



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 10
 IDAHO OPERATIONS OFFICE
 1435 N. Orchard St.
 Boise, Idaho 83706

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DEPARTMENT OF
 ENVIRONMENTAL QUALITY
 BOISE REGIONAL OFFICE

Susan Beattie
 Idaho Department of Environmental Quality
 Boise Regional Office
 1445 N. Orchard
 Boise, Idaho 83706-2239

Dear Ms Beattie: *Susan,*

The purpose of this letter is to comment on the technical memorandum titled: *Proposed Sediment Targets for Indian Creek*, prepared by Tom Dupuis and Brian Drake of CH2M HILL.

The proposed sediment targets for Indian Creek are centered on the mainstem Boise River targets of 50 mg/l for 60 days and 80 mg/l for 14 days. The justification for using this target is that the literature does not "reveal a consensus" of what is protective of macroinvertebrates. The memo goes on to define juvenile salmonids such as rainbow trout as the most sensitive aquatic life uses. This proposed target cites one piece of literature (Newcombe and Jensen, 1996) as the basis for the selection of the 50/80 target based on juvenile salmonids, but is silent on the sensitivity of salmonid eggs and larval fish in the substrate of the stream. Eggs and larval fish in a stream are more sensitive life stages of rainbow trout than juveniles of the species.

In the background paragraph of the CH2M HILL proposal, it is stated that the original IDEQ proposed target was 22 mg/l of sediment. This concentration was selected because it was believed to be protective of macroinvertebrates in the stream. This original target proposed by IDEQ was dismissed because their "more extensive review of the available literature did not lead to a clear consensus regarding a suspended sediment concentration that is protective of those organisms." The literature does include evidence that above a TSS concentration of around 22-25 mg/l many species of macroinvertebrates disappear from the stream sediments. These benthic macroinvertebrates are very important components of the food chain for rainbow trout and other fish and merit protection in Indian Creek. The definition of 'Cold Water Aquatic Life' as a beneficial use includes not only all life stages of the fish present in Indian Creek, but also the other organisms in the stream such as caddis flies, mayflies, stoneflies, etc. This is all part of the goal of the Clean Water Act to protect beneficial uses and make the Waters of the United States fishable and swimmable.

In my review of the Newcombe and Jensen 1996 paper, it appears that CH2M Hill has chosen a concentration and dose of suspended solids that reflect a severity score (SEV) of 9. An SEV score of 9 indicates a paraethal effect of excessive suspended sediment that includes such factors as reduced growth rate, delayed hatching, and reduced fish density. This is not

protective of juvenile salmonids at all, let alone fish eggs and yolk-sac fry in the substrate of the stream or macroinvertebrates. A SEV score of 8 would result in the highest sublethal category for juveniles and adult rainbow trout. This would correspond to an instream concentration of TSS of around 20 mg/l. This concentration would be protective and would allow for prolonged duration of reduced feeding and physiological stress on the fish, but not to the level of reduced growth rates or other para-lethal or lethal effects.

Whether there is salmonid spawning in Indian Creek or not doesn't really matter under the current Idaho State Water Quality Standards. Indian Creek has been designated for a salmonid spawning use from the New York Canal to Sugar Avenue in Nampa, ID. This means that protections for eggs and larval fish are necessary for this section of Indian Creek. The reach between Sugar Avenue to the mouth of Indian Creek is designated for Cold Water Aquatic Life and is the passage way for fish between the Boise River and Indian Creek. The Idaho Water Quality Standard for suspended sediment states that "Sediment shall not exceed quantities specified in Sections 250 and 252, or, in the absence of specific sediment criteria, quantities which impair designated beneficial uses. Determinations of impairment shall be based on water quality monitoring and surveillance and the information utilized as described in Section 350 (emphasis added)."

Hence, sediment targets of 50 mg/l to 80 mg/l are not protective of a salmonid spawning use as defined by Idaho standards.

The analysis by CH2M HILL seems to be based on the targets set for the Mainstem Lower Boise River TMDL (80 mg/l duration 14 d, 50 mg/l duration 60 d). The assertion is that these levels are protective. Although these are the sediment targets in the Lower Boise TMDL, they were controversial at the time and there is still no EPA staff agreement that these targets are protective. At the time of submittal of the Lower Boise River Sediment and Bacteria TMDL, there was an agreement to conduct further studies to determine if this TSS target was protective of the beneficial uses of the Lower Boise River. This was clearly stated in a letter from IDEQ, signed by David Mabe and dated September 28, 1999. To the best of my knowledge, this study has not been completed to date. Therefore, there is no evidence that the 50/80 mg/l targets are protective of aquatic life in the Lower Boise.

The remaining discussion describes the method of calculating sediment concentration targets of various durations that are not already in the 'Newcombe and Jensen 1996' models. The fact remains that the proposed concentrations are at the boundary between high sublethal and para-lethal/lethal effects for rainbow trout. Any further interpolation of these targets to develop various durations of application is questionable and does not by any means represent a more "conservative" approach.

The point sources in the Indian Creek Watershed will not be affected at all by either proposed TSS target. The only permitted point sources currently in the watershed are the Nampa and Kuna Municipal Wastewater Treatment Plants. In reviewing the DMR data submitted by the Nampa plant, it appears that the city's discharge concentration is far below the current permit limit requirements. In fact, with a TMDL wasteload allocation of 22 mg/l for TSS the City of Nampa would be in compliance right now. The technology based limit for point sources for TSS

is 30 mg/l average monthly and 45 mg/l average weekly. No point source can exceed the technology based limit under current regulations. Therefore, a TMDL target of 50 mg/l or 80 mg/l would not be used to set limits in an NPDES Permit and would be meaningless to a municipality.

In conclusion, I do not believe that the CH2M HILL Proposed Sediment Targets for Indian Creek are protective enough for the beneficial uses of the stream. EPA is under no obligation to continue to accept a sediment target in a TMDL which we do not believe is protective of the beneficial uses of a water body even though it was previously approved in an older TMDL for another waterbody. Indeed, the entire purpose of doing a TMDL for Indian Creek is to lay the ground work for water quality improvement to get the stream to a condition where it will become a valuable resource for the surrounding communities, both rural and urban.

Sincerely,

A handwritten signature in cursive script, appearing to read "William C. Stewart".

William C. Stewart, EPS
Environmental Protection Agency