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CORPORATE HEADQUARTERS

Hand Delivered

January 30, 2012

Mr. Don Essig
Water Quality Standards Coordinator
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706

Dear Mr. Essig:

As you are aware, the J.R. Simplot Company (Simplot) began work in 2006 studying the toxicity effects of selenium on the aquatic environment near the Smoky Canyon Mine. This work also included extensive trout population studies on local streams. On the basis of this work, the technical information now exists to support a site specific chronic criterion for selenium for Sage and Crow Creeks in southeastern Idaho.[1]

The water quality rules for the State of Idaho provide for the establishment of site-specific water quality criteria. The development of a proposal document and the proposed criteria itself has to meet the requirements found in the Idaho Administrative Code, IDAPA 58.01.02.275. Specifically, the rules state:

> **01. Procedures for Establishing Site-specific Water Quality Criteria.** The water quality criteria adopted in these standards may not always reflect the toxicity of a pollutant in a specific water body. These criteria also represent a limited number of the natural and human-made chemicals that exist in the environment which may pose a threat to designated or existing beneficial uses. Thus, it may be possible in some water bodies to develop new water quality criteria or modify existing criteria through site-specific analyses which will effectively protect designated and existing beneficial uses. (8-24-94)
>
> **a.** The following are acceptable conditions for developing site-specific criteria: (8-24-94)

[1] Specific stream segments are identified in the Proposal document. Two water body units of the Salt Sub basin are potentially affected, including water body US-9 (Sage Creek) and water body US-8 (Crow Creek) as defined by the Idaho Administrative Code's Water Quality Standards (IDAPA 58.01.02). These two subunits are defined as US-9 Sage Creek (source to mouth); and US-8 Crow Creek (source to Idaho/Wyoming border).

i. Resident species of a water body are more or less sensitive than those species used to develop a water quality criterion. (8-24-94)

(1) Natural adaptive processes have enabled a viable, balanced aquatic community to exist in waters where natural background levels of a pollutant exceed the water quality criterion (i.e., resident species have evolved a greater resistance to higher concentrations of a pollutant). (8-24-94)

(2) The composition of aquatic species in a water body is different from those used to derive a water quality criterion (i.e., more or less sensitive species to a pollutant are present or representative of a water body than have been used to derive a criterion). (8-24-94)

ii. Biological availability and/or toxicity of a pollutant may be altered due to differences between the physicochemical characteristics of the water in a water body and the laboratory water used in developing a water quality criterion (e.g., alkalinity, hardness, pH, salinity, total organic carbon, suspended solids, turbidity, natural complexing, fate and transport water, or temperature). (8-24-94)

iii. The affect of seasonality on the physicochemical characteristics of a water body and subsequent effects on biological availability and/or toxicity of a pollutant may justify seasonally dependent site-specific criteria. (8-24-94)

iv. Water quality criteria may be derived to protect and maintain existing ambient water quality. (8-24-94)

v. Other factors or combinations of factors that upon review of the Department may warrant modification to the criteria.

The proposal (enclosed) is based on 275.01.a.(v). A combination of factors, including the local species being less sensitive to selenium than those used to derive the chronic criteria is the justification for the proposed site specific criterion.

Accompanying the proposal is a Technical Support Document (TSD). The TSD was developed in accordance with IDAPA 275.01.b which requires that the technical information that is the basis of any proposal be developed with the involvement of the department.

275.01.b. Any person may develop site-specific criteria in accordance with these rules. To insure that the approach to be used in developing site-specific criteria is scientifically valid, the Department shall be involved early in the planning of any site-specific analyses so that an agreement can be reached concerning the availability of existing data, additional data

needs, methods to be used in generating new data, testing procedures to be used, schedules to be followed and quality control and assurance provisions to be used. (8-24-94)

The department has facilitated a number of meetings and conference calls with Simplot and a number of other state and federal agencies over the past several years to review study plans and results. Specific agencies involved with reviewing and commenting on study plans and results included the Idaho Department of Environmental Quality, the Environmental Protection Agency, the Wyoming Department of Environmental Quality, Idaho Department of Fish and Game and the U.S. Forest Service.

A draft document was submitted to the Agencies, titled *Draft Interpretive Findings for Field and Laboratory Studies and Literature Review in Support of a Site-Specific Selenium Criterion* (Interpretive Report). The TSD is the final version of the *Interpretative Report* and incorporates the comments received from the agencies in a December 2, 2010 meeting and the following additional feedback:

IDEQ (Don Essig, Michael Rowe, Lynn Van Every) via memos -11/23/2010 and 12/17/2010;

USFS (Steve Bauer) - 9/8/2010, 12/21/2010;

EPA (draft comments) - 12/21/2010, verbal comments – 3/30/2011; and

Wyoming DEQ (David Waterstreet), 12/20/2010.

All written comments and responses are included as Appendix G of the TSD. Attached to this letter is a summary of the major revisions to the TSD based on the comments and questions received from the agencies.

The proposed criterion, 20.8 mg/kg dw, is based on the selenium concentration in trout egg tissues. Simplot has proposed an implementation methodology utilizing a tiered monitoring approach. The tiered monitoring approach is based on relationships developed between selenium in the water column to ultimately the selenium in trout egg tissues.

We look forward to continuing to work with the Department on this important proposal.

Sincerely,

Alan L. Prouty
Vice President,
Environmental and Regulatory Affairs

Attachment A
Enclosures (2)

C: with attachment and enclosures

Lisa Macchio, U.S. EPA
Charles Delos, US EPA
Dave Waterstreet, Wyoming DEQ
Dave Teuscher, IDFG
Mary Kauffman, US Forest Service

ATTACHMENT A
SUMMARY OF CHANGES MADE TO TSD BASED ON AGENCY COMMENTS.

To aid in review of the revised document, we have briefly summarized the major revisions that have been made to the document in response to the workgroup comments. A comment by comment response document is presented along with the comments received in Appendix G of the Technical Support Document. Major revisions include the following:

- Further discussion is provided in Section 2.3 (Background Locations) concerning the use of Deer Creek as a background location.
- A new section, Section 2.4, and additional graphics have been added describing the greater extent of elevated selenium levels (Wyoming data). Potential impacts in Wyoming and possible approaches to address these impacts are also addressed in a new section (Section 7).
- A new section, Section 5.1.4 (Summary of Brown Trout Maternal Studies), has been added to address EPA's comments regarding the results of additional modeling options using the TRAP software. Revised dose response modeling results in a new brown trout threshold value for survival.
- Additional information has been added to Section 6.2.1 (Maternal Transfer Studies in Fish) to clarify that protection of brown trout likely protects at least 95 percent of the whole community. A species sensitivity distribution for vertebrates and invertebrates was developed to evaluate species sensitivity of benthic invertebrates relative to fish species.
- A new Section (6.4) has been added which is titled, Relationships of Aqueous Selenium Concentrations and Fish Tissue Selenium Concentrations. This section describes the process for derivation of an aqueous selenium concentration from an effects threshold for selenium in egg tissues. It steps through the process of how the site-specific data were integrated, what K_ds and TTFs were developed, and provides a final aqueous selenium value to use as a trigger value.
- The revised report includes a new chapter on how to implement a site-specific criterion (Chapter 7). An iterative process is described that provides for monitoring actions, timing, frequency, and decision tree based on compliance or non-compliance with the monitoring target. This section also discusses protection of downstream uses and applicability of the site-specific criterion (geographic range).
- Three appendices have been revised to more clearly present exposure conditions, habitat and population characteristics, and biological community characteristics. The result of this effort yields stronger, more scientifically-defensible technical reports.