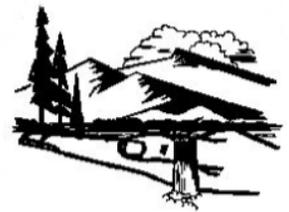




Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Matthew H. Mead, Governor



Todd Parfitt, Director

October 6, 2017

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

Via email to: Paula.Wilson@deq.idaho.gov

RE: Proposed Rule to Update Selenium Criteria for Aquatic Life; Docket No. 58-0102-1701

Dear Ms. Wilson,

The Wyoming Department of Environmental Quality, Water Quality Division (WDEQ/WQD) administers the Clean Water Act in the State of Wyoming. Accordingly, WDEQ/WQD is responsible for protecting and restoring surface water quality throughout the State. As described in WDEQ/WQD's August 1, 2017 comment letter, a 15.6 mile segment of Crow Creek was added to Wyoming's 303(d) List in 2014 due to the discharge of selenium from Smoky Canyon Mine in Idaho. As such, WDEQ/WQD continues to have a vested interest in the Idaho Department of Environmental Quality's (IDEQ) selenium criteria, particularly the proposed site-specific criterion for the *Subsection of Salt Subbasin - Crow Creek* near the mine.

WDEQ/WQD has reviewed JR Simplot Company's (Simplot) revised proposal dated August 2017 that describes the development of site-specific selenium criteria (SSSC) for the Subsection of Salt Subbasin and IDEQ's Proposed Rulemaking in the September 6, 2017 issue of the Idaho Administrative Bulletin that includes the SSSC. WDEQ/WQD has also reviewed IDEQ's response to comments in the Negotiated Rulemaking Summary that was released following the negotiated rulemaking period.

WDEQ/WQD recognizes that these documents now present a criterion specific to Crow Creek rather than the Salt Subbasin as whole and this new criterion consists of a water column element of 4.1 µg/L that will meet Wyoming's current 5 µg/L chronic selenium criteria. Although this is an important step forward, it is not clear whether the 4.1 µg/L criterion can or will be met given that concentrations of selenium in Crow Creek are currently around 20 µg/L. Further, if Wyoming were to adopt the US Environmental Protection Agency's (EPA) national recommended selenium criterion, WDEQ/WQD questions whether the more stringent 3.1 µg/L water column value can be met. In addition, WDEQ/WQD is concerned that Idaho will not require their proposed water column element to be met in circumstances where fish tissue elements have been met, thus allowing for water column values that will exceed Wyoming's current criteria.

Lastly, WDEQ/WQD still has concerns regarding the substantial increase in selenium concentrations that occurred during Simplot's study and how the water quality data collected during this time affect the calculation of whole-body and water column elements of the SSSC. These concerns were not addressed in the revised proposal or the Negotiated Rulemaking Summary and are therefore reiterated below.

Water Column Criteria

Although the revised Crow Creek SSSC water column element meets Wyoming's current chronic selenium criteria at the Idaho-Wyoming border, it is unclear whether the criteria will actually be met given that current concentrations of selenium near the state line are around 20 µg/L. Simplot does identify in the *Implementation Plan* (Appendix E) that remedial actions were first implemented in 2006 and that a water treatment facility was installed onsite and began operation in 2016. Simplot also notes that despite these activities, exceedances of the criteria are expected to occur for the next several years until steady state conditions are achieved. The proposal would therefore benefit from additional evaluation on how these actions will impact the legacy effect of groundwater contamination and its influence on downstream surface waters. This evaluation would help clarify whether or not the criterion is attainable and thus an appropriate goal for Crow Creek.

WDEQ/WQD is also concerned since the proposed water column concentration is greater than EPA's recommended value of 3.1 µg/L. If Wyoming were to adopt EPA's recommended criterion in the future, WDEQ/WQD questions whether this more stringent value is attainable in Crow Creek. WDEQ/WQD requests that Simplot address this potential scenario in the proposal.

WDEQ/WQD also requests assurance that Wyoming's current selenium criteria will be met in Crow Creek given that Idaho's fish tissue elements have primacy over the water column element, similar to EPA's recommendations. For example, if instream selenium concentrations in Crow Creek are above IDEQ and WDEQ/WQD's water column value (>5 µg/L), yet whole-body and/or egg-ovary concentrations in Idaho are below their respective SSSC values, there would be an exceedance in Wyoming, but not in Idaho. WDEQ/WQD therefore requests Simplot identify how this situation would be addressed to ensure that Wyoming's water quality criteria are met.

Development of the Site-Specific Criteria

In addition to concerns about meeting the proposed water column element, WDEQ/WQD continues to question how non-steady-state field data influence the whole-body and water column elements. According to Figure 7, dissolved surface water selenium concentrations in Crow Creek below the Sage Creek confluence (site CC-1A) begin to increase as early as 2006 and concentrations at the Wyoming state line (site CC-WY-01) begin to exceed 5 µg/L in 2010. Though there are seasonal trends, both Crow Creek sites increase to 20 µg/L starting in 2015. Also documented was an observable shift in the fish community structure as brown trout populations began to decline in 2012 (Figures 8 through 10). Simplot attributes the selenium increase to the subsurface transport of selenium from mine overburden areas to the springs that then flow into the Salt Subbasin and acknowledges that the decrease in brown trout populations correspond to increases in selenium. Although WDEQ/WQD identified this concern in our August 2017 letter, the issue was not addressed in the revised proposal or the Negotiated Rulemaking Summary. As such, WDEQ/WQD is providing the following information to elaborate on how increases in ambient selenium could impact each element of the SSSC.

Egg-ovary element

WDEQ/WQD understands that Simplot used wild trout from the Salt Subbasin to conduct the laboratory experiments and these specimens represent different locations and a range of selenium concentrations within the watershed. It is unclear, however, if the field data in Table 2

correspond to the collection events for laboratory specimens. If so, some of the collections in Crow and Sage Creeks occurred at locations that already exceeded IDEQ's current water quality standard for total selenium (5 µg/L) as well as the newly proposed water column concentrations (16.2 and 4.1 µg/L, respectively). WDEQ/WQD questions whether eggs from these sites were used in the laboratory experiments, thereby predisposing specimens to confounding effects of elevated selenium. WDEQ/WQD recommends that Simplot clearly present the field conditions under which laboratory specimens were collected as well as discuss any potential influences that elevated selenium may have on specimens and therefore egg-ovary calculations.

Whole-body element

Simplot states that the dataset necessary for deriving the whole-body element consists of six brown trout tissue pairs that were collected in the field in late October 2007, but it is unclear when the remaining 34 pairs were collected. WDEQ/WQD therefore requests that Simplot include sampling dates for the brown trout tissue pairs both in the text and in Table 6. If the dataset includes samples collected during the period of elevated selenium concentrations (i.e., after 2008), WDEQ/WQD suggests that Simplot stratify data by sampling date and compare conversion factors (CF) and whole-body elements for each time period. If there is not sufficient data to stratify the data by sampling dates, WDEQ/WQD recommends that Simplot elaborate on how non-steady-state conditions may affect CF values and resulting SSSC elements.

Table 6 shows that paired fish tissue data were collected from Sage Creek *and* Crow Creek. WDEQ/WQD recommends that Simplot stratify whole-body data by stream and develop a CF value for each stream. In doing so, the resulting whole-body element will more accurately reflect site-specific conditions and therefore be more protective of aquatic life in Crow Creek in Wyoming.

Water column element

As described in the text of the proposal and in Appendix D, the data used for deriving bioaccumulation factors (BAF) and ultimately the water column elements were collected in the field from 2006 to 2011. In this dataset, the increase in selenium surface water concentrations is apparent in Crow Creek at site CC-1A beginning in September 2008. Concomitant with these increases in surface water samples, there is a notable increase in the calculated water column element. The pre-September 2008 calculated range is 1.53 to 4.76 µg/L and the post-September 2008 calculated range 3.97 to 12.29 µg/L. A similar but less pronounced trend is also observed at downstream site in Crow Creek (site CC-3A). WDEQ/WQD is concerned since these non-steady-state data can skew the water column element to a less protective value. This is especially notable given the documented decrease in brown trout populations that occurred under these conditions. WDEQ/WQD therefore requests that Simplot evaluate and describe within the proposal how these elevated selenium concentrations affect BAF values and the resulting water column element.

WDEQ/WQD appreciates the changes that have been made thus far to address previous comments. WDEQ/WQD looks forward to reviewing responses to these comments and potential revisions to the criterion as it moves forward. To this end, WDEQ/WQD requests that IDEQ continue to communicate and coordinate with WDEQ/WQD throughout the rulemaking process. Please contact Michael Thomas

on my staff at (307) 777-2073 or Michael.Thomas@wyo.gov with any questions or clarifications regarding these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Waterstreet".

David Waterstreet, Manager
Watershed Protection Program

DW/MT/VC/17-0671

cc: Todd Parfitt, Director, Wyoming DEQ (Cheyenne, PDF Copy)
Kevin Fredrick, Administrator, Water Quality Division, DEQ (Cheyenne, PDF Copy)
Sol Brich, TMDL Program Manager, Water Quality Division, DEQ (Cheyenne, PDF Copy)