UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Ref: 8EPR-EP

April 27, 2005

Mr. Art Compton, Director
Planning, Prevention and Assistance Division
Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Re: **TMDL Approvals**
Bobtail Creek

Dear Mr. Compton:

We have completed our review of the total maximum daily loads (TMDLs) as submitted by your office for the Bobtail Creek Watershed. The TMDLs are included in the document entitled Water Quality Restoration Plan and TMDLs for the Bobtail Creek Watershed (Montana Department of Environmental Quality) transmitted to us for review and approval in correspondence dated January 28, 2005 and signed by you. In accordance with the Clean Water Act (33 U.S.C. 1251 *et. seq*.), we approve all aspects of the TMDLs as developed for the Bobcat Watershed TMDL Planning Area. Enclosure 1 to this letter provides a summary of the elements of the TMDLs and Enclosure 2 provides details of our review of the TMDLs.

Based on our review, we feel the separate TMDL elements listed in Enclosure 2 adequately address the pollutants of concern, taking into consideration seasonal variation and a margin of safety. In approving this TMDL, EPA affirms that the TMDLs have been established at a level necessary to attain and maintain the applicable water quality standards and has the necessary components of an approvable TMDL.

EPA has been in contact with the United States Fish and Wildlife Service (FWS) regarding whether and, if so, how the EPA's approval of the Bobtail Creek TMDL may affect the continued existence of any endangered or threatened species listed under the Endangered Species Act (ESA) or the designated critical habitat of any such species. EPA has not determined that today's approval may have such an affect. Therefore, consistent with the terms of a consent decree in the lawsuit of Friends of the Wild Swan, *et al*., v. U.S. Environmental Projection Agency, *et al*., Civil Action No. CV99-87-M-LBE, United States District Court for the District of Montana, Missoula Division, EPA has decided to approve these TMDLs contingent upon the outcome of consultation with the FWS.

Thank you for your submittal. If you have any questions concerning this approval, feel free to contact Ron Steg of my staff at (406) 457-5024.

Sincerely,

Original Signed by Max Dodson

Max H. Dodson
Assistant Regional Administrator
Ecosystems Protection and Remediation

Enclosures

cc:

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Enclosure 2

EPA REGION VIII MONTANA OFFICE TMDL REVIEW FORM

Document Name:	**Water Quality Restoration Plan and Total Maximum Daily Loads for the Bobtail Creek Watershed (January, 2005)**
Submitted by:	**MTDEQ**
Date Received:	**January 31, 2005**
Review Date:	**April 4, 2005**
Reviewer:	**Ron Steg**
Formal or Informal Review?	**FORMAL**

This document provides a standard format for the EPA Montana Office to provide comments to the Montana Department of Environmental Quality on TMDL documents provided to the EPA for either official formal, or informal review. All TMDL documents are measured against the following 12 review criteria:

1. Water Quality Impairment Status
2. Water Quality Standards
3. Water Quality Targets
4. Significant Sources
5. Total Maximum Daily Load
6. Allocation
7. Margin of Safety and Seasonality
8. Monitoring Strategy
9. Restoration Strategy
10. Public Participation
11. Endangered Species Act Compliance
12. Technical Analysis

Each of the 12 review criteria are described below to provide the rational for the review, followed by EPA's summary and comments/questions. **Comments/questions that need to be addressed are presented in bold**. This review is intended to ensure compliance with the Clean Water Act and also to ensure that the reviewed documents are technically sound and the conclusions are technically defensible.

1. Water Quality Impairment Status

Criterion Description – Water Quality Impairment Status

TMDL documents must include a description of the listed water quality impairments. While the 303(d) list identifies probable causes and sources of water quality impairments, the information contained in the 303(d) list is generally not sufficiently detailed to provide the reader with an adequate understanding of the impairments. TMDL documents should include a thorough description/summary of all available water quality data such that the water quality impairments are clearly defined and linked to the impaired beneficial uses and/or appropriate water quality standards.

☑ Satisfies Criterion
☐ Satisfies Criterion with stipulations provided below that must be addressed.
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☐ Not a required element in this case. Comments or questions provided for informational purposes.

Bobtail Creek was not listed as impaired on Montana's 1996 303(d) list. Aquatic life and cold-water fisheries beneficial uses were first listed as impaired on the 2000 303(d) list. Siltation and turbidity were the listed causes of impairment. The current water quality impairment status has been thoroughly evaluated and is described in Section 3.4.

2. Water Quality Standards

Criterion Description – Water Quality Standards

The TMDL document must include a description of all applicable water quality standards for all affected jurisdictions. TMDLs result in maintaining and attaining water quality standards. Water quality standards are the basis from which TMDL's are established and the TMDL targets are derived, including the numeric, narrative, use classification, and antidegradation components of the standards.

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The applicable water quality standards are adequately summarized in Section 3.2.

3. Water Quality Targets

Criterion Description – Water Quality Targets

Quantified targets or endpoints must be provided to address each listed pollutant/water body combination. Target values must represent achievement of applicable water quality standards and support of associated beneficial uses. For pollutants with numeric water quality standards, the numeric criteria are generally used as the TMDL target. For pollutants with narrative standards, the narrative standard must be translated into a measurable value. At a minimum, one target is required for each pollutant/water body combination. It is generally desirable, however, to include several targets that represent achievement of the standard and support of beneficial uses (e.g., for a sediment impairment issue it may be appropriate to include targets representing water column sediment such as TSS, embeddeness, stream morphology, up-slope conditions, and a measure of biota).

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Targets are presented for width-to-depth ratio, pool frequency, riffle stability index, Wolman Pebble Counts, and McNeil Cores. These are summarized in the attached summary table.

These targets adequately represent both the cold-water fishery and aquatic life beneficial uses. Achievement of these targets should represent attainment of the applicable narrative water quality standards for sediment.

A suite of supplemental indicators was also applied as supporting information in Section 3.0 to verify current water quality impairment status relative to siltation and turbidity.

4. Significant Sources

Criterion Description – Significant Sources

TMDLs must consider all significant sources of the stressor of concern. All sources or causes of the stressor must be identified or accounted for in some manner. The detail provided in the source assessment step drives the rigor of the allocation step. In other words, it is only possible to specifically allocate quantifiable loads or load reductions to each significant source when the relative load contribution from each source has been estimated. Ideally, therefore, the pollutant load from each significant source should be quantified. This can be accomplished using site-specific monitoring data, modeling, or application of other assessment techniques. If insufficient time or resources are available to accomplish this step, a phased/adaptive management approach can be employed so long as the approach is clearly defined in the document.

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Primary sediment sources include sediment yield from roads, an area of unstable banks, and increased water yield which contributes to unstable bank conditions. The relative importance of many of these sources was underscored by a synoptic TSS sampling event during a rain-on-snow event in 2002. Although loads were not specifically calculated for each of the sources, the source assessment adequately identified and prioritized sediment sources.

5. TMDL

Criterion Description – Total Maximum Daily Load

TMDLs include a quantified pollutant reduction target. According to EPA reg (see 40 C.F.R. 130.2(i)) TMDLs can be expressed as mass per unit of time, toxicity, % load reduction, or other measure. TMDLs must address, either singly or in combination, each listed pollutant/water body combination.

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The TMDL is expressed as "*a 95% reduction in the average TSS concentration during high flow conditions*". Insufficient information was presented in the document to specifically determine the resulting TSS concentration and the resulting TSS load during high flow conditions. The following provides an interpretation of this TMDL in terms of concentration and load.

Appendix A of the TMDL documents includes over 1000-paired discharge and TSS values collected in Bobtail Creek between 2000 and 2003. Using these data, average TSS concentrations were estimated during high flow conditions assuming: 1) high flow is represented by flows greater than or equal to the 95th percentile flow, and 2) the storm event occurring in April 2002,resulting in the maximum recorded TSS value of 14,786 mg/l, was a non-typical high flow event that does not represent normal conditions for Bobtail Creek. Excluding the April 2002 storm event, the maximum-recorded TSS value was 313.7 mg/l. The 95th percentile discharge was 31.7 cfs and the average TSS concentration during flows greater than or equal to 31.7 cfs was 61.0 mg/l.

A 95 percent reduction in TSS concentrations only applied during high flows (as defined above) would result in an average TSS concentration, during high flow, of 3.05 mg/l. When this value is averaged with existing low flow data (where there is no TMDL reduction), the resulting concentration is 4.4 mg/l, which is less than the average concentration (including all flows) in the reference streams of 5.7 mg/l.

Assuming a constant discharge of 37.6 cfs, based on the average of the 95th percentile flows for an entire day and a TSS values of 3.05 mg/l, the TMDL would be 619 pounds per day versus 12,385 pounds per day at the average high flow concentration of 61.0 mg/l. So, as proposed, the TMDL would result in an approximate 95% TSS load reduction during high flow conditions.

EPA concludes that the State's TMDL is protective of the aquatic life use of Bobtail Creek. Further, the conservative nature of the TMDL target would result in TSS levels in the creek that are less than those observed in the reference streams described in the document.

6. Allocation

Criterion Description – Allocation

TMDLs apportion responsibility for taking actions or allocate the available assimilative capacity among the various point, nonpoint, and natural pollutant sources. Allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing of responsibility. A performance based allocation approach, where a detailed strategy is articulated for the application of BMPs, may also be appropriate for non point sources.

In cases where there is substantial uncertainty regarding the linkage between the proposed allocations and achievement of water quality standards, it may be necessary to employ a phased or adaptive management approach (e.g., establish a monitoring plan to determine if the proposed allocations are, in fact, leading to the desired water quality improvements).

Allocating load reductions to specific sources is generally the most contentious and politically sensitive component of the TMDL process. It is also the step in the process where management direction is provided to actually achieve the desired load reductions. In many ways, it is a prioritization of restoration activities that need to occur to restore water quality. For these reasons, every effort should be made to be as detailed as possible and also, to base all conclusions on the best available scientific principles.

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Performance-based allocations are proposed for existing USFS roads, Plum Creek roads, County Roads, eroding banks, mass wasting, culverts, future development, and future roads/timber harvest. The hypothesis is that the performance-based actions will result in achievement of the targets and ultimately water quality standards compliance for siltation and turbidity. The proposed monitoring strategy in Section 7.0 includes tracking implementation of restoration actions and trend monitoring for the target variable to allow for adaptive management if the targets are not met.

7. Margin of Safety and Seasonality

Criterion Description – Margin of Safety/Seasonality

A margin of safety (MOS) is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving water body (303(d)(1)(c)). The MOS can be implicitly expressed by incorporating a margin of safety into conservative assumptions used to develop the TMDL. In other cases, the MOS can be built in as a separate component of the TMDL (in this case, quantitatively, a TMDL = WLA + LA + MOS). In all cases, specific documentation describing the rational for the MOS is required.

Seasonal considerations, such as critical flow periods (high flow, low flow), also need to be considered when establishing TMDLs , targets, and allocations.

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As described above in # 5, the TMDL is very conservative and implicitly provides a margin of safety by proposing load reductions that would achieve conditions better than those observed in reference streams described in the document.

8. Monitoring Strategy

Criterion Description – Monitoring Strategy

Many TMDL's are likely to have significant uncertainty associated with selection of appropriate numeric targets and estimates of source loadings and assimilative capacity. In these cases, a phased TMDL approach may be necessary. For Phased TMDLs, it is EPA's expectation that a monitoring plan will be included as a component of the TMDL documents to articulate the means by which the TMDL will be evaluated in the field, and to provide supplemental data in the future to address any uncertainties that may exist when the document is prepared.

At a minimum, the monitoring strategy should:

- *Articulate the monitoring hypothesis and explain how the monitoring plan will test it.*
- *Address the relationships between the monitoring plan and the various components of the TMDL (targets, sources, allocations, etc.).*
- *Explain any assumptions used.*
- *Describe monitoring methods.*
- *Define monitoring locations and frequencies, and list the responsible parties.*

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A detailed monitoring strategy is proposed including trend monitoring for the target variables and supplemental indicators, monitoring to fill data gaps, and reference condition monitoring.

9. Restoration Strategy

Criterion Description – Restoration Strategy

At a minimum, sufficient information should be provided in the TMDL document to demonstrate that if the TMDL were implemented, water quality standards would be attained or maintained. Adding additional detail regarding the proposed approach for the restoration of water quality is not currently a regulatory requirement, but is considered a value added component of a TMDL document.

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A voluntary restoration strategy outlining a conceptual approach for the U.S. Forest Service, Plum Creek Timber Company, and private landowners in the watershed is presented in Section 6.0.

10. Public Participation

Criterion Description – Public Participation

The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process. Public participation should fit the needs of the particular TMDL.

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Public involvement is described in Section 8.0. The document was made available to the public during a formal one-month public comment period during which time a public meeting was held. This document reflects modifications made in response to public comment.

11. Technical Analysis

Criterion Description – Technical Analysis

*TMDLs must be supported by an appropriate level of technical analysis. It applies to **all** of the components of a TMDL document. It is vitally important that the technical basis for **all** conclusions be articulated in a manner that is easily understandable and readily apparent to the reader. Of particular importance, the cause and effect relationship between the pollutant and impairment and between the selected targets, sources, TMDLs, and allocations needs to be supported by an appropriate level of technical analysis.*

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The technical analysis linking the target, TMDL, and allocations together is adequate.

12. Endangered Species Act Compliance

Criterion Description – Endangered Species Act Compliance

EPA's approval of a TMDL may constitute an action subject to the provisions of Section 7 of the Endangered Species Act ("ESA"). EPA will consult, as appropriate, with the US Fish and Wildlife Service (USFWS) to determine if there is an effect on listed endangered and threatened species pertaining to EPA's approval of the TMDL. The responsibility to consult with the USFWS lies with EPA and is not a requirement under the Clean Water Act for approving TMDLs. States are encouraged, however, to participate with FWS and EPA in the consultation process and, most importantly, to document in its TMDLs the potential effects (adverse or beneficial) the TMDL may have on listed as well as candidate and proposed species under the ESA.

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The EPA will consult with the US Fish and Wildlife Service under the provisions of Section 7(a)(2) of the ESA regarding its approval of these TMDLs. For now, the approval is contingent upon the outcome of such consultation.

Enclosure 1

APPROVED TMDLS

2 TMDLs completed
0 Determinations that no TMDLs is needed
0 TMDLs yet to be developed

Waterbody Name*	**TMDL Parameter/ Pollutant**	**Water Quality Goal/Endpoint**	**TMDL**	**WLA LA**	**Supporting Documentation** (not an exhaustive list of supporting documents)
Bobtail Creek* MT76D002_080 17010101	Siltation and Turbidity *[Based on 2000 & 2002 Lists]*	W/D Ratio 10-28 in B reaches and 10-21 in C reaches Pool Frequency of 47 - 96 pools/mile Riffle Stability Index of 45-75 in B reaches % fines <2 mm < 20% % fines 6.35 < 28%	95% reduction in TSS loading during high flow conditions	WLA = 0 LA = Performance-based allocations to existing USFS roads, Plum Creek roads, County Roads, eroding banks, mass wasting, culverts, future development, and future roads/timber harvest	"Water Quality Restoration Plan and Total Maximum Daily Loads for the Bobtail Creek Watershed "

* An asterisk indicates the water body has been included on the State's Section 303(d) list of water bodies in need of TMDLs.