA approved arsenic HHC as of 2008; as shown there was considerable differences in the country, especially with Western states as compared to Eastern states.

**State- Adopted Arsenic Criteria as of December 2008**

State	water + org (ug/L)	org only (ug/L)
<b>REGION 1</b>		
Connecticut	0.011	0.021
Maine	0.018	0.14
Massachusetts	0.018	0.14
New Hampshire	0.018	0.14
Rhode Island	0.18	1.4
Vermont	0.02	1.5
<b>REGION 2</b>		
New Jersey	0.017	0.061
New York	50	
Puerto Rico	0.18	1.4
Virgin Islands		0.14
<b>REGION 3</b>		
Delaware	10	
DC		0.14
Maryland	10	41
Pennsylvania	50	
Virginia	10	
West Virginia	50 <sup>1</sup>	50 <sup>1</sup>
<b>REGION 4</b>		
Alabama		
Florida	50	50,36
Georgia		
Kentucky	10	
Mississippi	24	0.078
North Carolina	10	10
South Carolina	0.018	0.14
Tennessee	10	10
<b>REGION 5</b>		
Illinois		
Indiana	0.022	0.175
Michigan		
Minnesota		
Ohio	10	
Wisconsin	0.185	50

State	water + org (ug/L)	org only (ug/L)
<b>REGION 6</b>		
Arkansas		
Louisiana	10	
New Mexico	2.3	9
Oklahoma		205
Texas	50	
<b>REGION 7</b>		
Iowa	0.18	50
Kansas	10	20.5
Missouri	50	
Nebraska	50	
<b>REGION 8</b>		
Colorado	0.02	7.6
Montana	10	
North Dakota	10	
South Dakota	0.018	0.14
Utah	10	
Wyoming	10	10
<b>REGION 9</b>		
Arizona	50	1450
California	50	
Hawaii		
Nevada	50	
Guam	5	
Northern Mariana Islands	5	0.14
American Samoa	10	
<b>REGION 10</b>		
Alaska*	0.018	0.14
Idaho	50	50
Oregon**	0.0022	.0175
Washington*	0.018	0.14

**NOTES:**

Blank cells indicate absent information.

Regions 3, 8, & 10 up to date as of 12-16-08, other regions as of May 2008.

<sup>1</sup> 10 ug/L adopted but not yet approved.

\*Alaska and Washington are under the 1992 NTR for As human health criteria.

\*\*Oregon updated their criteria on May 20, 2004 to the current 304(a) / NTR As criteria.



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

June 28, 2007

Justin Hayes  
Program Director  
Idaho Conservation League  
P.O. Box 844  
Boise, ID 83701

RE: Idaho's Human Health Arsenic Water Quality Criteria, reply to ICL letter of April 5, 2007

Dear Mr. Hayes:

Idaho's current arsenic criteria were properly adopted under Idaho Administrative Procedures Act and were submitted to EPA for approval as required by the Clean Water Act (CWA) eight years ago, in April of 1999. This was before the May 30, 2000 "Alaska ruling". CWA regulations make it clear that water quality standards (WQS) adopted and submitted to EPA before May 30, 2000 are the applicable WQS for CWA purposes, unless or until EPA promulgates a more stringent standard. 40 CFR 131.21(c). Consequently the adopted arsenic criterion is effective for Clean Water Act purposes including NPDES permitting.

As you know, Idaho attempted to revise its CWA human health (HH) arsenic criteria to 10 ug/L two years ago. That rulemaking proposal was rejected by stakeholders during the negotiations based on two reasons. First were questions about the appropriateness of applying a drinking water criterion to all surface waters. Second was the concern for cities with a ground water based public water supply that exceeds the 10ug/L arsenic criterion and the associated arsenic concentration in the NPDES wastewater discharge, a situation not uncommon in Idaho. This is made even more difficult by the fact that efforts to treat water supplies to achieve the new drinking water requirement will likely leave even higher concentrations of arsenic to be discharged by public wastewater systems.

Idaho remains interested in revising its arsenic HH criteria, but the right criterion is not clear. EPA no longer supports its nationally recommended CWA arsenic HH criteria. While EPA has approved adoption of 10 ug/l in other states as a CWA standard, the appropriateness of using a drinking water maximum contaminant level for untreated surface water remains questionable.

You may not know that work is currently underway to acquire data on arsenic bioaccumulation rates in Idaho fish. That data is expected to position Idaho to propose a criterion that is more suited to Idaho. Until DEQ has this information I believe rulemaking would be premature.

Sincerely,

Toni Hardesty  
Director, DEQ

C: Douglas Conde, DEQ  
Michael McIntyre, DEQ  
Lisa Macchio, EPA

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