



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

LR-16 J

Via E-mail

October 5, 2023

Heather Ziegelbauer, PE
Jacobs Engineering Group Inc.
1610 N. 2nd Street, Suite 201
Milwaukee, Wisconsin 53212

Subject: Review: Surface Weighted Average Concentration Methodology Proposal Response to Comments
Tyco Safety Products - Ansul Stanton St Fac
U.S. EPA ID NO. WID006125215
1 Stanton Street
Marinette, WI 54143

Dear Ms. Ziegelbauer,

The Environmental Protection Agency (EPA) and the Wisconsin Department of Natural Resources (WDNR) have reviewed the Response to Comments (RTC) for the Surface Weighted Average Concentration (SWAC) Methodology Proposal dated and received on June 13, 2023, submitted for this facility. The agencies cannot approve the SWAC methodology at this time. More information is needed to demonstrate that the proposed SWAC methodology will support an accurate evaluation of sediment recovery. The following comments should be considered when developing a method that assesses sediment recovery and risk associated with ongoing exposure.

Comments

1. Use of an averaging method, including a SWAC, to evaluate sediment recovery is not appropriate when recent data demonstrates there is an ongoing source or sources of arsenic contamination to sediment. Further evaluation of arsenic migration pathways is needed to understand sediment contamination trends and the implications for recovery of the bioactive layer. This information is critical in the development of the conceptual site model and selection/implementation of sediment recovery evaluation methods.

2. Past agreements on the number of samples to be collected may support an evaluation of sediment contamination on a point-by-point basis but do not provide a technical basis for the sampling density and strategy that will support a SWAC evaluation.
3. A surface-weighted averaging method may be suitable when evaluating chronic exposure to biota exposed over a home range area that includes all post dredge cleanup areas. However, biota that are not exposed to all post dredge cleanup areas will have different levels of exposure.
 - a. If the sample locations and the areas they represent are subdivided based on differences in exposure, describe the assumptions used to make these determinations.
 - b. Discuss how an averaging method can address different exposure levels. Demonstrate how Tyco determined that the number and location of samples is representative of benthic exposure. How do the proposed sampling locations and densities adequately assess those differences?
 - c. Provide documentation that the use of SWAC methodology is an appropriate ecological risk assessment tool for assessing risk to benthic organisms. Typically, this method is more commonly utilized for mobile species such as fish that move throughout a remedial area.
4. Tyco has proposed a not-to-exceed threshold value of 89 ppm which "...represents a No Observed Adverse Effect Concentration (NOAEC) from 2001 toxicity tests based on acute endpoints where there were no acute effects such as mortality noted on *Hyalella azteca*..." and goes on to note that "...the next highest concentration tested in the 2001 toxicity tests was 324 mg/kg (in which acute effects are noted), therefore the true NOAEC may lie between 89 mg/kg and 324 mg/kg."
 - a. The details and uncertainties of the derivation of this NOAEC value are documented in agency comments to URS and referenced in the July 28, 2005 DNR Memo, Recommendation for Threshold bound Effect Concentration Range for Arsenic in the Sediments of the Turning Basin Area and 6h Street Slip Areas of the Menominee River to be Used to Select a Remedial Goal to Protect Site-Specific Aquatic-Related Assessment Endpoints ([Memo](#)). The risks to benthic organisms associated with chronic exposure are underestimated by the dependence on a short duration test using acute endpoints. Tyco must consider the multiple lines of evidence and conclusions presented in the Memo when evaluating a NTE threshold, including chronic exposure, pore water concentrations related to bulk sediment concentrations, protection of waterfowl, Consensus Based Sediment Quality guidelines, water quality criteria and RAOs for arsenic contaminated sediment sites.
5. Once ongoing sources are addressed, all other appropriate tools for evaluation of sediment recovery should be considered for use at the site.

If you have any questions about this review, please contact me via phone at (312) 353-4374 or through email at Kleinberg.Andrew@epa.gov.

Sincerely,



Andrew Kleinberg

Project Manager - Geologist

RCRA Corrective Action Section 2

Land, Chemicals & Redevelopment Division, Region 5, U.S. EPA

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