



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: OW-134

FEB 20 2001

David Mabe, Administrator
State Water Quality Programs
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1255

Re: Approval of TMDLs within the Palisades Subbasin

Dear Mr. Mabe:

The U.S. Environmental Protection Agency (EPA) is pleased to approve the following TMDLs within the Palisades Subbasin Total Maximum Daily Load (TMDL) submitted to us on January 30, 2001, for the following parameters:

<u>Waterbody</u>	<u>Segment</u>	<u>TMDL Parameters</u>
Antelope Creek	Hydrologic Unit Code 17050102	Sediment
Bear Creek	Hydrologic Unit Code 17050102	Sediment

We appreciate the effort of the Idaho Department of Environmental Quality in developing these TMDL. We look forward to implementation of the TMDL, and continuing to work collaboratively on water quality issues in the Palisades Subbasin. EPA also recognizes that a TMDL for the Fall Creek drainage will be deferred until 2006 in order that additional data may be collected.

By EPA's approval, this TMDL is now incorporated into the state's Water Quality Management Plan under Section 303(e) of the Clean Water Act. If you have any comments or questions, please feel free to call me at (206) 553-1261, or you may call Curry Jones of my staff at (206) 553-6912.

Sincerely,


Randall F. Smith, Director
Office of Water

cc: Stephen Allred, IDEQ
Doug Conde, IDEQ
Mike McIntyre, IDEQ
Don Essig, IDEQ
Jim Johnston, IDEQ - Idaho Falls
Troy Saffle, IDEQ - Idaho Falls



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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1200 Sixth Avenue
Seattle, WA 98101

March 7, 2001

Reply To
Attn Of: OW-134

David Mabe, Administrator
State Water Quality Programs
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1255

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DEPARTMENT OF ENVIRONMENTAL QUALITY
STATE WATER QUALITY PROGRAMS

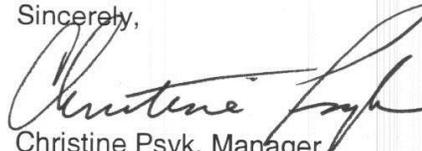
Re: Correction of Hydrologic Unit Code Listed in Palisades Subbasin TMDL Approval Letter

Dear Mr. Mabe:

The purpose of this letter is to make a correction to the Palisades Subbasin TMDL approval letter submitted to Idaho Department of Environmental Quality on February 20, 2001. In this letter the hydrologic unit code being approved was listed as Hydrologic Unit Code 17050102. The correct hydrologic unit code to which the February 20, 2001, TMDL approval letter applies is 17040104.

If you have any comments or questions, please feel free to call me at (206) 553-1906, or you may call Curry Jones of my staff at (206) 553-6912.

Sincerely,



Christine Psyk, Manager
Watershed Restoration Unit

Enclosure: Palisades Subbasin TMDL Approval Letter, February 20, 2001

cc: Stephen Allred, IDEQ
Mike McIntyre, IDEQ
Don Essig, IDEQ
Jim Johnston, IDEQ - Idaho Falls
Troy Saffle, IDEQ - Idaho Falls

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TMDL REVIEW CHECKLIST

TMDL:	Palisades Subbasin - Antelope Creek - Bear Creek
Reviewer	Curry Jones
Date of Review:	February 6, 2001
Pollutant:	Sediment
Type of TMDL:	Non-point Source

Elements of a TMDL - The first step is to determine if the required elements identified in 40 CFR 130.7 are included in the TMDL. If they are not, the TMDL cannot be approved.

1. Are waters addressed by the TMDL identified and consistent with the §303(d) list:	Yes X	No	Two of the 10 listed waters are addressed in the TMDL submission.
2. Loading Capacity:	Yes	No	
3. Allocations: Load Allocation:	Yes X	No	
4. Allocations: Wasteload Allocation:	Yes	No X	No point sources exist.
5. MOS:	Yes X	No	
6. Seasonal Variation:	Yes X	No	
7. Evaluation of Critical Conditions:	Yes X	No	

Internal Coherence. Each element should be evaluated to determine if a "coherent" basis for that element exists in the TMDL. In other words, do the TMDL's data, assumptions and conclusions flow logically to support each essential element. The following questions may assist the reviewer in making this determination:

- Are the assumptions identified and explained?
- Are surrogates adequately explained?
- Are the data presented or adequately displayed to support conclusions?
- Are the conclusions thoroughly explained?
- Are the explanations consistent with what the data show?
- Does the TMDL provide the basis to conclude that achieving the allocations in the TMDL will achieve water quality standards, i.e., is the linkage between the two established?

	Reviewers Comments
Loading Capacity	<p>EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating water quality standards [40 CFR §130.2(f)]. The loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure [40 CFR § 130.2(i)]. For both Antelope and Bear Creek sediment TMDLs, the state utilizes the other appropriate measure provision which directly relates back to both the beneficial use and the dominant erosional process occurring in these drainages.</p> <p>Both Antelope Creek and Bear Creek are designated for salmonid spawning and cold water biota. The goal of the TMDL is to improve the quality of spawning and incubation substrate and rearing habitat for yellowstone cutthroat. The existing narrative state water quality criteria for sediment ("<i>Sediment shall not exceed quantities which impair the designated beneficial uses.</i>") and 40 CFR § 130.2(i) provides a basis for the development of an appropriate sediment surrogate (indicators) which can be linked to key beneficial use (salmonid spawning and rearing) and to land management activities (e.g., livestock grazing along streambanks). By measuring key elements of stream structure (in this case streambank erosion), these indicators provide a mechanism for understanding the relative importance of physical process interactions that occur within streams, and for more thoughtfully planning goals for stream management and actions to attain goals (USEPA, October 1999).</p> <p>Therefore, the first other appropriate measure selected for the TMDL is a subsurface fine (< 0.025 inches in diameter) target of less than or equal to 28% fines (0.25 inches).</p> <p>Because the dominant erosion process in both watersheds is streambank erosion, the TMDL also established an 80% streambank stability target (<i>the second other appropriate measure</i>) (Overton, 1995), where banks are expressed as a percentage of the estimated bank length. The 80% streambank stability targets are translated into annual loading capacities.</p> <ul style="list-style-type: none"> • For Antelope Creek the 80% stable streambanks target translate to an annual sediment load of 14.3 tons/mile/year. • For Bear Creek the 80% stable streambanks target translate to an annual sediment load of 65.7 tons/mile/year.

<p>Load Allocation</p>	<p>Load allocations may range from reasonably accurate estimates to gross allotments [40 CFR §130.2(g)]. The Palisades Subbasin TMDL establishes gross allotments and percentage reduction targets.</p> <ul style="list-style-type: none"> • For Antelope Creek the existing sediment load was 82 tons/mile/year (62% stable streambanks) In order to achieve the annual sediment load of 14.3 tons/mile/year (80% stable streambanks) a sediment load reduction of 67.7 tons/mile/year is needed. • For Bear Creek the existing sediment load was 790 tons/mile/year (68% stable streambanks) In order to achieve the annual sediment load of 65.7 tons/mile/year (80% stable streambanks) a sediment load reduction of 724.3 tons/mile/year is needed. <p>Sediment reductions were allocated to area where streambank stability was less than 80%. Streambank stability less than 80% on Federal lands will be handled by the US Forest Service. Streambank stability less than 80% on private lands will be handled by the East Side Soil and Water Conservation District and the Idaho Soil Conservation Commission. These agencies will determine where these areas lie and work with landowners to implement measures to meet the 80% streambank stability target.</p>
<p>Wasteload Allocation</p>	<p>Because no point sources exist in the Palisades Subbasin, no wasteload allocation was developed . (Reference: http://oaspub.epa.gov/surf/surffac?huc=17040104&ldip=02&name=Palisades).</p>
<p>Margin of Safety</p>	<p>The TMDL incorporates an implicit Margin of safety through the analytical assumption made in setting the 80% streambank stability target and the 28% depth fines stream substrate target.</p>
<p>Seasonal Variation</p>	<p>Annual erosion and sediment delivery rates are associated with climatic conditions where wet water years typically produce the highest sediment loads. So to account for these events, annual sediment reduction targets were set.</p>
<p>Critical Conditions</p>	<p>The highest rates of erosion typically occur during spring runoff and summer thunderstorms.</p>