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ENERGY AND ENVIRONMENT CABINET

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R. Bruce Scott
Commissioner

November 1, 2013

Mr. James D. Giattina, Director
Water Protection Division
U.S. Environmental Protection Agency Region 4
Atlanta Federal Center
61 Forsyth Street
Atlanta, Georgia 30303-8960

Dear Mr. Giattina:

This letter is in response to your letter (attached) dated October 25, 2013 requesting information concerning how the Commonwealth intends to establish Kentucky Pollutant Discharge Elimination System (KPDES) permit limits for the proposed Kentucky-specific fish tissue chronic water quality criteria for selenium. Specifically, EPA has requested:

"... information concerning how the Commonwealth plans to establish KPDES permit limitations for the chronic fish tissue criteria for dischargers where fish are present in or immediately downstream of the receiving water and also where fish are not present in such waters."

Prior to responding specifically to EPA's inquiry, some clarification is necessary. First, it must be noted that this letter of response represents Kentucky's stated intentions for implementation of the revised proposed chronic water quality criteria for selenium. While certainly linked, establishment and review of proposed water quality criteria and implementation of water quality criteria are done pursuant to different authorities and review procedures under the Clean Water Act (CWA).

As such, as this agency has previously stated in response to public comment and to EPA, implementation of Kentucky's proposed chronic water quality criteria for selenium is subject to additional processes for review and comment consistent with CWA § 402 and the associated implementing regulations. These processes include an additional review by EPA of proposed Kentucky CWA § 402 permitting actions, and provides additional opportunity for review and comment by affected permit holders and by the public. With this understanding, and the understanding that implementation procedures are still in development, the agency provides the following response to EPA's October 25, 2013 letter.

KRS 224.10-100 authorizes the agency to issue, continue, revoke, modify, suspend or deny permits to discharge to the waters of the Commonwealth pursuant to conditions the agency may prescribe. The purpose of Kentucky's water quality standards at 401 KAR 10:026 through 401 KAR 10:031 is to safeguard Kentucky's surface waters for their designated uses, to prevent new pollution of those waters, and to abate existing pollution; see 401 KAR 10:029 Section 1(1). The CWA § 303(c) requires that States periodically review their water quality standards and, as appropriate, modify or adopt new standards.

Pursuant to these authorities, Kentucky has adopted chronic water quality criteria for selenium of 8.6 µg/g (dry weight) of whole fish tissue or, 19.3 µg/g (dry weight) of fish egg/ovary tissue in 401 KAR 10:031 Section 6, Table 1. In developing the proposed chronic water quality criteria for selenium, the agency determined that the trigger level of 5.0 µg/L is a protective approach. The 5.0 µg/L trigger level is a screening tool that will assure that fish communities, and therefore aquatic life, are protected from potentially harmful selenium bioaccumulation.

Pursuant to 401 KAR 5:065 Section 2 (4), the agency will conduct a reasonable potential analysis for compliance with water quality parameters, including selenium, in accordance with 40 CFR 122.44(d)(1)(ii). The agency has determined that a water column concentration of selenium greater than 5.0 µg/L may result, through dietary uptake, in the accumulation of selenium in fish tissue in excess of 8.6 µg/g (dry weight) of whole fish tissue or, 19.3 µg/g (dry weight) of fish egg/ovary tissue. Where the agency determines that a discharge has reasonable potential to cause or contribute to an in-stream excursion above a Kentucky water quality criteria established at 401 KAR 10:031, the agency has the authority pursuant to 401 KAR 5:065 Section 2 (4) (incorporating 40 CFR 122.44(d)(1)(i)¹) to impose an effluent requirement in the proposed KPDES permit.

Footnote 11 to the selenium water quality criteria in Table 1 of 401 KAR 10:031 establishes that a selenium concentration greater than five and zero tenths (5.0) µg/L in the water column shall trigger further sampling and analysis of fish tissue, either whole body or fish egg/ovary tissue, to determine compliance with the criteria. Where the agency determines that a discharge has the reasonable potential to exceed a concentration of 5.0 µg/L in the water column, the agency will establish conditions in the proposed KPDES permit to protect against exceeding the proposed chronic water quality criteria for selenium.

Thus, if an applicant's or permittee's effluent demonstrates a reasonable potential to result in a concentration of selenium in the water column greater than 5.0 µg/L, thereby demonstrating a reasonable potential to exceed the chronic fish tissue criteria of 8.6 µg/g or 19.3 µg/g, the proposed KPDES permit shall require discharge monitoring for selenium. If the average effluent selenium concentration exceeds 5.0 µg/L as reported in the Discharge Monitoring Report (DMR) the permit holder will be required to collect and analyze fish tissue for compliance with the chronic fish tissue criteria for selenium. Results of the analysis of fish tissue samples for selenium residue will thereby be used to determine compliance with the proposed KPDES permit. If the selenium residue in whole-body fish tissue sample or egg/ovary tissue exceeds the corresponding fish tissue limit as established in the proposed KPDES permit the permittee will have failed to demonstrate compliance with the proposed KPDES permit. Conversely, if the fish

¹ "Limitations must control all pollutants or pollutant parameters . . . which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

tissue analysis yields a result that is lower than the proposed fish tissue limit, the permittee will have demonstrated compliance with the permit requirement for selenium.

The agency has developed draft procedures for the collection of fish tissue for the analysis of selenium residue to determine compliance with the proposed KPDES permit. These procedures shall be required in the proposed KPDES permit. The procedures require the collection of fish tissue in successive stream segments in the effluent-receiving stream where the effects of the discharge may be realized, beginning below the outfall(s) that exceeded the effluent screening trigger concentration of 5.0 µg/L and potentially extending downstream to and terminating at the confluence of the next receiving stream. The agency believes that there are sufficient fish in Kentucky's waterways to provide tissue for determining compliance with the proposed chronic water quality criteria for selenium. However, in the event that sufficient fish tissue cannot be obtained, the proposed KPDES permit will state that if adequate fish tissue cannot be obtained to determine permit compliance with the fish-tissue limit the permit holder will be deemed to be in non-compliance with the proposed KPDES permit for exceeding the chronic trigger level as established in the proposed KPDES permit.

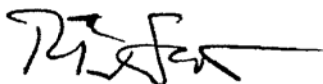
As stated previously, the agency has determined that the trigger of 5.0 µg/L selenium concentration threshold is protective of the aquatic habitat against potential harmful dietary bioaccumulation of selenium that would result in chronic toxicity. The agency's authority to establish compliance in a proposed KPDES permit with the water column threshold of 5.0 µg/L for the fish-tissue criteria in lieu of the availability of fish tissue is provided in 401 KAR 5:065 Section 2 (4) and is derived from 40 CFR 122.44(d)(1)(i):

"Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

The agency expresses its appreciation to EPA for the opportunity to provide response to EPA's October 25, 2013 letter with regard to the agency's intentions for implementation of the chronic water quality criteria for selenium in KPDES permits. We appreciate EPA's continued efforts to make timely review of and response to the proposed Kentucky water quality standards revision submittal.

If you have questions or need any additional information, please contact me at your convenience via email at Bruce.Scott@ky.gov or by phone at (502) 564-2150.

Sincerely,



R. Bruce Scott
Commissioner

c: Peter Goodmann, DOW
Mary Stephens, OGC