FINAL

Montana 303(d) List

A Compilation of Impaired and Threatened Waterbodies in Need of Water Quality Restoration

Part A

Water Quality Assessment Results

Montana Department of Environmental Quality
Planning, Prevention, and Assistance Division
Monitoring and Data Management Bureau

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TABLE OF CONTENTS

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Chapter 1
Introduction

This document presents the results of water quality assessments conducted for Montana waters by the Montana Department of Environmental Quality (DEQ) between July 1998 and October 2000. These assessments were conducted in accordance with the federal Clean Water Act and the Montana Water Quality Act as part of a process intended to protect and improve the quality of rivers, streams, lakes, and wetlands in the State.

The fundamental goal of the federal Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." While the Act "recognizes, preserves, and protects" states' responsibilities for water quality protection and planning, it assigns overall administration of the Act to the United States Environmental Protection Agency (EPA).

The Act requires states to adopt standards for the protection of surface water quality. These standards are designed to maintain water quality that will support the beneficial uses assigned to a water body. Montana waters have been assigned to use classes under the Montana Water-Use Classification System which, depending on the particular class, requires them to support to different degrees some or all of the following uses: drinking and food processing; bathing, swimming and contact recreation; growth and propagation of fish and associated aquatic life, waterfowl, and furbears; and agricultural and industrial water supply. The water quality standards employed to maintain these uses address changes from natural conditions for such parameters as coliform, dissolved oxygen, pH, turbidity, temperature, color, toxics, and other harmful substances.

Changes from naturally occurring water quality conditions may result from either point source or nonpoint source discharges. Point source discharges have an identifiable waterbody entry point (e.g., sewage treatment plant pipe, canal, etc.); nonpoint sources contribute pollutants to waters over an extended area. Agricultural operations and timber harvest activities are examples of nonpoint sources. Point source discharges are regulated by the state's discharge permit program. Nonpoint sources are addressed by encouraging voluntary use of "Best Management Practices" (BMPs) designed to reduce the water quality impacts of land use activities. These BMPs and permits are the primary means for maintaining or restoring Montana water quality, and often they are sufficient to accomplish this purpose.

When these measures prove inadequate to fully protect water quality, the provisions of Section 303(d) of the federal Clean Water Act come into effect. This section of the Act requires states to identify those waters where use of BMPs and the point discharge permit system has not been adequate to meet applicable water quality standards supporting the specified beneficial uses. Specifically, the language of this section and related EPA regulations requires states to identify those state waters where quality is impaired (does not fully meet standards) or threatened (is likely to violate standards in the near future). Each two years the states are required to submit a list of these impaired or threatened waters to the EPA. This "303(d) List" report must also include a prioritization of the listed waterbodies for the development of plans identifying measures needed to bring the water quality of the listed waters into compliance with the applicable standards. Because one element of some of these plans involves estimating the "total maximum daily load" (TMDL) of pollution that a waterbody can handle and still meet standards, these plans are often referred to as "TMDL Plans" even when the specific measures required to meet standards for a particular water may not involve calculating or managing the TMDL of a specific pollutant.

Document Preview

The Montana 303(d) List for year 2000 is made up of two sub-parts. This document, Part A, addresses water quality assessments. It presents the year 2000 list of Montana impaired or threatened waters, which is also the list of "waters in need of TMDL plan development." As a matter of convenience, and because very few threatened waters have been identified in Montana, the remainder of this document will simply refer to this list as the "impaired waters" list.

A separate, Part B, document deals with the scheduling of impaired waters for the development of TMDL plans. Both parts received public review during a 139-day comment period, and a follow-up 30-day comment period provided the public an additional chance to comment on a proposal to adopt a watershed approach to TMDL plan scheduling. The draft list was revised substantially in response to the comments received, and DEQ is submitting this resulting final List for EPA approval..

Montana has been developing and submitting 303(d) Lists every two years since 1992, but the listing efforts have been limited by uncertainty regarding which state agency had statutory authority to administer the process, the absence of a defined methodology, and a substantial lack of staff resources. As a result, there was considerable doubt about the validity of the waterbody listings on the Montana 303(d) Lists and very minimal progress was being made toward the development of TMDL plans.

Recognition of these problems led to a substantial reworking of Montana water quality law by the 1997 state legislature. In particular, the 1997 legislation gave considerable attention to how the state would go about meeting the federal requirements for the development of the 303(d) Lists and the preparation of TMDL plans. Legislative changes that have had the greatest impact on the material in this 303(d) report include mandates to the Department of Environmental Quality to:

- monitor state waters to accurately assess their water quality;
- develop procedures to ensure that 303(d) listing and priority ranking decisions would be made only when sufficient credible data to support the decision are available, remove waters lacking such data from the 2000 List, and monitor those removed waters during the next field season or as soon as possible thereafter to determine their actual condition;
- consider 13 specified factors in prioritizing water bodies for TMDL plan development and to rank a water body as high priority only after first validating the data necessary to support the ranking;
- consult with a statewide advisory group and with local conservation districts and watershed advisory groups in revising the list of impaired waters and establishing new priority rankings.

Chapter II of this document presents the 2000 list of impaired waters in Montana. The chapter begins with a brief description of the process and criteria DEQ used to identify those waters for which there were sufficient credible data to support beneficial use assessments and to make those assessments. This process overview is followed by the list of impaired waters organized by river basin, sub-major basin, and watershed. The impaired waters in each watershed are displayed on a map and listed on a table that also indicates which beneficial uses are impaired and the probable causes and sources of impairment.

Chapter III provides an accounting of what has happened to waters that were on the previous list of impaired waters but do not appear on the 2000 list. It addresses waters located on tribal reservations and under tribal and/or EPA jurisdiction for water quality protection. Waters proposed for removal from the list because they have been determined during this assessment cycle to be fully supporting the applicable beneficial uses are identified as are waters for which TMDL plans have been completed and approved by EPA. Also listed are the waters for which sufficient credible data are not available to support beneficial use determinations.

Chapter IV outlines the role that public involvement and consultation has played in the preparation of the lists contained in this document. The process followed to obtain public comment on the draft document is presented, the comments received are summarized, and an overview is provided of how the comment was used in modifying the draft.

Appendix A is composed of a detailed description of the "sufficient credible data assessment" and "beneficial use determination" methodologies. This description is much more detailed than the process summary provided at the beginning of Chapter II and is intended primarily for review by water quality technical specialists. Appendix B presents a preliminary work-plan schedule for reassessing waters that were removed from the impaired waters list due to a lack of sufficient credible data.

Glossary of Terms

303(d) List – A compilation of impaired and threatened waterbodies in need of water quality restoration which is prepared by DEQ and submitted to EPA for approval. This list is commonly referred to as the "303(d) List" because it is prepared in accordance with the requirements of section 303(d) of the federal Clean Water Act of 1972. The term is often used in a narrow sense to refer only to the specific list of impaired and threatened waters which appears in Chapter 2 of this document. In a broader sense it includes all the information which must be submitted to EPA – the entire contents of both this Part A document and the accompanying Part B.

305(b) Report – A general overview report of state water quality conditions which DEQ prepares and submits to EPA in accordance with the requirements of section 305(b) of the federal Clean Water Act of 1972.

Anthropogenic impacts – Human caused changes leading to reductions in water quality.

Assessment – A complete review of waterbody conditions using chemical, physical, or biological monitoring data alone or in combination with narrative information, that supports a finding as to whether a waterbody is achieving compliance with applicable water quality standards.

Basins – For water quality planning purposes, Montana is divided into four hydrologic basins or regions: the **Columbia Basin** (west slope waters draining to the Columbia River), the **Upper Missouri Basin** (all Missouri River drainages above the Marias River confluence), the **Lower Missouri Basin** (Missouri River drainages including and downstream of the Marias River, and a segment of the Saskatchewan drainage in Glacier National Park), and the **Yellowstone Basin** (waters draining into the Yellowstone and the Little Missouri rivers).

Beneficial uses – The uses that a waterbody is capable of supporting when all applicable water quality standards are met. What standards apply to a particular waterbody depend on its classification under the Montana Water-Use Classification System.

Beneficial use determination - A finding, based on sufficient credible data, that a state water is – or is not – achieving compliance with the water quality standards for its applicable beneficial uses.

Best Management Practices (BMP's) – Those activities, prohibitions, maintenance procedures, or other management practices used to protect and improve water quality. BMP's may or may not be sufficient to achieve water quality standards and protect beneficial uses.

Biological data – Chlorophyll *a* data, aquatic biology community information (including fish, macroinvertebrates, and algae), and wildlife community characteristics.

Chemistry and toxicity data – Includes bioassay, temperature and total suspended sediment data and information relating to such factors as toxicants, nutrients, and dissolved oxygen.

Communities – Organisms of a biologically related group (i.e. fish, wildlife, macroinvertebrates or algae).

Data categories – Chemistry/physical, habitat, and biological data packages used for assessing the availability of sufficient credible data for making aquatic life beneficial use-support determinations.

Data quality objectives – Quality control elements of a water quality monitoring plan, intended to ensure that the data obtained will be sufficient to fulfill the purpose for which it is being collected.

Degradation – A change in water quality that lowers the quality of high-quality waters for a parameter. The term does not include those changes in water quality determined to be nonsignificant pursuant to 75-5-301(5)(c). [75-5-103(5) MCA]

Full support – A beneficial use determination, based on sufficient credible data, that a waterbody is achieving all the water quality standards for the use in question.

Habitat data – See physical and habitat data.

Hydrogeomorphology – The science relating to the geographical, geological, and hydrological aspects of waterbodies, and to changes to these aspects in response to flow variations and to natural and human-caused events, such a heavy rainfall or channel straightening.

Hydrologic units (HUCs) – Watersheds delineated by the US Geologic Survey as fourth order drainages and assigned Hydrologic Unit Codes based on a standardized system. In Montana, there are several HUCs in each sub-major basin and two or more sub-major basins in each water basin.

Impaired waterbody – A waterbody or stream segment for which sufficient credible data shows that the waterbody or stream segment is failing to achieve compliance with applicable water quality standards (nonsupport or partial support of beneficial uses). [75-5-103(11) MCA]

Independent evidence – An approach used to make aquatic life use-support determinations when a limited array of chemistry/physical, habitat or biological data provide clear evidence that is sufficient to make a beneficial use-support determination.

Macroinvertebrates – Animals without backbones that are visible to the human eye (insects, worms, clams, and snails).

Montana Water-Use Classification System – Montana State regulations [ARM 17.30.606 - 614] assigning state surface waters to one of nine use classes. The class to which a waterbody is assigned defines the beneficial uses that it should support.

Naturally occurring – Water conditions or material present from runoff or percolation over which humans have no control or from developed land where all reasonable land, soil, and water conservation practices have been applied. [75-5-306(2) MCA]

Nonpoint source – Source of pollution which originates from diffuse runoff, seepage, drainage, or infiltration. [ARM 17.30.602(18)] Nonpoint source pollution is generally managed through best management practices or a water quality restoration plan.

Nonsupport – A beneficial use determination, based on sufficient credible data, that a waterbody is not achieving all the water quality standards for the use in question, and the degree of water quality impairment is relatively severe.

Overwhelming evidence – Information or data from only one data category which, by itself, constitutes sufficient credible data for making an aquatic life use-support determination.

Parameter – A physical, biological, or chemical property of state water when a value of that property affects the quality of the state water. [75-5-103(22) MCA]

Partial support – A beneficial use determination, based on sufficient credible data, that a waterbody is not achieving all the water quality standards for the use in question, but the degree of impairment is not severe.

Pathogens – Bacteria or other disease causing agents that may be contained in water.

Physical and habitat data – Narrative and photo documentation of habitat conditions, habitat surveys and function rankings, direct measurements of riparian or aquatic vegetation communities, and other measures of hydrogeomorphic characteristics and function.

Point source – A discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or vessel or other floating craft, from which pollutants are or may be discharged. [75-5-103(24) MCA]

Pollution – Defined by Montana law [75-5-103(25) MCA] as:

1. Contamination or other alteration of the physical, chemical, or biological properties of state waters that exceed that permitted by Montana water quality standards, including but not limited to standards relating to changes in temperature, taste, color, turbidity or odor; or,
2. the discharge, seepage, drainage, infiltration, or flow of liquid, gaseous, solid, radioactive, or other substance into state water that will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, or welfare, to livestock, or to wild animals, bird, fish or other wildlife, or
3. discharge, seepage, drainage, infiltration, or flow that is authorized under the pollution discharge permit rules of the board is not pollution under this chapter. Activities conducted under the conditions imposed by the department in short-term authorizations pursuant to 75-5-308 MCA are not considered pollution under this chapter.

Prioritization – A ranking of impaired waterbodies conducted by DEQ in consultation with the statewide advisory group using established criteria to rank waterbodies as high, moderate, or low priority for preparing water quality restoration plans (specifically TMDL plans).

Reasonable land, soil, and water conservation practices – Methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities. [ARM 17.30.602(21)]

Reference Condition – The condition of a waterbody capable of supporting its present and future beneficial uses when all reasonable land, soil, and water conservation practices have been applied. Reference conditions include natural variations in biological communities, water chemistry, soils, hydrology, and other natural physiochemical variations.

Region – See Basin.

Riparian area – Plant communities contiguous to and affected by surface and subsurface hydrologic features of natural waterbodies. Riparian areas are usually transitional between streams and upland.

Segment – A defined portion of a waterbody.

State waters – A body of water, irrigation system, or drainage system, either surface or underground (excludes water treatment lagoons or irrigation waters which do not return to state waters).

Sub-major basin – The aggregation of several watersheds or HUCs into a larger drainage system. The US Geological Survey has defined 16 sub-major basins in Montana with at least two in each of the Montana basins.

Sufficient credible data – Chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a waterbody is achieving compliance with applicable water quality standards. [75-5-103(30) MCA]

Suspended solids – Materials such as silt that may be contained in water and do not dissolve.

Threatened waterbody – A waterbody for which sufficient credible data and calculated increases in loads show that the water body or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:

(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or

(b) documented adverse pollution trends. [75-5-103(31) MCA]

Total Maximum Daily Load (TMDL) – The sum of the individual waste load allocations for point sources and load allocations for both nonpoint sources and natural background sources established at a level necessary to achieve compliance with applicable water quality standards. [75-5-103(32) MCA] In practice, TMDLs are water quality restoration targets for both point and nonpoint sources that are contained in a water quality restoration plan or in a permit.

Toxicant – A toxic agent.

Waterbody – A lake, reservoir, river, stream, creek, pond, marsh, wetland or other body of water above the ground surface.

Water quality limited segment (WQLS) – A body of water which is not fully supporting its beneficial uses (an impaired waterbody). If there is no water quality restoration plan with an approved TMDL for a waterbody, it is listed on the 303 (d) List of impaired waters.

Water quality restoration plan - A plan to improve water quality to achieve state water quality standards. Such a plan may also be referred to as a "TMDL plan" if it addresses the eight criteria used by the EPA to approve TMDL plans.

Water quality standards – the standards adopted in ARM 17.30.601 *et seq.* and WQB-7 to conserve water by protecting, maintaining, and improving suitability and usability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, contact recreation, and other beneficial uses.

Weight of evidence – An approach used to make aquatic life use-support determinations when there are high levels of information from all three data categories (chemistry/physical, habitat and biological), including two biological communities.

Acronyms and Abbreviations

ARM	Administrative Rules of Montana
BMP	Best Management Practice
BUD	Beneficial Use Determination
DEQ	Montana Department of Environmental Quality
DFWP	Montana Department of Fish, Wildlife and Parks
DQO	Data quality objectives
EPA	U.S. Environmental Protection Agency.
EQC	Montana Environmental Quality Council
HUC	Hydrologic Unit
MCA	Montana Code Annotated
MPDES	Montana Pollutant Discharge Elimination System
NPS	Nonpoint source pollution
PS	Point source pollution
SCD	Sufficient Credible Data
TMDL	Total Maximum Daily Load
WQB-7	Circular WQB-7, Montana Water Quality Standards

Chapter 2
Assessment and Listing of Impaired Waters

Assessment Process Summary

Chapter I describes the strategy mandated by federal and state law for protecting water quality in lakes, rivers, streams, and wetlands. As noted in that discussion, a vital step in the strategy involves monitoring state waters to identify those which do not meet state water quality standards and, therefore, do not fully support their beneficial uses. As required by the federal Clean Water Act, these "impaired" waterbodies are placed on the "303(d) List." The assessment method Montana uses for placing waters on the 303(d) List establishes the degree to which individual state waters support all, some, or none of their beneficial uses.

The 303(d) List is updated every two years by Montana DEQ and submitted to EPA for that agency's approval. The document that you are now reading constitutes "Part A" of the Montana 303(d) List for the year 2000. It focuses on the identification of impaired waters in the state. A separate Part B prioritizes the identified impaired waters for TMDL planning. The two parts together fulfill the Clean Water Act requirements to identify impaired waters in the state and schedule them for water quality restoration plan development.

The Year 2000 Revised 303(d) Listing Process

The 1997 Montana Legislature amended state water quality law to require that placement of waterbodies on the 303(d) List must be supported by "sufficient credible data" to ensure that such listings are justified. The amendments directed DEQ to assess all waterbodies from the 1996 303(d) List and "to remove any water body that lacks sufficient credible data to support its listing" (75-5-702 MCA). The sufficient credible data threshold applies both to the reassessment of waters previously on the list and to the consideration of any additional waters for listing.

In response to the legislative mandate, DEQ developed a two-step process for its assessment of impaired waters. First, DEQ searches out the available data for a waterbody and evaluates whether there are sufficient credible data to make a valid and reliable determination of beneficial use support. Then, if the data are adequate, DEQ compares the data with the applicable water quality standards to make a beneficial use-support determination. The following paragraphs provide an overview of this process. Readers wanting a detailed explanation of the process along with the tables and criteria used in making the sufficient credible data assessments and beneficial use determinations will find these in Appendix A.

Identification of Available Water Quality Data

In recent years DEQ's water quality monitoring data along with information from other selected sources have been incorporated into computerized water quality databases. These records and databases provided a basic foundation to which materials from external sources were added through a systematic effort. Then, at the beginning of this reassessment cycle, DEQ sent out more than 2,700 letters requesting information from individuals, organizations, and agencies. Responses to this mailing provided much useful information as well as references to additional materials available from other sources. Specific searches for these references and general searches for water quality information were conducted on the library catalogs and data bases of all the university system and resource agency libraries in the state.

Sufficient Credible Data (SCD) Assessment

Montana law defines sufficient credible data (SCD) as "chemical, physical, or biological monitoring data, alone or in combination with narrative information, that supports a finding as to whether a water body is achieving compliance with applicable water quality standards" (75-5-103 MCA). This definition is consistent with a model developed by EPA for assessing the beneficial uses of streams on the basis of a combination of physical (habitat), biological, and chemical monitoring (U. S. EPA 1997). For example, EPA recommends that monitoring for aquatic life use support include the collection of habitat and community level biological data and the measurement of chemical parameters in water and sediment.

Montana DEQ drew on the EPA model to develop sufficient credible data criteria and decision tables to evaluate data adequacy for lakes and wetlands as well as for streams. Methods and criteria are specified to evaluate SCD for the Montana Water-Use Classification System beneficial uses. These uses are: 1) drinking, culinary use, and food processing; 2) aquatic life support for fishes, associated aquatic life, waterfowl, and furbearers; 3) bathing, swimming, and recreation; 4) agriculture supply; and, 5) industrial supply.

The sufficient credible data review focuses on four components that contribute to data validity and reliability for water quality assessment:

- Technical soundness of methodology
- Spatial/temporal coverage
- Data quality
- Data currency.

In most cases a finding that there is sufficient credible data will result when several types of data have been collected over a period of time using sound technical methods and there are no indications of recent changes to the water body that would invalidate previously-obtained results.

Aquatic Life and Fisheries Support SCD – The Montana Water-Use Classification System requires that all waters support the "growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers" (ARM 17.30.604-624). Based on this requirement, the "aquatic life" assessment considers fish, invertebrates, aquatic plants, and associated wildlife. Therefore, the aquatic life sufficient credible data assessment entails an evaluation and scoring of the following data categories:

Habitat/physical – includes qualitative and /or quantitative riparian and aquatic vegetation information, and hydrogeomorphic characteristics and functions.

Biology – includes chlorophyll *a* data; and aquatic biological community data such as fish, macroinvertebrates and algae; and wildlife community characteristics.

Chemistry/toxicity – includes bioassay, temperature and total suspended sediment data and chemistry data such as toxicants, nutrients, and dissolved oxygen.

Ideally, SCD for aquatic life would include data pertaining to all three categories; but very strong evidence relating to two data categories can constitute SCD for an aquatic life beneficial use-support determination.

Drinking Water and Contact Recreation SCD – For drinking water and contact recreation uses, evaluation of multiple data categories is not necessary; the data are simply rated as sufficient or insufficient

for each of these uses based on tables which apply the four general components of data adequacy to the specific standards indicating drinking water and contact recreation use support.

Agricultural and Industrial Water Supply SCD – Generally, if there are sufficient credible data for drinking water, contact recreation, and aquatic life beneficial use-support determinations, there are also sufficient data to make agriculture and industry beneficial use-support determinations. However, additional salinity and toxicity information may be required for agriculture supply use-support determinations.

Beneficial Use-support determination (BUD)

Once it is ascertained that sufficient credible data are available for a waterbody, the assessment process moves to determine the level of beneficial use support. The degree of support for each beneficial use is rated using four categories:

- Full support
- Partial support
- Non-support
- Threatened

A use is fully supported when all water quality standards applicable to that use are met. When one or more standards are not met due to human activities, the water body is either "not supporting" or "partially supporting" the beneficial use tied to that standard. A use that is currently fully supported but for which observed trends or proposed new sources of pollution indicate a high probability of future impairment may be rated as "threatened." Because the standards for determining use support are different for each use, the use-support determinations for the various uses of a waterbody are often not the same. Only those beneficial uses that apply to the particular water-use classification of a waterbody are evaluated for that waterbody.

Beneficial Use Determination, Aquatic Life and Fisheries – Making aquatic life and fisheries use-support determinations can be a complex process because of the amount and variety of information that may bear on the decision. In some cases the reviewer will evaluate, compare, and weigh many bits of physical, biological, chemical, and habitat data in reaching the aquatic life and fisheries use-support determinations for a waterbody. In other cases clear evidence of use impairment or support is provided from only one or two of the aquatic life data categories (habitat/physical, biology, and chemistry). Where there is a wide variety of data with no single element that by itself supports a conclusion, the evaluator follows a process employing criteria that lead to a determination based on the overall weight of evidence. A slightly different process is followed when data are not available for all the categories, yet there is clear evidence to support a particular determination. Whatever the process used, data showing that a waterbody's aquatic life and fisheries uses are “moderately impaired” result in a “partially supporting” determination. Data indicating that aquatic life and fisheries uses are “severely impaired” result in the waterbody being listed as “not supporting” these uses.

Beneficial Use Determination, Other Uses – Reaching beneficial use determinations for the drinking water, contact recreation, agriculture supply, and industrial supply uses is a relatively straightforward process. For each of these uses criteria based on water quality standards are listed in a table, the available data for a waterbody are evaluated using the listed criteria, and an overall use-support determination is made based on consideration of all the criteria for which data are available. In some situations the overall rating will result from clear evidence of support or impairment associated with one or two criteria; other determinations may be derived from indications of water quality derived from the entire set of criteria that apply to a particular use.

The 303(d) List of Impaired Waters

The primary product of the sufficient credible data assessment and beneficial use-support determination process is a list of state waters which are impaired or threatened by human activity in their ability to fully support the beneficial uses specified by the Montana Water-Use Classification System.

The original hard-copy version of this 2000 303(d) List document presented, at this point, nearly 300 pages of tables and maps designed for printing on an 8.5 x 11 inch, black-and-white format. For this on-line presentation of the 303(d) the same information and comparable maps are presented in the "2001305(b) Montana Water Quality Assessment Database." Note that because this version of the database includes all water in Montana's water quality assessment system, users wanting to review only 303(d) list impaired waters should select "On List" as a search criterion in using this database.

Chapter 3
Previously Listed Waters not on the 2000 Impaired List

The 1997 amendments to Montana water quality law have resulted in major differences between previous impaired waters lists and the 2000 303(d) List. These amendments directed DEQ to "develop and maintain a data management system that can be used to assess the validity and reliability of the data used in the listing and priority ranking process" and to use this system to revise the list and to "remove any water body that lacks sufficient credible data to support its listing." These mandates have required DEQ to employ a far more rigorous process in developing the 2000 List than had been used in the past.

This more thorough process identified four specific groups of waterbodies for permanent or temporary removal from the impaired waters list. TMDL plans have been approved for a few waters on the 1998 List, so (under EPA policy) they have been removed from the 2000 List. A number of waters from earlier lists are located on tribal reservations where water quality administration is the responsibility of the tribal governments and/or the EPA, not the State of Montana. These waters do not appear on the 2000 List. New data and the more rigorous review have also shown that some waters previously evaluated as being impaired are, in fact, fully supporting all applicable uses. Finally, it has been determined that there are not sufficient credible data to reach valid use support determinations for many waters included on recent lists. In accordance with the 1997 amendments to state law, these waters have been removed from the list and targeted for reassessment as soon as practible.

Waters with Approved TMDL Plans

The following waters have been removed from the 2000 303(d) List of impaired waterbodies because a Water Quality Restoration Plan (TMDL Plan) for all TMDL water quality impairment parameters has been completed and approved by EPA:

Name	Parameter(s)	Watershed	HUC #	Approval Date
Deep Creek	Sediment, Flow, Temperature	Upper Missouri	10030101	Oct. 16, 1996
Elk Creek	Sediment	Lower Clark Fork (Columbia)	17010213	Dec. 8, 1998

Nonpoint water quality restoration plans addressing specific impairment parameters have been completed for the Clark Fork of the Columbia River from its headwaters to the Flathead River (nitrogen and phosphorus parameters) and the Teton River (salinity). Because these plans do not address all the factors impairing these two rivers, they are not a basis for removing them from the 303(d) List at this time.

Tribal / EPA Jurisdiction Waterbodies

The 1996 and 1998 Montana lists of impaired streams and lakes included waterbodies within tribal reservation boundaries. In its approval of these two lists, EPA specifically stated that:

> *EPA's approval of Montana's Section 303(d) list extends to all waterbodies on the list with the exception of those waters that are within Indian Country as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate , will retain responsibilities under Section 303(d) for those waters.*

Given this position on the part of EPA no useful purpose would be served by continuing to include Indian Country waters in the State's list revisions. DEQ has identified three categories of waterbodies involving tribal and/or EPA jurisdiction. These three categories are:

1. Waterbodies that are located completely within tribal reservation boundaries and are therefore entirely under the jurisdiction of the tribe and/or EPA.

2. Waterbodies with some sections under State of Montana water quality jurisdiction and other sections under tribal/EPA jurisdiction.

3. Waterbodies from the 1998 List where a tribal reservation boundary follows (at least approximately) the main channel of the waterbody resulting in shared or joint jurisdiction.

Tribal/EPA Jurisdiction

DEQ has identified 19 waterbodies from the 1998 List that are completely within a reservation boundary (See Table 3-A). These waters, representing an estimated 428 stream miles, have not been reassessed during this review cycle and do not appear on either the 2000 list of impaired waters or the list of waters to be reassessed in the future.

Mixed State and Tribal/EPA Jurisdiction

DEQ has identified 19 waterbodies from the 1998 list where the State of Montana has jurisdiction over a portion of the waterbody while the remainder of the waterbody is within a reservation boundary under tribal and/or EPA jurisdiction (see Table 3-B). For example, Peoples Creek flows for 47.7 miles within the jurisdiction of the State of Montana and for an additional 65.1 miles within the Fort Belknap Reservation. Only the portions of these waterbodies which are under state jurisdiction has been assessed for possible inclusion on the 2000 303(d) List. DEQ estimates that the State has jurisdiction over 751 miles of theses streams while the tribes/EPA have jurisdiction over an estimated 624.6 miles.

Shared State and Tribal/EPA Jurisdiction

DEQ has also identified 14 waterbodies from the 1998 List where water quality jurisdiction is shared between the State of Montana and a tribe/EPA. These waterbodies generally have reservation boundaries coinciding with the waterway, or they flow back and forth across reservation boundaries so frequently that cooperative water quality management is necessary. These shared jurisdiction waterbodies <u>are</u> assessed in the current 303(d) Report and are also identified in Table 3-C. DEQ estimates that these waterbodies total 543.1 stream miles and include 126,000-acre Flathead Lake.

Table 3-A. 1998 303(d) List Segments which are completely under Tribal Jurisdiction

Watershed	Water Body Name	Tribal Reservation	HUC #	1998 303(d) List ID #	1998 303(d) List "Impaired Size" (mi)
LOWER MISSOURI BASIN					
St. Mary	SWIFTCURRENT CREEK	Blackfeet	10010002	MT40T001_2	6
Two Medicine	BADGER CREEK	Blackfeet	10030201	MT41M001_4	14
Cut Bank	DEPOT CREEK	Blackfeet	10030202	MT41L001_2	1
Cut Bank	WILLOW CREEK	Blackfeet	10030202	MT41L001_3	19
Peoples	LITTLE PEOPLES CREEK	Fort Belknap	10050009	MT40I001_1	20
Prairie Elk-Wolf	LITTLE PORCUPINE CREEK	Fort Peck	10060001	MT40S002_2	13
YELLOWSTONE BASIN					
Lower Bighorn	SOAP CREEK	Crow	10080015	MT43P004_1	27
Lower Bighorn	ROTTEN GRASS CREEK	Crow	10080015	MT43P004_2	38
Lower Bighorn	BEAUVAIS CREEK	Crow	10080015	MT43P004_4	35
Little Bighorn	OWL CREEK	Crow	10080016	MT43O001_1	25
Little Bighorn	RENO CREEK	Crow	10080016	MT43O001_2	15
Little Bighorn	LODGE GRASS CREEK	Crow	10080016	MT43O001_3	44
Little Bighorn	LITTLE BIGHORN RIVER	Crow	10080016	MT43O001_4	80
COLUMBIA BASIN					
Lower Flathead	MISSION CREEK	Flathead	17010212	MT76L002_1	23
Lower Flathead	POST CREEK	Flathead	17010212	MT76L002_2	19
Lower Flathead	CROW CREEK	Flathead	17010212	MT76L002_3	13
Lower Flathead	SPRING CREEK	Flathead	17010212	MT76L002_4	14
Lower Flathead	WEST MILLER COULEE	Flathead	17010212	MT76L002_5	11
Lower Flathead	CAMAS CREEK	Flathead	17010212	MT76L002_9	11

Table 3 - B. 1998 303(d) List Segments, portions of which are under State of Montana Jurisdiction and portions of which are under Tribal Jurisdiction

Watershed	Waterbody Name	Tribal Reservation	HUC Number	Year 2000 303(d) List Waterbody ID	Water Body portion under State of Montana Jurisdiction	State/Tribal Jurisdiction Size	Year 1998 303(d) List Waterbody ID
LOWER MISSOURI BASIN							
Two Medicine	TWO MEDICINE RIVER below Lower Two Medicine Lake	Blackfeet	10030201	MT41M001_010	TWO MEDICINE RIVER, from Birch Cr. to the mouth (Marias R).	State 4.3 miles. Tribal 80.1 miles.	MT41M001_12
Two Medicine	RAILROAD CREEK	Blackfeet	10030201	MT41M002_010	RAILROAD CREEK, headwaters to Blackfoot Indian Reservation boundary.	State 6.1 miles. Tribal 3.0 miles.	MT41M001_1
Two Medicine	MIDVALE CREEK	Blackfeet	10030201	MT41M002_020	MIDVALE CREEK headwaters to the Blackfeet Indian Reservation boundary.	State 5.8 miles. Tribal 5.4 miles.	MT41M001_2
Two Medicine	SOUTH FORK TWO MEDICINE RIVER	Blackfeet	10030201	MT41M002_030	SOUTH FORK TWO MEDICINE RIVER, headwaters to the Blackfeet Indian Reservation boundary.	State 11.9 miles. Tribal 13.7 miles.	MT41M001_3
Cut Bank	CUT BANK CREEK	Blackfeet	10030202	MT41L001_040	CUT BANK CREEK, Blackfoot Indian Reservation boundary to the mouth	State 21.8 miles. Tribal 28.8 miles.	MT41L001_4
Big Sandy	BIG SANDY CREEK	Rocky Boy's	10050005	MT40H001_010	BIG SANDY CREEK, Lonesome Lake Coulee to the mouth (Milk R), excepting reaches on Rocky Boy's Reservation.	State 37.1 miles. Tribal 23.0 miles	MT40H001_1
Peoples	PEOPLES CREEK	Fort Belknap	10050009	MT40I001_020	PEOPLES CREEK, headwaters to the Fort Belknap Indian Reservation boundary.	State 47.7 miles. Tribal 65.1 miles.	MT40I001_2
Peoples	KING CREEK	Fort Belknap	10050009	MT40I001_040	KING CREEK, headwaters to Fort Belknap Indian Reservation boundary.	State 0.7 miles. Tribal 1.2 miles.	MT40I001_4
Beaver	BEAVER CREEK	Fort Belknap	10050014	MT40M001_011 ..... MT40M001_012	BEAVER CREEK, headwaters to Fort Belknap Indian Reservation boundary. BEAVER CREEK, Fort Belknap Indian Reservation boundary to Black Coulee.	State 234.1 miles - split into two segments. Tribal 7.0 miles.	MT40M001_1
Beaver	BIG WARM CR	Fort Belknap	10050014	MT40M002_030	BIG WARM CREEK, Fort Belknap Indian Reservation boundary to mouth (Beaver Cr.).	State 54.0 miles. Tribal 16.3 miles.	MT40M002_3
Poplar	POPLAR RIVER	Fort Peck	10060003	MT40Q001_010	POPLAR RIVER & MIDDLE FORK POPLAR RIVER, Canada to the Fort Peck Indian Reservation boundary.	State 28.5 miles mainstem & 34.3 miles Middle Fork. Tribal 78.5 miles.	MT40Q001_1

Table 3 - B. 1998 303(d) List Segments, portions of which are under State of Montana Jurisdiction and portions of which are under Tribal Jurisdiction

Watershed	Waterbody Name	Tribal Reservation	HUC Number	Year 2000 303(d) List Waterbody ID	Water Body portion under State of Montana Jurisdiction	State/Tribal Jurisdiction Size	Year 1998 303(d) List Waterbody ID
YELLOWSTONE BASIN							
Rosebud	ROSEBUD CREEK	Northern Cheyenne	1010003	MT42A001_011, MT42A001_012, ……..…….... MT42A001_013	ROSEBUD CREEK, from the mouth to the Northern Cheyenne Indian Reservation northern boundary. ROSEBUD CREEK, headwaters to the Northern Cheyenne Indian Reservation southern boundary.	State 135.5 miles - split into three segments. Tribal 73 miles.	MT42A001_1
Upper Yellowstone - Pompeys Pillar	FLY CREEK	Crow	10070007	MT43Q002_010	FLY CREEK, Crow Indian Reservation boundary to the mouth.	State 53.9 miles. Tribal 14.8 miles.	MT43Q002_1
Pryor	PRYOR CREEK	Crow	10070008	MT43E001_010	PRYOR CREEK, Crow Indian Reservation boundary to the mouth (Yellowstone River).	State 26.9 miles. Tribal 43.7 miles.	MT43E001_1
Lower Bighorn	BIGHORN RIVER - Little Bighorn R to mouth	Crow	10080015	MT43R001_010	BIGHORN RIVER, from Crow Indian Reservation boundary to the mouth.	State 39.4 miles. Tribal 2.8 miles.	MT43P005_1
Lower Bighorn	BIGHORN RIVER - Yellowtail Dam to Little Bighorn R	Crow	10080015	MT43R001_020	BIGHORN RIVER, from Yellowtail Dam to Crow Indian Reservation boundary.	State 7.0 miles. Tribal 36.1 miles.	MT43P003_1
COLUMBIA BASIN							
Lower Flathead	FLATHEAD RIVER	Flathead	17010212	MT76L001_010	FLATHEAD RIVER, Flathead Indian Reservation boundary to the mouth.	State 3.2 miles. Tribal 87.1 miles.	MT76L001_1
Lower Flathead	LITTLE BITTERROOT RIVER	Flathead	17010212	MT76L002_060	LITTLE BITTERROOT RIVER, Hubbart Reservoir to the Flathead Indian Reservation boundary.	State 4.9 miles. Tribal 55.4 miles.	MT76L002_6
Lower Flathead	SULLIVAN CREEK	Flathead	17010212	MT76L002_070	SULLIVAN CREEK, headwaters to the Flathead Reservation	State 3.8 miles. Tribal 14.9 miles.	MT76L002_7

Table 3 - C. 1998 303(d) List Segments which have shared State of Montana and Tribal Jurisdiction

Watershed	Water Body Name	Tribal Reservation	HUC #	Year 2000 Segment ID	Segment Size (mi.)	Shared Tribal Jurisdiction Description
LOWER MISSOURI BASIN						
St. Mary	DIVIDE CREEK, headwaters to the mouth (Saint Mary River).	Blackfeet	10010002	MT40T002_010	10.1	Reservation boundary more or less coincides with creek for 4 miles upstream from the mouth.
Two Medicine	TWO MEDICINE RIVER, from Birch Creek to mouth (Marias R).	Blackfeet	10030201	MT41M001_010	4.3	Reservation boundary more or less coincides with main channel.
Two Medicine	BIRCH CREEK, Blacktail Cr. to the mouth (Two Medicine R).	Blackfeet	10030201	MT41M002_080	34.1	Reservation boundary more or less coincides with main channel.
Cut Bank	CUT BANK CREEK, Blackfeet Indian Reservation boundary to the mouth (Marias R).	Blackfeet	10030202	MT41L001_040	23.1	Reservation boundary more or less coincides with main channel.
Middle Milk	MILK RIVER, from Fresno Dam to Whitewater Creek.	Fort Belknap	10050004	MT40J001_010	270.4	Reservation boundary more or less coincides with main channel from Snake Cr. to Dodson Dam (about 72.5 river
Big Sandy	BIG SANDY CREEK, from Lonesone Lake Coulee to the mouth (Milk R)	Rocky Boy's	10050005	MT40H001_010	61.6	Many short segments under Tribal jurisdiction are intermixed with segments under State jurisdiction (approximately 37.1 mi. State and 24.5 mi. Tribal).
Lower Milk	MILK RIVER, from Beaver Creek to the mouth (Missouri River).	Fort Peck	10050012	MT40O001_010	135.9	Reservation boundary more or less coincides with main channel from Porcupine Cr. to the mouth (approx 16.7 miles).
Porcupine	PORCUPINE CREEK, junction of West and Middle Forks to mouth (Milk R).	Fort Peck	10050016	MT40O003_010	45.6	Reservation boundary more or less follows creek channel.
Prairie Elk - Wolf	MISSOURI RIVER, from Fort Peck Dam to Poplar River.	Fort Peck	10060001	MT40S001_010`	87.6	Reservation boundary more or less coincides with the main channel.
Charlie - Little Muddy	MISSOURI RIVER, from Poplar River to North Dakota.	Fort Peck	10060005	MT40S003_010	94.8	Reservation boundary more or less coincides with main channel from Poplar River to Big Muddy Cr. (approximately 48 miles).
Big Muddy	MUDDY CREEK, from northern Fort Peck Reservation boundary to the mouth (Missouri River).	Fort Peck	10060006	MT40R001_010	80.8	Reservation boundary more or less coincides with the main channel from about 1.5 miles south of Antelope Creek to the mouth (80.8 miles).
YELLOWSTONE BASIN						
Lower Tongue	TONGUE RIVER, from Hanging Woman Creek to the diversion dam just above Pumpkin Cr.	Northern Cheyenne	10090102	MT42C001_012	147.9	Reservation boundary more or less coincides with main channel from Cook Creek to just north of Reservation Cr. (about 47.3 miles).
Lower Tongue	COOK CREEK, from Northern Cheyenne Reservation boundary to the mouth (Tongue R),	Northern Cheyenne	10090102	MT42C002_010	17.5	Reservation boundary more or less follows creek channel.
COLUMBIA BASIN						
Flathead Lake	FLATHEAD LAKE	Flathead	17010208	MT76O003_010	126,007 acres	Roughly the southern half of the lake is under Tribal Jurisdiction.

Waterbodies Fully Supporting Their Beneficial Uses

Assessments of the following waterbodies have found sufficient credible data to provide a basis for use support determinations for all the applicable beneficial uses. The determination findings are that the relevant standards are being met on these waterbodies and all applicable uses are fully supported.

Table 3-D. Waters Fully Supporting All Applicable Beneficial Uses

WATERSHED	SEGMENT NAME - Description	HUC #	WATERBODY #	SIZE	Units	MWUCS Class
UPPER MISSOURI BASIN						
Big Hole	AMERICAN CREEK from headwaters to mouth (California Cr) T3N R11W	10020004	MT41D003_060	6.5	Mi	A-1
Big Hole	SEYMOUR CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D003_140	15.2	Mi	B-1
Madison	MADISON RIVER from Quake Lake to Ennis Lake	10020007	MT41F001_020	55.7	Mi	B-1
Madison	MADISON RIVER from Hebgen Dam to Quake Lake	10020007	MT41F001_030	2.1	Mi	B-1
Madison	CHERRY CREEK, Lee Metcalf Wilderness boundary to the mouth (Madison R)	10020007	MT41F002_010	19.9	Mi	B-1
Madison	STANDARD CREEK from headwaters to the mouth (Madison R)	10020007	MT41F004_090	12.7	Mi	B-1
Upper Missouri	MISSOURI RIVER from Hauser Dam to Holter Reservoir	10030101	MT41I004_020	4.6	Mi	B-1
Smith	SMITH RIVER NORTH FORK, headwaters to Lake Sutherlin	10030103	MT41J002_012	13.5	Mi	B-1
Sun	FORD CREEK, headwaters to 2 mi. above mouth	10030104	MT41K002_030	17.2	Mi	B-1
LOWER MISSOURI BASIN						
Two Medicine	MIDVALE CREEK headwaters to the Blackfeet Reservation boundary	10030201	MT41M002_020	5.8	Mi	A-Closed
Two Medicine	ELBOW CREEK, Headwaters to the mouth (South Fork Badger Cr)	10030201	MT41M002_060	4.8	Mi	B-1
Teton	McDONALD CREEK from headwaters to the mouth (Teton R)	10030205	MT41O002_030	9.1	Mi	B-1
Teton	NORTH FORK OF TETON RIVER, Headwaters to the mouth (Teton R)	10030205	MT41O002_050	18.7	Mi	B-1
Judith	BIG SPRING CREEK from headwaters to the East Fork	10040103	MT41S004_010	1.9	Mi	B-2
Redwater	REDWATER RIVER, headwaters to Hell Cr.	10060002	MT40P001_011	50.5	Mi	C-3
Redwater	REDWATER RIVER, Buffalo Springs Cr. to Pasture Cr.	10060002	MT40P001_011	48.9	Mi	C-3

Table 3-D. Waters Fully Supporting All Applicable Beneficial Uses (Cont.)

WATERSHED	SEGMENT NAME - Description	HUC #	WATERBODY #	SIZE	Units	MWUCS Class
YELLOWSTONE BASIN						
Upper Yellowstone	BIG CREEK from headwaters to the end of the road	10070002	MT43B004_113	10.4	Mi	B-1
Upper Yellowstone	EAST BOULDER RIVER from headwaters to the NF boundary	10070002	MT43B004_143	16.6	Mi	B-1
COLUMBIA BASIN						
Upper Clark Fork	TWIN LAKES CREEK from East Fork to mouth (Warm Springs Cr)	17010201	MT76G002_020	5.3	Mi	B-1
Upper Clark Fork	LOST CREEK, Headwaters to the south State Park boundary	17010201	MT76G002_071	7.2	Mi	B-1
Upper Clark Fork	SPOTTED DOG CREEK from North Fork to the Forest boundary	17010201	MT76G004_031	1.1	Mi	B-1
Flint-Rock	GEORGETOWN LAKE	17010202	MT76E005_010	3655.1	Ac	A-1
Flint-Rock	LANDERS FORK from Falls Cr to the mouth (Blackfoot R)	17010203	MT76F002_010	11.6	Mi	B-1
Blackfoot	CHAMBERLAIN CREEK from East Fork to mouth (Blackfoot R)	17010203	MT76F004_020	2.7	Mi	B-1
Blackfoot	NORTH FORK BLACKFOOT RIVER, East Fork to the mouth (Blackfoot R)	17010203	MT76F004_030	25.7	Mi	B-1
Blackfoot	COTTONWOOD CREEK from 10 miles upstream to the mouth (Blackfoot R)	17010203	MT76F004_040	10	Mi	B-1
Blackfoot	SEELEY LAKE	17010203	MT76F007_010	1047.7	Ac	B-1
Stillwater	EAST SPRING CREEK Headwaters to Trumbull Cr.	17010210	MT76P003_061	4.9	Mi	B-1
Stillwater	EAST SPRING CREEK Trumbull Cr. to mouth	17010210	MT76P003_062	3.5	Mi	B-1
Swan	PIPER CREEK from headwaters to Moore Cr.	17010211	MT76K003_061	5.6	Mi	B-1
Lower Clark Fork	NOXON RESERVOIR	17010213	MT76N002_010	8800	Ac	B-1
Lower Clark Fork	THOMPSON RIVER from headwaters to mouth (Clark Fork)	17010213	MT76N004_010	48.7	Mi	B-1

Waterbodies Lacking Sufficient Credible Data

The 1997 amendments to Montana water quality law direct DEQ to develop a method to ensure that the decision to include any waterbody on the 303(d) list is based on sufficient credible data. The law specifically requires the department to:

> *remove any waterbody that lacks sufficient credible data to support its listing. If the department removes a waterbody because there is a lack of sufficient credible data to support its listing, the department shall monitor and assess the waterbody during the next field season or as soon as possible thereafter to determine whether it is a threatened waterbody or an impaired waterbody.* (75-5-702(6) MCA).

Using the water quality assessment method described at the beginning of this chapter, DEQ has found that it lacks sufficient credible data to make beneficial use support determinations for approximately 500 waterbodies listed on the 1998 303(d) List of impaired waters. Some of these waterbodies have been listed in the past on the basis of evaluations that provided little or no solid information as to whether the applicable standards were being met. When reviewed during the current assessment cycle, the data available on them failed the test of constituting "sufficient credible data" to support a listing. In other cases the passage of time and changing resource or use conditions have made old data unusable for determining current use support.

It should be noted that the uses that a waterbody is required to support are based on its classification under the Montana Water-Use Classification System. If there is sufficient credible data to support a determination that any required use of a waterbody is impaired, the waterbody must be placed (or remain) on the 303(d) List of impaired and threatened waters. A waterbody is only removed from the list and targeted for monitoring and reassessment, if data are lacking to evaluate all of its uses **or** if it is determined that the waterbody fully supports some of its uses but the data needed to assess support of other uses is not available.

The waterbodies listed in Table 3-E will be scheduled for monitoring and reassessment in the coming years (see Appendix B for a preliminary schedule). The table information is organized into four planning basins (Upper Missouri, Lower Missouri, Yellowstone, and Columbia). Each basin is composed of two or more sub-major basins which, in turn, are made up of watersheds or hydrologic units (HUCs). In the table an "X" in the column beneath a beneficial use label indicates that there was a lack of sufficient credible data to assess support for that use. An "F" indicates that sufficient data were available to reach a "full support" determination for that use.

PLEASE NOTE: The following list only reports the assessment RESULTS for the listed waters. It is not THE record for these waters. The primary record for each water consists of a hard-file containing or referencing the data used in making the assessment, showing how the data were used, and stating the rationale for the assessment decisions. These files may be reviewed at the office of the DEQ Monitoring and Data Management Bureau. Record Sheets for all waters assessed during the 2000 review cycle may be viewed on the Montana Natural Resource Information System EnvironNet Database at http://nris.state.mt.us/wis/environet/. A CD containing the same records is available from the DEQ, Monitoring and Data Management Bureau.

Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Use Support						
						Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
UPPER MISSOURI BASIN												
RED ROCK	RED ROCK RIVER between Lima Reservoir and Lower Red Rock Lake	10020001	MT41A001_020	30.5	Mi	X	X		F	X	F	X
RED ROCK	CLARK CANYON RESERVOIR	10020001	MT41A002_010	4888	Ac	X	X		X	X	X	X
RED ROCK	MEDICINE LODGE CREEK from headwaters to mouth (Horse Prairie Cr.)	10020001	MT41A003_010	32.2	Mi	X	X		X	X	X	X
RED ROCK	BLOODY DICK CREEK from headwaters to mouth (Horse Prairie Cr)	10020001	MT41A003_100	32.3	Mi	X	X		X	X	X	X
RED ROCK	SHEEP CREEK from Muddy Cr to mouth (Red Rock R)	10020001	MT41A003_150	9.8	Mi	X	X		X	X	X	X
RED ROCK	UN-NAMED DRAINAGE T-14S R-8W S-9	10020001	MT41A003_210	1	Mi	X	X		X	X	X	X
RED ROCK	PRICE CREEK, Headwaters to the mouth (Red Rock R)	10020001	MT41A004_010	8.6	Mi	X	X		X	X	X	X
RED ROCK	FISH CREEK from headwaters to mouth (Metzel Cr.)	10020001	MT41A004_030	6.9	Mi	X	X		X	X	X	X
RED ROCK	CORRAL CREEK from headwaters to mouth (Red Rock R)	10020001	MT41A004_040	4.4	Mi	X	X		X	X	X	X
RED ROCK	EAST FK CLOVER CREEK, Headwaters to mouth (Clover Cr-Wolvering Cr)	10020001	MT41A004_050	5.5	Mi	X	X		X	X	X	X
RED ROCK	HELL ROARING CREEK from headwaters to mouth (Red Rock R)	10020001	MT41A004_060	9	Mi	X	X		X	X	X	X
RED ROCK	LONG CREEK from headwaters to mouth (Red Rock R)	10020001	MT41A004_070	19.5	Mi	X	X		X	X	X	X
RED ROCK	PEET CREEK from headwaters to mouth (Red Rock R)	10020001	MT41A004_090	8.4	Mi	X	X		X	X	X	X
RED ROCK	TOM CREEK Headwaters to upper Red Rock Lake	10020001	MT41A004_100	6.7	Mi	X	X		X	X	X	X
RED ROCK	JONES CREEK Headwaters to Mud Cr T14S, R3W SEC 30,31, T15S R3W SEC 4	10020001	MT41A004_130	7.1	Mi	X	X		X	X	X	X
RED ROCK	BEAN CREEK Headwaters to the Mouth (Red Rock R) T4S R3E	10020001	MT41A004_140	5.7	Mi	X	X		X	X	X	X
BEAVERHEAD	FARLIN CREEK from headwaters to mouth (Grasshopper Cr) T6S R12W	10020002	MT41B002_020	6	Mi	X	X		X	X	X	X
BEAVERHEAD	EAST FORK BLACKTAIL DEER CREEK, Headwaters to mouth (Blacktail Deer Cr	10020002	MT41B002_040	17.1	Mi	X	X		X	X	X	X
BEAVERHEAD	EAST FORK DYCE CREEK from headwaters to mouth (Dyce Cr-Grasshopper Cr)	10020002	MT41B002_050	4.7	Mi	X	X		X	X	X	X
BEAVERHEAD	WEST FK BLACKTAIL DEER CR, Headwaters to mouth (Blacktail Deer Cr)	10020002	MT41B002_060	15.9	Mi	X	X		X	X	X	X
BEAVERHEAD	WEST FK DYCE CR, Headwaters to mouth (Dyce Cr - Grasshopper Cr)	10020002	MT41B002_070	4.6	Mi	X	X		X	X	X	X
BEAVERHEAD	SPRING CREEK	10020002	MT41B002_080	14.8	Mi	X	X		X	X	X	X
BEAVERHEAD	RATTLESNAKE CREEK from headwaters to mouth (Beaverhead R)	10020002	MT41B002_090	25.6	Mi	X	X		X	X	X	X
BEAVERHEAD	CLARK CANYON CREEK, Headwaters to the mouth (Beaverhead R) T9S R10W	10020002	MT41B002_110	8	Mi	X	X		X	X	X	X
BEAVERHEAD	RESERVOIR CREEK from headwaters to mouth (Grasshopper Cr)	10020002	MT41B002_120	12.3	Mi	X	X		X	X	X	X
BEAVERHEAD	STONE CREEK below confluence with unnamed creek in NE, S34,T6S, R7W	10020002	MT41B002_131	7.3	Mi	X	X		X	X	X	X
BEAVERHEAD	DYCE CREEK, confluence of East and West Forks to Grasshopper Cr	10020002	MT41B002_140	4.1	Mi	X	X		X	X	X	X
BEAVERHEAD	STEEL CREEK, a tributary of Scudder Cr. T6S R12W	10020002	MT41B002_160	3.7	Mi	X	X		X	X	X	X
BEAVERHEAD	TAYLOR CREEK, Headwaters to mouth (Grasshopper Cr)	10020002	MT41B002_170	11.5	Mi	X	X		X	X	X	X
BEAVERHEAD	SCUDDER CREEK, Headwaters to the mouth (Grasshopper Cr) T6S R12W SEC 15,16	10020002	MT41B002_180	4.7	Mi	X	X		X	X	X	X
BEAVERHEAD	INDIAN CREEK, Tributary to the East Fk Blacktail Deer Cr T11S R5W SEC 34.	10020002	MT41B002_190	2.7	Mi	X	X		X	X	X	X
RUBY	WISCONSIN CREEK from headwaters to mouth (Leland Slough)	10020003	MT41C002_010	13.8	Mi	X	X		X	X	X	X
RUBY	INDIAN CREEK from headwaters to mouth (Mill Cr-Ruby R)	10020003	MT41C002_030	11.3	Mi	X	X		F	X	F	F
RUBY	CURRANT CREEK, Headwaters to mouth (Ramshorn Cr) T4S, R4W, S35	10020003	MT41C002_060	3.7	Mi	X	X		X	X	X	X
RUBY	MILL GULCH, Trib. to Granite Cr-Alder Cr from Forest Boundary to Headwaters	10020003	MT41C002_070	3	Mi	X	X		X	X	X	X

USE SUPPORT: F = FULLY SUPPORTING X = NOT ASSESSED (Insufficient Credible Data)

Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
RUBY	CALIFORNIA CREEK tributary of Ruby R T-5S R-4W	10020003	MT41C002_090	10.9	Mi	X	X		X	X	X	X
RUBY	GARDEN CREEK, Headwaters to mouth at Ruby Reservoir	10020003	MT41C002_100	7.3	Mi	X	X		X	X	X	X
RUBY	MORMAN CREEK, Headwaters to mouth (Upper end of Ruby R Reservoir)	10020003	MT41C002_110	7.8	Mi	X	X		X	X	X	X
RUBY	HARRIS CREEK, tributary to California Cr from Forest Boundary to Headwaters	10020003	MT41C002_120	2.9	Mi	X	X		X	X	X	X
RUBY	COAL CREEK from headwaters to mouth (Middle Fork Ruby R)	10020003	MT41C003_020	8.3	Mi	X	X		X	X	X	X
RUBY	COTTONWOOD CREEK from headwaters to mouth (Ruby R)	10020003	MT41C003_030	10.4	Mi	X	X		F	X	X	X
RUBY	EAST FORK RUBY RIVER from headwaters to mouth (Ruby R)	10020003	MT41C003_040	8.3	Mi	X	X		X	X	X	X
RUBY	WARM SPRINGS CREEK from headwaters to mouth (Ruby R)	10020003	MT41C003_050	8.6	Mi	X	X		X	F	X	X
RUBY	SWEETWATER CREEK from headwaters to mouth (Ruby R)	10020003	MT41C003_060	23	Mi	X	X		X	X	X	X
RUBY	NORTH FK GREENHORN CR from headwaters to confluence with South Fk	10020003	MT41C003_070	7.7	Mi	X	X		X	X	X	X
RUBY	WEST FORK RUBY RIVER from headwaters to mouth (Ruby R)	10020003	MT41C003_080	7.4	Mi	X	X		X	X	X	X
RUBY	MIDDLE FORK RUBY RIVER from Divide Cr to mouth (Ruby R)	10020003	MT41C003_090	10.5	Mi	X	X		X	X	X	X
RUBY	POISON CREEK, Headwaters to mouth (Ruby R) T11S, R3W	10020003	MT41C003_110	5.3	Mi	X	X		X	X	X	X
RUBY	BASIN CREEK, Headwaters to mouth (Middle Fork Ruby R) T11S, R3W	10020003	MT41C003_120	4.5	Mi	X	X		X	X	X	X
RUBY	BURNT CREEK, Headwaters to mouth (Ruby R) T10S, R3W	10020003	MT41C003_130	5	Mi	X	X		X	X	X	X
RUBY	HAWKEYE CREEK tributary to Ruby R (Middle Fork) T11S, R3W	10020003	MT41C003_140	3.6	Mi	X	X		X	X	X	X
RUBY	SHOVEL CREEK, headwaters to mouth (Cabin Cr - Middle Fork Ruby R)	10020003	MT41C003_150	4	Mi	X	X		X	X	X	X
RUBY	RUBY RIVER RESERVOIR	10020003	MT41C004_010	970.1	Ac	X	X		X	X	X	X
BIG HOLE	CAMP CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D002_020	14.3	Mi	X	X		X	X	X	X
BIG HOLE	DIVIDE CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D002_040	12.2	Mi	X	X		X	X	X	X
BIG HOLE	GROSE CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D002_060	3.4	Mi	X	X		X	X	X	X
BIG HOLE	SASSMAN GULCH from headwaters to mouth (Big Hole R)	10020004	MT41D002_070	6.5	Mi	X			X	X	X	X
BIG HOLE	SEVEN SPRINGS CREEK Headwaters to mouth (Browns Gulch-Big Hole R)	10020004	MT41D002_080	3.3	Mi	X	X		X	X	X	X
BIG HOLE	BIRCH CREEK headwaters to the National Forest Boundary	10020004	MT41D002_090	12.8	Mi	X	X		X	F	X	X
BIG HOLE	Mc CLAIN CREEK Tributary to Moose Cr (Big Hole R)	10020004	MT41D002_130	3.1	Mi	X	X		X	X	X	X
BIG HOLE	SOAP CREEK from headwaters to mouth (Big Hole R) T1S R9W S 23	10020004	MT41D002_140	8.3	Mi	X	X		X	X	X	X
BIG HOLE	LOST CREEK in the Lower Big Hole Watershed T4S R9W SEC 17	10020004	MT41D002_180	7.8	Mi	X	X		X	X	X	X
BIG HOLE	CHARCOAL GULCH tributary of the Big Hole R T 1S R 10W	10020004	MT41D003_010	3.8	Mi	X	X		X	X	X	X
BIG HOLE	DELANO CREEK from headwaters to mouth (Jerry Cr)	10020004	MT41D003_030	2.3	Mi	X	X		X	X	X	X
BIG HOLE	DEEP CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D003_040	7.9	Mi	X	X		X	X	X	X
BIG HOLE	SIXMILE CREEK from headwaters to mouth (California Cr)	10020004	MT41D003_090	3.1	Mi	X	X		X	X	X	F
BIG HOLE	SEVENMILE CREEK from headwaters to mouth (Deep Cr)	10020004	MT41D003_110	6.3	Mi	F	F		F	X	F	F
BIG HOLE	TWELVEMILE CREEK from headwaters to mouth (Deep Cr)	10020004	MT41D003_120	8.9	Mi	X	X		F	X	F	F
BIG HOLE	CORRAL CREEK from headwaters to mouth (Deep Cr)	10020004	MT41D003_130	5.1	Mi	X	X		X	X	X	X
BIG HOLE	LA MARCHE CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D003_150	7.2	Mi	X	X		X	X	X	X
BIG HOLE	FISHTRAP CREEK, confluence of West & Middle Fks to mouth (Big Hole R)	10020004	MT41D003_160	5.1	Mi	X	X		X	X	X	X
BIG HOLE	PATTENGAIL CREEK from headwaters to mouth (Wise R)	10020004	MT41D003_210	18.8	Mi	X	X		X	X	X	X
BIG HOLE	ELKHORN CREEK, Headwaters to mouth (Jacobson Cr-Wise R)	10020004	MT41D003_220	7.2	Mi	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
BIG HOLE	GOLD CREEK from headwaters to mouth (Wise R)	10020004	MT41D003_230	4.8	Mi	X	X		X	X	X	X
BIG HOLE	SCHULTZ CREEK from headwaters to mouth (Johnson Cr)	10020004	MT41D004_040	3.4	Mi	X	X		X	X	X	X
BIG HOLE	TIE CREEK from headwaters to mouth (North Fork Big Hole R)	10020004	MT41D004_060	15.2	Mi	X	X		X	X	X	X
BIG HOLE	TRAIL CREEK from Joseph Cr to mouth (North Fork Big Hole R)	10020004	MT41D004_080	10.1	Mi	X	X		X	X	X	X
BIG HOLE	JOSEPH CREEK, Headwaters to mouth (Trail Cr-North Fork Big Hole R)	10020004	MT41D004_090	6.8	Mi	X	X		X	X	X	X
BIG HOLE	ROCK CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_120	20.5	Mi	X	X		X	X	X	X
BIG HOLE	LITTLE LAKE CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_130	17.6	Mi	X	X		F	X	F	F
BIG HOLE	MINER CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_140	18.5	Mi	X	X		X	X	X	X
BIG HOLE	PINE CREEK from headwaters to mouth (Andrus Cr. - Governor Cr.)	10020004	MT41D004_160	6.6	Mi	X	X		X	X	X	X
BIG HOLE	FOX CREEK from headwaters to mouth (Governor Cr)	10020004	MT41D004_170	6.6	Mi	X	X		X	X	X	X
BIG HOLE	FRANCIS CREEK from headwaters to mouth (Steel Cr) T3S R15W	10020004	MT41D004_200	7.9	Mi	X	X		X	X	X	X
BIG HOLE	Mc VEY CREEK tributary to the Big Hole R T1S, R15W	10020004	MT41D004_210	8.6	Mi	X	X		X	X	X	X
BIG HOLE	SAWLOG CREEK tributary to Big Hole R	10020004	MT41D004_230	5	Mi	X	X		X	X	X	X
JEFFERSON	HALFWAY CREEK, Headwaters to mouth (Big Pipestone Cr-Jefferson R)	10020005	MT41G002_020	7.6	Mi	X	X		X	X	X	X
JEFFERSON	LITTLE PIPESTONE CREEK, Headwaters to mouth (Big Pipestone Cr)	10020005	MT41G002_040	16.2	Mi	X	X		X	X	X	X
JEFFERSON	NORWEGIAN CREEK from headwaters to mouth (Willow Cr Reservoir)	10020005	MT41G002_090	8.8	Mi	X	X		X	X	X	X
JEFFERSON	CHERRY CREEK from headwaters to mouth (Jefferson R)	10020005	MT41G002_110	8.9	Mi	X	X		X	X	X	X
JEFFERSON	DRY BOULDER CREEK from headwaters to mouth (Jefferson R)	10020005	MT41G002_120	14.7	Mi	X	X		X	X	X	X
JEFFERSON	CHARCOAL CREEK from headwaters to mouth (Pony Cr)	10020005	MT41G002_150	2.5	Mi	X	X		X	X	X	X
JEFFERSON	FITZ CREEK tributary to Little Whitetail Cr	10020005	MT41G002_160	4.8	Mi	X	X		X	X	X	X
BOULDER	NORTH FK LITTLE BOULDER RIVER, Headwaters to the mouth (Little Boulder)	10020006	MT41E002_090	11.6	Mi	X	X		X	X	X	F
BOULDER	McCARTHY CREEK from headwaters to the mouth (Boulder R)	10020006	MT41E002_110	6.7	Mi	X	X		X	X	X	X
BOULDER	DRY CREEK from headwaters to the mouth (Boulder R)	10020006	MT41E002_120	15.1	Mi	X	X		X	X	X	X
BOULDER	NURSERY CREEK from headwaters to mouth (Muskrat Cr-Boulder R)	10020006	MT41E002_130	1.1	Mi	X	X		F	F	F	F
MADISON	BLAINE SPRING CREEK from headwaters to mouth (Madison R)	10020007	MT41F004_010	10.5	Mi	X	X		X	X	X	X
MADISON	BEAVER CREEK from headwaters to the mouth (Quake Lake)	10020007	MT41F004_030	9.9	Mi	X	X		X	X	X	X
MADISON	ELK RIVER from headwaters to the mouth (West Fork Madison R)	10020007	MT41F004_110	14.3	Mi	X	X		X	F	X	X
MADISON	GAZELLE CREEK, Headwaters to the mouth (West Fork Madison R)	10020007	MT41F004_120	9.2	Mi	X	X		X	F	X	X
MADISON	ANTELOPE CREEK from headwaters to mouth (Cliff Lake)	10020007	MT41F004_140	9	Mi	X	X		X	F	X	X
MADISON	BUFORD CREEK Headwaters to the mouth (West Fork Madison R)	10020007	MT41F004_150	4	Mi	X	X		X	X	X	X
GALLATIN	GALLATIN RIVER from Spanish Cr to Montana State border	10020008	MT41H001_020	52	Mi	X	X		X	X	F	F
GALLATIN	SOUTH COTTONWOOD CREEK, Headwaters to the Middle Cr Assoc Ditch diversion	10020008	MT41H002_032	11.1	Mi	X	X		X	X	X	X
GALLATIN	EAST GALLATIN RIVER from headwaters to Bridger Cr	10020008	MT41H003_010	7	Mi	X	X		X	X	X	X
GALLATIN	EAST GALLATIN RIVER from Bridger Cr to Reese Cr	10020008	MT41H003_020	14.6	Mi	X	X		X	X	X	X
GALLATIN	EAST GALLATIN RIVER from Reese Cr to the mouth (Gallatin R)	10020008	MT41H003_030	18.9	Mi	X	X		X	X	X	X
GALLATIN	SOURDOUGH CREEK, Limestone Cr to the mouth (East Gallatin R)	10020008	MT41H003_040	4.7	Mi	X	X		X	X	X	X
GALLATIN	JACKSON CREEK from headwaters to the mouth (Rocky Cr)	10020008	MT41H003_050	7	Mi	X	X		X	X	X	X
GALLATIN	THOMPSON CREEK (or Thompson Spring), Headwaters to mouth (E Gallatin R)	10020008	MT41H003_090	7.4	Mi	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
GALLATIN	BRIDGER CREEK, Headwaters to the mouth (East Gallatin R)	10020008	MT41H003_110	18.4	Mi	X	X		X	X	X	X
GALLATIN	STONE CREEK from headwaters to the mouth (Bridger Cr)	10020008	MT41H003_120	5.6	Mi	X	X		X	X	X	X
GALLATIN	HYALITE CREEK from headwaters to the Natl. Forest Boundary	10020008	MT41H003_131	15	Mi	X	X		X	X	X	X
UPPER MISSOURI	MISSOURI RIVER from headwaters to Toston Dam	10030101	MT41I001_011	21	Mi	X	X		X	X	X	X
UPPER MISSOURI	BATTLE CREEK from headwaters to the mouth (Sixteenmile Cr - Missouri R)	10030101	MT41I002_020	20.4	Mi	X	X		X	X	X	X
UPPER MISSOURI	DRY CREEK from headwaters to the mouth (Missouri R)	10030101	MT41I002_080	16.7	Mi	X	X		X	X	X	X
UPPER MISSOURI	MAGPIE GULCH from the headwaters to the mouth (Canyon Ferry Res)	10030101	MT41I002_110	12.7	Mi	X	X		X	X	X	X
UPPER MISSOURI	SIXTEENMILE CREEK from Lost Cr to the mouth (Missouri R)	10030101	MT41I002_120	446.6	Mi	X	X		X	X	X	X
UPPER MISSOURI	WHITE GULCH from headwaters to the mouth (Canyon Ferry Res)	10030101	MT41I002_130	13.2	Mi	X	X		X	X	X	X
UPPER MISSOURI	CAVE GULCH from headwaters to mouth (Canyon Ferry Reservoir)	10030101	MT41I002_150	6.4	Mi	X	X		X	X	X	X
UPPER MISSOURI	BOULDER CREEK from 3 Miles above mouth to mouth (Confederate Gulch)	10030101	MT41I002_160	3	Mi	X	X		X	X	X	X
UPPER MISSOURI	BEAVER CREEK, Headwaters to Nelson	10030101	MT41I005_011	13.3	Mi	X	X		X	F	X	F
UPPER MISSOURI	BEAVER CREEK, Nelson to the mouth (Missouri R below Hauser Dam)	10030101	MT41I005_012	5.3	Mi	X	X		X	F	X	F
UPPER MISSOURI	TROUT CREEK from headwaters to the mouth (Hauser Lake)	10030101	MT41I005_020	20.1	Mi	X	X		X	X	X	X
UPPER MISSOURI	SHEEP CREEK from headwaters to mouth (Little Prickly Pear Cr)	10030101	MT41I005_070	5.9	Mi	X	X		X	X	X	X
UPPER MISSOURI	WOODSIDING GULCH Tributary to Little Prickly Pear Cr. T13N R4W Sec 33	10030101	MT41I005_080	2.2	Mi	X	X		X	X	X	X
UPPER MISSOURI	SEVENMILE CREEK from headwaters to the mouth (Tenmile Cr)	10030101	MT41I006_160	7.8	Mi	X	X		X	F	X	X
UPPER MISSOURI	NORTH FK WARM SPRINGS CREEK, Headwaters to mouth (Warmsprings Cr)	10030101	MT41I006_180	3.5	Mi	X	X		F	X	X	X
UPPER MISSOURI	JACKSON CREEK, Headwaters to mouth (McClellan Cr-Prickly Pear Cr)	10030101	MT41I006_190	2.5	Mi	X	X		X	X	X	X
UPPER MISSOURI	JENNIES FORK from headwaters to mouth (Silver Cr-Missouri R)	10030101	MT41I006_210	1.2	Mi	X	X		X	X	X	X
UPPER MISSOURI	SKELLY GULCH tributary of Greenhorn Cr-Sevenmile Cr T10N R5W Sec 2	10030101	MT41I006_220	7.7	Mi	X	X		X	X	X	X
UPPER MO-DEARBORN	MISSOURI RIVER from Little Prickly Pear Cr to Sheep Cr.	10030102	MT41Q001_021	21.3	Mi	X	X		X	F	X	X
UPPER MO-DEARBORN	BOX ELDER CREEK from Spring Cr to mouth (Missouri R)	10030102	MT41Q002_050	15.9	Mi	X		X	X	X	X	X
UPPER MO-DEARBORN	SOUTH FORK STICKNEY CREEK, Headwaters to the mouth (Stickney Cr-Missouri R)	10030102	MT41Q002_070	14.1	Mi	X	X		X	X	X	X
UPPER MO-DEARBORN	MIDDLE FORK OF THE DEARBORN RIVER, Headwaters to the mouth (Dearborn R)	10030102	MT41Q003_020	13.5	Mi	X	X		X	X	F	F
UPPER MO-DEARBORN	SOUTH FORK OF THE DEARBORN RIVER, Headwaters to the mouth (Dearborn R)	10030102	MT41Q003_030	15.8	Mi	X	X		X		X	X
UPPER MO-DEARBORN	FLAT CREEK from Henry Cr to the mouth (Dearborn R)	10030102	MT41Q003_040	15.5	Mi	X	X		F	X	X	X
SMITH	HOUND CREEK from Spring Cr to the mouth (Smith R)	10030103	MT41J002_020	6.2	Mi	X	X		X	X	X	X
SMITH	BEAVER CREEK from headwaters to the mouth (Smith R)	10030103	MT41J002_040	19.6	Mi	X	X		X	X	X	X
SMITH	ELK CREEK from headwaters to Camas Cr	10030103	MT41J002_060	9.7	Mi	X	X		X	X	X	X
SMITH	THOMPSON GULCH from headwaters to the mouth (Smith R)	10030103	MT41J002_070	10.5	Mi	X	X		X	X	X	X
SMITH	NEWLAN CREEK from headwaters to Newlan Res.	10030103	MT41J002_082	13.8	Mi	X	X		X	X	X	X
SMITH	LITTLE CAMAS CREEK from headwaters to mouth (Camas Cr)	10030103	MT41J002_100	4	Mi	X	X		X	X	X	X
SMITH	MOOSE CREEK from headwaters to the mouth (Sheep Cr)	10030103	MT41J002_120	10.9	Mi	X	X		X	X	X	X
SUN	GIBSON RESERVOIR	10030104	MT41K004_010	1281.9	Ac	X	X		X	X	X	X
SUN	WILLOW CREEK RESERVOIR	10030104	MT41K004_020	1355.6	Ac	X	X		X	X	X	X
BELT	LITTLE BELT CREEK from the mouth three miles up stream	10030105	MT41U002_040	3	Mi	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
LOWER MISSOURI BASIN												
TWO MEDICINE	TWO MEDICINE RIVER from Birch Cr to the mouth (Marias R)	10030201	MT41M001_010	4.3	Mi	X	X		X	X	X	X
TWO MEDICINE	RAILROAD CREEK, Headwaters to the Blackfeet Reservation boundary	10030201	MT41M002_010	6.1	Mi	X	X		X	X	X	X
TWO MEDICINE	SOUTH FORK TWO MEDICINE RIVER, Headwaters to the Blackfeet Res.	10030201	MT41M002_030	17.3	Mi	X	X		X	X	X	X
TWO MEDICINE	SOUTH FORK BADGER CREEK, Headwaters to the mouth (Badger Cr)	10030201	MT41M002_050	10.9	Mi	X	X		X	X	X	X
TWO MEDICINE	SOUTH FORK BIRCH CREEK, Headwaters to the mouth (Swift Res)	10030201	MT41M002_070	9.6	Mi	X	X		X	X	X	X
TWO MEDICINE	BIRCH CREEK, Blacktail Cr to the mouth (Two Medicine R)	10030201	MT41M002_080	34.1	Mi	X	X		F	X	F	F
TWO MEDICINE	NORTH FK DUPUYER CREEK, Wilderness boundary to mouth (Dupuyer Cr)	10030201	MT41M002_090	3.4	Mi	X	X		X	X	X	X
TWO MEDICINE	SOUTH FK DUPUYER CREEK, Wilderness boundary to mouth (Dupuyer Cr)	10030201	MT41M002_100	4.6	Mi	X	X		X	X	X	X
TWO MEDICINE	DUPUYER CREEK from North & South Forks to the mouth (Birch Cr)	10030201	MT41M002_110	37.6	Mi	X	X		X	X	X	X
CUT BANK	OLD MAIDS COULEE from headwaters to the mouth (Cutbank Cr)	10030202	MT41L001_010	16.4	Mi	X	X		X	X	X	X
CUT BANK	CUT BANK CREEK, Blackfeet Res. boundary to the mouth (Marias R)	10030202	MT41L001_040	23.1	Mi	X	X		X	X	X	X
MARIAS	MARIAS RIVER, Tiber Reservoir to the Two Medicine R - Cut Bank Cr Confluence	10030203	MT41P001_010	60	Mi	X	X		X	X	F	F
MARIAS	DRY FORK MARIAS RIVER from Spring Cr to the mouth (Marias R)	10030203	MT41P002_010	24	Mi	X	X		X	X	X	X
MARIAS	DRY FORK MARIAS RIVER from headwaters to Spring Cr	10030203	MT41P002_020	31.3	Mi	X	X		X	X	X	X
MARIAS	GOVERNMENT CREEK,Headwaters to the mouth (Corral Cr - Cottonwood Cr)	10030203	MT41P002_040	17.4	Mi	X	X		X	X	X	X
MARIAS	TIBER RESERVOIR (Lake Elwell)	10030203	MT41P003_010	17500.1	Ac	X		X	X	X	F	F
MARIAS	LAKE FRANCES Northwest of Conrad, MT	10030203	MT41P003_020	5536	Ac	X		X	X	X	X	X
TETON	WILLOW CREEK from headwaters to the mouth (Deep Cr)	10030205	MT41O002_010	18.9	Mi	X	X		X	X	X	X
TETON	DEEP CREEK from Willow Cr to the mouth (Teton R)	10030205	MT41O002_020	9	Mi	X	X		X	X	X	X
TETON	BLACKLEAF CREEK from headwaters to the mouth (Muddy Cr)	10030205	MT41O002_040	27.1	Mi	X		X	X	X	X	X
TETON	TETON SPRING CREEK from the city of Choteau to mouth (Teton R)	10030205	MT41O002_060	4.5	Mi	X	X		X	X	X	X
TETON	TETON SPRING CREEK from headwaters to city of Choteau	10030205	MT41O002_070	8.5	Mi	X	X		X	X	X	X
TETON	CLARK FORK OF MUDDY CREEK, Headwaters to mouth (Muddy Cr)	10030205	MT41O002_080	7.7	Mi	X	X		X	X	X	X
TETON	BYNUM RESERVOIR	10030205	MT41O003_010	4120	Ac	X		X	X	X	X	X
TETON	EUREKA RESERVOIR	10030205	MT41O003_020	400.3	Ac	X		X	X	X	X	X
BULLWHACKER-DOG	BULLWHACKER CREEK Headwaters to the mouth (Missouri R)	10040101	MT41T002_010	37.5	Mi	X		X		X		
BULLWHACKER-DOG	DOG CREEK from Cutbank Cr to the mouth (Missouri R)	10040101	MT41T002_020	25.3	Mi	X		X		X		
BULLWHACKER-DOG	EAGLE CREEK from Dog Cr to the mouth (Missouri R)	10040101	MT41T002_030	18	Mi	X		X		X		
BULLWHACKER-DOG	EAGLE CREEK from headwaters to Dog Cr	10040101	MT41T002_040	20.1	Mi	X	X		X	X	X	X
ARROW	COFFEE CREEK from headwaters to the mouth (Arrow Cr)	10040102	MT41R001_010	37.8	Mi	X		X		X		
ARROW	ARROW CREEK from Surprise Cr to the mouth (Missouri R)	10040102	MT41R001_020	64.8	Mi	X		X		X		
JUDITH	JUDITH RIVER from Ross Fork to Big Spring Cr	10040103	MT41S001_020	15.9	Mi	X	X		X	X	X	X
JUDITH	WOLF CREEK from Dry Wolf Cr to the mouth (Judith R)	10040103	MT41S002_020	44.5	Mi	X		X		X		
JUDITH	SAGE CREEK from headwaters to mouth (Judith R)	10040103	MT41S002_050	63	Mi	X		X		X		
JUDITH	WILLOW CREEK from headwaters to mouth (Sage Cr - Judith R)	10040103	MT41S002_060	28.3	Mi	X		X		X		
JUDITH	ROSS FORK JUDITH RIVER from headwaters to mouth (Judith R)	10040103	MT41S002_070	51.3	Mi	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
JUDITH	CASINO CREEK, Headwaters to mouth (Big Spring Cr)	10040103	MT41S004_040	11.6	Mi	X	X		X	X	X	X
JUDITH	COTTONWOOD CREEK from headwaters to county road bridge in T14N R18E Sec18.	10040103	MT41S004_051	19	Mi	F	F		X	X	F	F
JUDITH	COTTONWOOD CREEK from road bridge T14N R18E Sec18 to mouth (Big Spring Cr)	10040103	MT41S004_052	13.3	Mi	X	X		X	X	X	X
FORT PECK RESERVOIR	ARMELLS CREEK, Deer Cr. to mouth at the Missouri R.	10040104	MT40E002_021	67.9	Mi	X		X		X		
FORT PECK RESERVOIR	TWO CALF CREEK, South Fork to the mouth (Missouri R)	10040104	MT40E002_030	11.2	Mi	X		X		X		
FORT PECK RESERVOIR	COW CREEK, Als Cr to the mouth (Missouri R)	10040104	MT40E002_040	31.5	Mi	X		X		X		
FORT PECK RESERVOIR	CK CREEK, Ruby Cr (Near Headwaters) to Fort Peck Reservoir	10040104	MT40E002_080	43.8	Mi	X		X		X		
FORT PECK RESERVOIR	SULLIVAN CREEK, tributary to Rock Cr near Landusky	10040104	MT40E002_110	0.7	Mi	X		X		X		
FORT PECK RESERVOIR	SOURDOUGH COULEE, A tributary to Armells Cr	10040104	MT40E002_120	15.1	Mi	X		X		X		
FORT PECK RESERVOIR	FARGO COULEE, Headwaters to mouth at Amells Cr	10040104	MT40E002_130	23.2	Mi	X		X		X		
FORT PECK RESERVOIR	TIMBER CREEK, Headwaters to the mouth (Big Dry Cr Arm of Fort Peck Res)	10040104	MT40E003_010	81	Mi	X		X		X		
UPPER MUSSELSHELL	NORTH FORK MUSSELSHELL RIVER, Headwaters to confluence with the South Fk	10040201	MT40A002_010	34.4	Mi	X	X		X	X	X	X
UPPER MUSSELSHELL	ANTELOPE CREEK, Headwaters to the mouth (Musselshell R)	10040201	MT40A002_020	31.2	Mi	X	X		X	X	X	X
UPPER MUSSELSHELL	TRAIL CREEK, Headwaters to mouth (North Fork Musselshell R)	10040201	MT40A002_030	9.3	Mi	X	X		X	X	X	X
UPPER MUSSELSHELL	MILL CREEK, Headwaters to mouth (North Fork Musselshell R)	10040201	MT40A002_040	4.8	Mi	X	X		X	X	X	X
UPPER MUSSELSHELL	MUD CREEK, Headwaters to the mouth (Musselshell R)	10040201	MT40A002_060	31.5	Mi	X		X		X		
UPPER MUSSELSHELL	FISH CREEK, Headwaters to the mouth (Musselshell R)	10040201	MT40A002_070	86.7	Mi	X		X		X		
UPPER MUSSELSHELL	HALF BREED CREEK, Headwaters to the mouth (Musselshell R)	10040201	MT40A002_090	16.6	Mi	X		X		X		
UPPER MUSSELSHELL	DEADMANS BASIN RESERVOIR T7N R18E Sec 22-27	10040201	MT40A005_010	1903	Ac	X	X		X	X	X	X
UPPER MUSSELSHELL	LEBO LAKE T6N R13E SEC 1	10040201	MT40A005_020	314.1	Ac	X	X		X	X	X	X
UPPER MUSSELSHELL	MARTINSDALE RESERVOIR T8N R12E	10040201	MT40A005_030	984.9	Ac	X	X		X	X	X	X
MIDDLE MUSSELSHELL	NORTH WILLOW CREEK, Headwaters to the mouth (Musselshell R)	10040202	MT40C002_010	105	Mi	X		X		X		
FLATWILLOW	SNOOSE CREEK, Headwaters to mouth (Yellow Water Cr) T13N R25E SEC 20,21,22	10040203	MT40B001_030	7.1	Mi	X		X		X		
BOX ELDER	McDONALD CREEK, North and South Forks to mouth (Box Elder Cr)	10040204	MT40B002_010	72.5	Mi	X		X		X		
BOX ELDER	CHIPPEWA CREEK, Headwaters to one-half mile downstream	10040204	MT40B002_040	0.5	Mi	X		X		X		
LOWER MUSSELSHELL	CALF CREEK, Headwaters to the mouth (Musselshell R)	10040205	MT40C004_010	64.3	Mi	X		X		X		
LOWER MUSSELSHELL	LODGEPOLE CREEK, North & Middle Fks confluence to the mouth (Musselshell)	10040205	MT40C004_020	27	Mi	X		X		X		
LOWER MUSSELSHELL	BLOOD CREEK, Headwaters to mouth (Musselshell R)	10040205	MT40C004_030	59	Mi	X		X		X		
MIDDLE MILK	MILK RIVER, Whitewater Cr to Beaver Cr	10050004	MT40J001_020	38.2	Mi	X		X	X	X	X	X
MIDDLE MILK	BEAVER CREEK, Beaver creek Reservoir to the mouth (Milk R)	10050004	MT40J002_010	22	Mi	X	X		X	X	X	X
MIDDLE MILK	BULLHOOK CREEK, Headwaters to the Mouth (Milk R)	10050004	MT40J002_020	23.2	Mi	X	X		X	X	X	X
MIDDLE MILK	LITTLE BOXELDER CREEK,Headwaters to the mouth (Milk R)	10050004	MT40J002_030	43.1	Mi	X	X		X	X	X	X
BIG SANDY	BIG SANDY CREEK, Lonesome Lake Coulee to the mouth (Milk R)	10050005	MT40H001_010	37.1	Mi	X		X	X	X	X	X
LODGE	LODGE CREEK, Canadian border to the mouth (Milk R)	10050007	MT40J003_010	73.4	Mi	X		X	X	X	X	X
PEOPLES	PEOPLES CREEK,Headwaters to the Fort Belknap Reservation Boundary.	10050009	MT40I001_020	47.7	Mi	X		X	X	X	X	X
PEOPLES	BIG HORN CREEK, Zortman Mine to Fort Belknap Reservation	10050009	MT40I001_030	0.8	Mi	X	X		X	X	X	X
COTTONWOOD	BLACK COULEE, Headwaters to the mouth (Cottonwood Cr)	10050010	MT40J005_010	18.9	Mi	X		X	X	X	X	X
COTTONWOOD	COTTONWOOD CREEK, Black Coulee to the mouth (Milk R)	10050010	MT40J005_020	54.1	Mi	X		X	X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
WHITEWATER	WHITEWATER CREEK, Canadian border to the mouth (Milk R)	10050011	MT40K001_010	61.7	Mi	X		X	X	X	X	X
LOWER MILK	CHERRY CREEK from headwaters to the mouth (Milk R)	10050012	MT40O002_010	38.3	Mi	X		X	X	X	X	X
LOWER MILK	BUGGY CREEK from headwaters to the mouth (Milk R)	10050012	MT40O002_020	41.8	Mi	X		X	X	X	X	X
LOWER MILK	BEAVER CREEK from headwaters to mouth at Willow Cr	10050012	MT40O002_040	14.7	Mi	X		X	X	X	X	X
FRENCHMAN	FRENCHMAN CREEK, Canadian border to the mouth (Milk R)	10050013	MT40L001_010	74.5	Mi	X		X	X	X	X	X
BEAVER	BEAVER CREEK, Headwaters to the Fort Belknap Reservation boundary	10050014	MT40M001_011	4.8	Mi	X	X		X	X	X	X
BEAVER	BEAVER CREEK, Fort Belknap Reservation boundary to Black Coulee	10050014	MT40M001_012	148.3	Mi	X	X		X	X	X	X
BEAVER	FLAT CREEK, Headwaters to mouth (Beaver Cr)	10050014	MT40M002_010	33.2	Mi	X	X		X	X	X	X
BEAVER	LARB CREEK, Headwaters to mouth (Beaver Cr)	10050014	MT40M002_020	73.8	Mi	X	X		X	X	X	X
ROCK	EAGLE CREEK,Headwaters to the mouth (Willow Cr)	10050015	MT40N001_010	16	Mi	X		X	X	X	X	X
REDWATER	EAST REDWATER CREEK from headwaters to mouth (Redwater R)	10060002	MT40P002_010	48.2	Mi	X		X		X		
REDWATER	PASTURE CREEK from headwaters to mouth at Redwater R	10060002	MT40P002_030	38.9	Mi	X		X		X		
POPLAR	POPLAR RIVER & MIDDLE FORK POPLAR RIVER, Canada to the Fort Peck Res.	10060003	MT40Q001_010	66.6	Mi	X	X		X	X	X	X
POPLAR	BUTTE CREEK, Headwaters to the mouth (Poplar R)	10060003	MT40Q002_010	36.6	Mi	X	X		X	X	X	X
POPLAR	EAST FORK POPLAR RIVER international border to the mouth (Poplar R)	10060003	MT40Q002_020	20.4	Mi	X	X		X	X	X	X
CHARLIE-LITTLE MUDDY	CHARLIE CREEK from East and Middle Charlie Cr to the mouth (Missouri R)	10060005	MT40S004_010	31.2	Mi	X		X		X		
CHARLIE-LITTLE MUDDY	HARDSCRABBLE CREEK from headwaters to mouth (Missouri R)	10060005	MT40S004_020	32.6	Mi	X		X		X		
BIG MUDDY	MEDICINE LAKE	10060006	MT40R003_010	8599	Ac	X		X		X		
BIG MUDDY	HOMESTEAD LAKE, near Medicine Lake	10060006	MT40R003_020	1280	Ac	F		X		X		
YELLOWSTONE BASIN												
YELLOWSTONE HEAD	YELLOWSTONE RIVER from the Montana border to Reese Cr.	10070001	MT43B001_010	14.5	Mi	F	F		X	F	X	X
YELLOWSTONE HEAD	BEAR CREEK, 1/2 mi below Jardine Mine to the mouth (Yellowstone R)	10070001	MT43B002_021	3.1	Mi	X	X		X	X	X	X
YELLOWSTONE HEAD	BEAR CREEK, Headwaters to 1/2 mi below the Jardine Mine	10070001	MT43B002_022	8	Mi	F	F		F	X	F	F
YELLOWSTONE HEAD	SODA BUTTE CREEK from headwaters to the McLaren Tailings.	10070001	MT43B002_032	1.1	Mi	F	F		X	F	X	X
UPPER YELLOWSTONE	OTTER CREEK from headwaters to 2 mi downstream of Highway 191 bridge	10070002	MT43B004_012	25.6	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	BIG TIMBER CREEK from headwaters to Swamp Cr.	10070002	MT43B004_022	25.7	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	LOWER DEER CREEK from headwaters to 4 miles above mouth	10070002	MT43B004_032	22.2	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	UPPER DEER CREEK from headwaters to 6.5 miles above the mouth	10070002	MT43B004_042	17.3	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	BILLMAN CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_050	13.2	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	TOM MINER CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_060	13.9	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	MILL CREEK, Absaroka-Beartooth Wilderness boundary to NF boundary	10070002	MT43B004_072	12	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	PINE CREEK, Absaroka-Beartooth Wilderness boundary to 1.6 miles above the mouth	10070002	MT43B004_082	3.3	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	BIG CREEK from end of the road to NF Boundary	10070002	MT43B004_112	3.1	Mi	F	F		X	X	X	X
UPPER YELLOWSTONE	MOL HERON CREEK, Yellowstone National Park boundary to mouth (Yellowstone R)	10070002	MT43B004_120	8.9	Mi	X	X		X	X	X	X
UPPER YELLOWSTONE	BOULDER RIVER from NF boundary to 5 mi above the mouth (Yellowstone R)	10070002	MT43B004_132	27.8	Mi	X	X		X	X	F	F
UPPER YELLOWSTONE	BOULDER RIVER from Box Canyon GS to NFBoundary	10070002	MT43B004_133	24.3	Mi	F	F		X	X	F	F
UPPER YELLOWSTONE	BOULDER RIVER from headwaters to Box Canyon Guard Station	10070002	MT43B004_134	8.2	Mi	F	F		X	F	F	F

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
UPPER YELLOWSTONE	SWEET GRASS CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_150	77.3	Mi	X	X		X	X	X	X
SHIELDS	POTTER CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_010	24.6	Mi	X	X		X	X	X	X
SHIELDS	ANTELOPE CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_020	10	Mi	X	X		X	X	X	X
SHIELDS	COTTONWOOD CREEK from headwaters to eight miles above the mouth	10070003	MT43A002_032	13.1	Mi	X	X		X	X	X	X
SHIELDS	ROCK CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_050	21.2	Mi	X	X		X	X	X	X
U. YELLOWSTONE-LB	YELLOWSTONE RIVER from Bridger Cr to Alkali Cr.	10070004	MT43F001_010	89.3	Mi	X	X		X	X	F	F
U. YELLOWSTONE-LB	DUCK CREEK from headwaters to the mouth (Yellowstone R)	10070004	MT43F002_010	12.5	Mi	X	X		X	X	X	X
U. YELLOWSTONE-LB	CANYON CREEK from headwaters to highway 532	10070004	MT43F002_022	11.7	Mi	X	X		X	X	X	X
U. YELLOWSTONE-LB	KEYSER CREEK from headwaters to the mouth (Yellowstone R)	10070004	MT43F002_030	22	Mi	X	X		X	X	X	X
U. YELLOWSTONE-LB	VALLEY CREEK from headwaters to the mouth (Yellowstone R)	10070004	MT43F002_040	13.7	Mi	X	X		X	X	X	X
STILLWATER	STILLWATER RIVER from the West Fork to the mouth (Yellowstone R)	10070005	MT43C001_020	35.9	Mi	X	X		X	X	F	F
STILLWATER	LODGEPOLE CREEK from headwaters to the mouth (Castle Cr)	10070005	MT43C002_010	5.9	Mi	X	X		X	X	X	X
STILLWATER	BAD CANYON CREEK from headwaters to the mouth (Stillwater R)	10070005	MT43C002_020	10.4	Mi	X	X		X	X	X	X
STILLWATER	CASTLE CREEK from headwaters to the mouth (West Fk Stillwater R)	10070005	MT43C002_030	10.5	Mi	X	X		X	X	X	X
STILLWATER	GROVE CREEK from headwaters to five miles above the mouth	10070005	MT43C002_042	6.9	Mi	X	X		X	X	X	X
STILLWATER	FISHTAIL CREEK from headwaters to the mouth (West Rosebud Cr)	10070005	MT43C002_050	13.9	Mi	X	X		X	X	X	X
STILLWATER	EAST ROSEBUD CREEK, A-B Wilderness boundary to mouth (Rosebud Cr)	10070005	MT43C002_060	19.9	Mi	X	X		X	X	X	X
STILLWATER	JOE HILL CREEK from headwaters to the mouth (Stillwater R)	10070005	MT43C002_070	11.4	Mi	X	X		X	X	X	X
STILLWATER	BUTCHER CREEK from headwaters to highway 78	10070005	MT43C002_082	2.2	Mi	X	X		X	X	X	X
STILLWATER	WEST ROSEBUD CREEK from headwaters to the mouth (Rosebud Cr)	10070005	MT43C002_090	33.2	Mi	X	X		X	X	X	X
STILLWATER	ROSEBUD CREEK from the East and West Branches to the mouth (Stillwater R)	10070005	MT43C002_100	3.8	Mi	X	X		X	X	X	X
STILLWATER	NYE CREEK from headwaters to the mouth (Stillwater R)	10070005	MT43C002_130	2.8	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	CLARKS FORK YELLOWSTONE RIVER, Montana border to mouth (Yellowstone R)	10070006	MT43D001_010	74.6	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	ELBOW CREEK from headwaters to the mouth (Clarks Fork)	10070006	MT43D002_010	32	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	BEAR CREEK from headwaters to the mouth (Clarks Fork)	10070006	MT43D002_020	18.2	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	BLUEWATER CREEK headwaters to nine miles above mouth	10070006	MT43D002_032	10	Mi	F	F		X	X	X	X
CLARKS FK YELLOWSTN	SPRING CREEK, headwaters to mouth (Clakrs Fk)	10070006	MT43D002_040	11.6	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	RED LODGE CREEK from headwaters to Cooney Reservoir	10070006	MT43D002_050	16.5	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	WEST RED LODGE CR, A-B Wilderness boundary to mouth (Red Lodge Cr)	10070006	MT43D002_080	12	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	WYOMING CREEK from the state line to the mouth (Rock Cr)	10070006	MT43D002_090	3.9	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	SILVERTIP CREEK from the state line to the mouth (Clarks Fork)	10070006	MT43D002_100	18.4	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	ROCK CREEK from state line to West Fork Rock Cr	10070006	MT43D002_132	16.5	Mi	F	F		X	F	F	F
CLARKS FK YELLOWSTN	COTTONWOOD CREEK from headwaters to the mouth (Clarks Fork)	10070006	MT43D002_140	16.8	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	SOUTH FORK BRIDGER CREEK tributary to Bridger Cr	10070006	MT43D002_180	7.8	Mi	X	X		X	X	X	X
CLARKS FK YELLOWSTN	COONEY RESERVOIR	10070006	MT43D003_010	815.4	Ac	X	X		X	X	X	X
CLARKS FK YELLOWSTN	BASIN CREEK LAKE T8S R19E SEC 7	10070006	MT43D003_100	8	Ac	X	X		X	X	X	X
CLARKS FK YELLOWSTN	BIG MOOSE LAKE T9S R16E SEC 33BC	10070006	MT43D003_110	15	Ac	X	X		X	X	X	X
CLARKS FK YELLOWSTN	BLACK CANYON LAKE T9S R18E SEC 5DB	10070006	MT43D003_120	82.3	Ac	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
U. YELLOWSTN-POMP P.	YELLOWSTONE RIVER between Huntley Div. Dam and the Big Horn R	10070007	MT43Q001_011	62	Mi	X		X	X	X	X	X
U. YELLOWSTN-POMP P.	FLY CREEK, Crow Indian Res. boundary to the mouth (Yellowstone R)	10070007	MT43Q002_010	53.9	Mi	X		X		X		
PRYOR	PRYOR CREEK, Crow Indian Res. Boundary to the mouth (Yellowstone R)	10070008	MT43E001_010	26.9	Mi	X		X		X		
LOWER BIGHORN	TULLOCK CREEK, Crow Indian Res. Boundary to the mouth (Bighorn R)	10080015	MT43R002_010	58.2	Mi	X	X		F	X	X	X
UPPER TONGUE	TONGUE RIVER from the Wyoming border to Tongue R Reservoir	10090101	MT42B001_010	4.7	Mi	X	X		X	X	F	F
UPPER TONGUE	TONGUE RIVER from Tongue R Dam to Hanging Woman Cr	10090101	MT42B001_020	34.5	Mi	X		X	X	X	F	F
UPPER TONGUE	HANGING WOMAN CREEK from the Wyoming border to Stroud Cr	10090101	MT42B002_032	28.7	Mi	X		X		X		
LOWER TONGUE	TONGUE RIVER Hanging Woman Cr to diversion dam just above Pumpkin Cr	10090102	MT42C001_012	147.9	Mi	X		X	X	X	F	X
LOWER TONGUE	OTTER CREEK from headwaters to the mouth (Tongue R)	10090102	MT42C002_020	103.6	Mi	X		X		X		
LOWER TONGUE	PUMPKIN CREEK from headwaters to the mouth (Tongue R)	10090102	MT42C002_060	171.9	Mi	X		X		X		
MIDDLE POWDER	POWDER RIVER mainstem from the border to the Little Powder R	10090207	MT42J001_010	76.2	Mi	X		X		X		
LITTLE POWDER	LITTLE POWDER RIVER from the border to the mouth (Powder R)	10090208	MT42I001_010	71.5	Mi	X		X		X		
LOWER POWDER	POWDER RIVER from Little Powder R and the mouthYellowstone R	10090209	MT42J003_010	144.3	Mi	X		X		X		
LOWER POWDER	STUMP CREEK, tributary to Powder R below Powderville	10090209	MT42J004_010	27.5	Mi	X		X		X		
MIZPAH	MIZPAH CREEK from headwaters to the mouth (Powder R)	10090210	MT42J005_010	149.8	Mi	F		F		X		
L YELLOWSTN-SUNDAY	YELLOWSTONE RIVER from the Cartersville Diversion Dam to the Powder R	10100001	MT42K001_010	87.9	Mi	X		X	X	X	F	F
L YELLOWSTN-SUNDAY	CUSTER CREEK from headwaters to the mouth (Yellowstone R)	10100001	MT42K002_010	43.6	Mi	X		X		X		
L YELLOWSTN-SUNDAY	HARRIS CREEK from headwaters to the mouth (Yellowstone R)	10100001	MT42K002_020	26.1	Mi	X		X		X		
L YELLOWSTN-SUNDAY	SUNDAY CREEK from the North and South Forks to the mouth (Yellowstone R)	10100001	MT42K002_030	15.2	Mi	X		X		X		
L YELLOWSTN-SUNDAY	MUSTER CREEK from headwaters to the mouth (Yellowstone R)	10100001	MT42K002_040	30.6	Mi	X		X		X		
L YELLOWSTN-SUNDAY	DEADMAN CREEK from headwaters to mouth (North Fork Sunday Cr)	10100001	MT42K002_060	16.7	Mi	X		X		X		
L YELLOWSTN-SUNDAY	STELLAR CREEK from headwaters to mouth (Little Porcupine Cr)	10100001	MT42K002_070	38.1	Mi	X		X		X		
L YELLOWSTN-SUNDAY	NORTH FORK SUNDAY CREEK, Custer/Rosebud Co. line to mainstem Sunday Cr.	10100001	MT42K002_080	33.4	Mi	X		X		X		
L YELLOWSTN-SUNDAY	SARPY CREEK, Crow Indian Reservation Boundary to the mouth (Yellowstone R)	10100001	MT42K002_090	87	Mi	X		X		X		
L YELLOWSTN-SUNDAY	EAST FORK SARPY CREEK from headwaters to the mouth (Sarpy Cr)	10100001	MT42K002_100	31.5	Mi	X		X		X		
L YELLOWSTN-SUNDAY	EAST FORK ARMELLS CREEK from Colstrip to the mouth (Armells Cr)	10100001	MT42K002_110	30.8	Mi	X		X		X		
L YELLOWSTN-SUNDAY	WEST FORK ARMELLS CREEK from headwaters to the mouth (Armells Cr)	10100001	MT42K002_120	31.7	Mi	X		X		X		
L YELLOWSTN-SUNDAY	LITTLE PORCUPINE CREEK, headwaters to mouth	10100001	MT42K002_160	108.4	Mi	X		X		X		
L YELLOWSTN-SUNDAY	EAST FORK ARMELLS CREEK from headwaters to Colstrip	10100001	MT42K002_170	21.5	Mi	X		X		X		
ROSEBUD	ROSEBUD CREEK from headwaters to the Northern Cheyennne Reservation	10100003	MT42A001_013	23	Mi	X		X		X		
LOWER YELLOWSTONE	YELLOWSTONE RIVER from Lower Yellowstone Diversion Dam to North Dakota	10100004	MT42M001_011	71.1	Mi	X		X		X	F	F
LOWER YELLOWSTONE	BENNIE PEER CREEK from North Dakota border to the mouth (Yellowstone R)	10100004	MT42M002_010	9.3	Mi	X		X		X		
LOWER YELLOWSTONE	FOURMILE CREEK from headwaters to the North Dakota border	10100004	MT42M002_020	23.5	Mi	X		X		X		
LOWER YELLOWSTONE	FIRST HAY CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_030	29.4	Mi	X		X		X		
LOWER YELLOWSTONE	LONETREE CREEK from North and South Forks to the mouth (Yellowstone R)	10100004	MT42M002_040	28.7	Mi	X		X		X		
LOWER YELLOWSTONE	FOX CREEK and NORTH FORK FOX CREEK, Headwaters to mouth (Yellowstone R)	10100004	MT42M002_050	69.1	Mi	X	X		X	X	X	X
LOWER YELLOWSTONE	O'BRIEN CREEK from the state line to the mouth (Yellowstone R)	10100004	MT42M002_060	13.1	Mi	X		X		X		
LOWER YELLOWSTONE	CRANE CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_070	21.5	Mi	X		X		X		

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
LOWER YELLOWSTONE	SMITH CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_080	41.5	Mi	X		X		X		
LOWER YELLOWSTONE	SHADEWELL CREEK from the state line to the mouth (Yellowstone R)	10100004	MT42M002_090	18.5	Mi	X		X		X		
LOWER YELLOWSTONE	COTTONWOOD CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_100	20.9	Mi	F		F		X		
LOWER YELLOWSTONE	BURNS CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_110	48.9	Mi	X		X		X		
LOWER YELLOWSTONE	MORGAN CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_120	18.6	Mi	X		X		X		
LOWER YELLOWSTONE	GLENDIVE CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_130	52.3	Mi	X		X		X		
LOWER YELLOWSTONE	CEDAR CREEK from 26 to 45 miles above the mouth.	10100004	MT42M002_142	19	Mi	F		F		X		
LOWER YELLOWSTONE	CEDAR CREEK from headwaters to 45 miles above the mouth.	10100004	MT42M002_143	15.9	Mi	F		F		X		
LOWER YELLOWSTONE	CABIN CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_150	96.8	Mi	X		X		X		
LOWER YELLOWSTONE	BRAKETT CREEK from headwaters to the mouth (Cherry Cr)	10100004	MT42M002_160	39.9	Mi	X		X		X		
LOWER YELLOWSTONE	CHERRY CREEK from headwaters to 20 miles above the mouth	10100004	MT42M002_172	43.4	Mi	X		X		X		
LOWER YELLOWSTONE	SEARS CREEK from headwaters to the mouth (Yellowstone R)	10100004	MT42M002_180	12.3	Mi	X		X		X		
O'FALLON	PENNEL CREEK from headwaters to the mouth (O'Fallon Cr)	10100005	MT42L001_010	21.5	Mi	X		X		X		
O'FALLON	SANDSTONE CREEK from headwaters to the mouth (O'Fallon Cr)	10100005	MT42L001_020	72.1	Mi	X		X		X		
O'FALLON	O'FALLON CREEK from the mouth (Yellowstone R) 20 miles upstream	10100005	MT42L001_031	20	Mi	X		X		X		
O'FALLON	O'FALLON CREEK from 20 miles above the mouth to 40 miles above the mouth	10100005	MT42L001_032	20	Mi	F		F		X		
O'FALLON	O'FALLON CREEK from headwaters to 40 miles above the mouth.	10100005	MT42L001_033	78.6	Mi	X		X		X		
UPPER LITTLE MISSOURI	LITTLE MISSOURI RIVER, Highway 323 bridge to the North Dakota Border	10110201	MT39F001_021	63	Mi	F		F		X		
UPPER LITTLE MISSOURI	LITTLE MISSOURI RIVER, Wyoming border to the Highway 323 bridge.	10110201	MT39F001_022	40	Mi	F		F		X		
COLUMBIA BASIN												
UPPER KOOTENAI	LIME CREEK from headwaters to mouth (Fortine Cr)	17010101	MT76D004_050	4.3	Mi	X	X		X	X	X	X
UPPER KOOTENAI	THERRIAULT CREEK from headwaters to the Tabacco R	17010101	MT76D004_070	9	Mi	X	X		X	X	X	X
FISHER	RAVEN CREEK, tributary to the Pleasant Valley Fisher R T26-27N, R29W,	17010102	MT76C001_030	3.1	Mi	X	X		X	X	X	X
YAAK	YAAK RIVER (or North Fork Yaak R) from Canadian border to East Fork confluence	17010103	MT76B001_020	4.2	Mi	X	X		X	X	X	X
YAAK	SEVENTEEN MILE CREEK from headwaters to mouth (Yaak R)	17010103	MT76B002_010	15.1	Mi	X	X		X	X	F	F
YAAK	LAP CREEK from headwaters to mouth (Yaak R)	17010103	MT76B002_020	4.8	Mi	X	X		X	X	X	X
YAAK	SPREAD CREEK from headwaters to mouth (Yaak R)	17010103	MT76B002_060	12.2	Mi	X	X		X	X	F	F
YAAK	PETE CREEK from headwaters to mouth (Yaak R)	17010103	MT76B002_070	10.1	Mi	X	X		X	X	F	F
YAAK	SOUTH FORK YAAK RIVER from headwaters to mouth (Yaak R)	17010103	MT76B002_080	11	Mi	X	X		X	X	X	X
YAAK	EAST FORK YAAK RIVER from headwaters to mouth (Yaak R)	17010103	MT76B002_100	13.9	Mi	X	X		X	X	F	F
UPPER CLARK FORK	STORM LAKE CREEK from headwaters to mouth (Warm Springs Cr)	17010201	MT76G002_040	11	Mi	X	X		X	X	F	F
UPPER CLARK FORK	MILL CREEK from headwaters to the section line between Sec 27 & 28, T4N, R11W	17010201	MT76G002_051	11.6	Mi	X	X		X	F	X	X
UPPER CLARK FORK	WILLOW CREEK from headwaters to T4N, R10W, Sec30 (DABC)	17010201	MT76G002_061	5.5	Mi	X	X		X	F	X	X
UPPER CLARK FORK	PETERSON CREEK from headwaters to Jack Cr	17010201	MT76G002_131	6.4	Mi	X	X		X	F	X	X
UPPER CLARK FORK	MONARCH CREEK from headwaters to the mouth (Ontario Cr)	17010201	MT76G004_060	4.5	Mi	X	X		X	F	X	F
UPPER CLARK FORK	SNOWSHOE CREEK from headwaters to the mouth (Little Blackfoot R)	17010201	MT76G004_080	10.7	Mi	X	X		X	F	F	F
UPPER CLARK FORK	THREEMILE CREEK, Headwaters to Quigley Ranch Res.	17010201	MT76G004_111	6	Mi	X	X		X	F	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
FLINT-ROCK	EAST FORK ROCK CREEK, East Fork Res to mouth (Middle Fork Rock Cr)	17010202	MT76E002_020	8.7	Mi	X	X		F	F	F	F
FLINT-ROCK	BREWSTER CREEK from East Fork to mouth (Rock Cr)	17010202	MT76E002_050	4.5	Mi	X	X		X	X	F	F
FLINT-ROCK	SOUTH FORK ANTELOPE CREEK Headwaters to mouth (Antelope Cr) T6N, R15W	17010202	MT76E002_060	2.8	Mi	X	X		X	X	X	X
FLINT-ROCK	QUARTZ GULCH from forks to mouth (Basin Gulch)	17010202	MT76E002_070	3	Mi	X	X		X	X	X	X
FLINT-ROCK	BASIN GULCH from headwaters to mouth (Quartz Gulch)	17010202	MT76E002_080	1.5	Mi	X	X		X	X	X	X
FLINT-ROCK	EUREKA GULCH, confluence of Quartz Gulch and Basin Gulch to mouth (Rock Cr)	17010202	MT76E002_090	0.6	Mi	X	X		X	X	X	X
FLINT-ROCK	SCOTCHMAN GULCH, Headwaters to mouth (Upper Willow Cr-Rock Cr)	17010202	MT76E002_100	7.1	Mi	X	X		X	F	F	F
FLINT-ROCK	SLUICE GULCH from headwaters to mouth (Rock Cr)	17010202	MT76E002_110	6.1	Mi	X	X		X	X	F	F
FLINT-ROCK	FLAT GULCH from headwaters to the mouth (Rock Cr)	17010202	MT76E002_120	2.9	Mi	X	X		X	F	F	F
FLINT-ROCK	SAWPIT GULCH (Sawmill Gulch) Headwaters to the mouth (Upper Willow Cr).	17010202	MT76E002_130	2.1	Mi	X	X		X	X	X	X
FLINT-ROCK	WILLIAMS GULCH from headwaters to the mouth (Rock Cr)	17010202	MT76E002_140	5.4	Mi	X	X		X	X	X	X
FLINT-ROCK	CORNISH GULCH from forks to mouth (Rock Cr)	17010202	MT76E002_150	2.9	Mi	X	X		X	X	X	X
FLINT-ROCK	MINERS GULCH, headwaters to Upper Willow Cr T8N, R15W	17010202	MT76E002_160	5.4	Mi	X	X		X	X	X	X
FLINT-ROCK	BARNES CREEK from headwaters to mouth (Flint Cr)	17010202	MT76E003_070	8.3	Mi	X	X		X	X	F	F
FLINT-ROCK	STEWART CREEK, Headwaters to mouth (So. Boulder Cr - Boulder Cr - Flint Cr)	17010202	MT76E003_080	0.8	Mi	X	X		X	X	X	X
FLINT-ROCK	SMART CREEK T9N, R13W	17010202	MT76E003_110	11.2	Mi	X	X		X	X	F	F
FLINT-ROCK	CAMP CREEK from headwaters to town of Philipsburg	17010202	MT76E003_130	1.8	Mi	X	X		F	X	F	F
FLINT-ROCK	TENMILE CREEK from headwaters to mouth (Bear Cr-Clark Fork R)	17010202	MT76E004_030	4.9	Mi	X	X		X	X	X	X
FLINT-ROCK	RATTLER GULCH headwaters to mouth (Clark Fork)	17010202	MT76E004_060	7.8	Mi	X	X		X	X	X	X
FLINT-ROCK	DEEP CREEK, tributary to Bear Cr which joins the Clark Fork at Bearmouth	17010202	MT76E004_070	5.4	Mi	X	X		X	X	X	X
BLACKFOOT	MARCUM CREEK from headwaters to mouth T14N R11W SEC 14	17010203	MT76F002_050	1.4	Mi	X	X		X	X	F	F
BLACKFOOT	SANDBAR CREEK from forks to mouth (Willow Cr)	17010203	MT76F002_060	1.6	Mi	X	X		X	X	F	F
BLACKFOOT	ARRASTRA CREEK from headwaters to mouth (Blackfoot R)	17010203	MT76F002_070	12.6	Mi	X	X		X	X	X	X
BLACKFOOT	JEFFERSON CREEK from headwaters to 1 mile above Madison Gulch	17010203	MT76F003_021	3.6	Mi	X	X		X	F	F	F
BLACKFOOT	BRAZIEL CREEK, 2.8 miles upstream from mouth (Nevada Cr) T12N R10W Sec 22	17010203	MT76F003_040	2.8	Mi	X	X		X	F	F	F
BLACKFOOT	MCELWAIN CREEK, 2 miles upstream from mouth (Nevada Cr) T13N R12W Sec 27-28	17010203	MT76F003_050	2	Mi	X	X		X	X	F	F
BLACKFOOT	MURRAY CREEK Headwaters to mouth (Douglas Cr) T12N R12W Sec 6	17010203	MT76F003_120	8.6	Mi	X	X		X	F	F	F
BLACKFOOT	WALES CREEK from reservoir outlet to the mouth (Blackfoot R)	17010203	MT76F004_050	2	Mi	X	X		X	X	F	F
BLACKFOOT	WARD CREEK from the headwaters to Browns Lake	17010203	MT76F004_060	9.8	Mi	X	X		X	X	X	X
BLACKFOOT	RICHMOND CREEK from headwaters to mouth (Lake Alva)	17010203	MT76F005_020	3.7	Mi	X	X		X	X	F	F
BLACKFOOT	DEER CREEK from headwaters to mouth (Seeley Lake)	17010203	MT76F005_030	10.3	Mi	X	X		X	X	F	F
BLACKFOOT	WEST FORK CLEARWATER RIVER, Headwaters to mouth (Clearwater R)	17010203	MT76F005_040	14.3	Mi	X	X		X	X	F	F
BLACKFOOT	BUCK CREEK from headwaters to mouth (Placid Cr-Clearwater R)	17010203	MT76F005_050	2.5	Mi	X	X		X	X	X	X
BLACKFOOT	WEST FORK ASHBY CREEK, Headwaters to the mouth (Ashby Cr)	17010203	MT76F006_020	3.1	Mi	X	X		X	F	F	F
BLACKFOOT	KENO CREEK from headwaters to the mouth (Elk Cr)	17010203	MT76F006_040	2.9	Mi	X	X		X	X	F	F
BLACKFOOT	EAST FORK ASHBY CREEK T13N R16W	17010203	MT76F006_050	3.9	Mi	X	X		X	X	F	F
BLACKFOOT	CAMAS CREEK from 1 mile above mouth to mouth (Union Cr)	17010203	MT76F006_060	1	Mi	X	X		X	F	F	F
BLACKFOOT	DAY GULCH Tributary to Elk Cr T12N R14W S-1	17010203	MT76F006_080	1.2	Mi	X	X		X	X	X	X

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Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
BLACKFOOT	WASHOE CREEK Headwater to mouth (Union Cr)	17010203	MT76F006_090	6.1	Mi	X	X		X	X	F	F
BLACKFOOT	NEVADA LAKE	17010203	MT76F007_020	352.6	Ac	X	X		X	X	F	F
BLACKFOOT	SALMON LAKE	17010203	MT76F007_030	613	Ac	X	X		F	X	F	F
MIDDLE CLARK FORK	CEDAR CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_020	16.9	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	LOST CREEK from headwaters to the mouth (Oregon Gulch)	17010204	MT76M002_030	7	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	OREGON GULCH from headwaters to the mouth (Cedar Cr)	17010204	MT76M002_040	10.9	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	SOUTH FORK FISH CREEK from headwaters to the mouth (Fish Cr)	17010204	MT76M002_070	15.6	Mi	X	X		X	X	F	F
MIDDLE CLARK FORK	CACHE CREEK from headwaters to the mouth (South Fork Fish Cr)	17010204	MT76M002_080	11.2	Mi	X	X		X	X	F	F
MIDDLE CLARK FORK	WEST FORK PETTY CREEK from headwaters to the mouth (Petty Cr)	17010204	MT76M002_100	7.4	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	DEEP CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_110	9.4	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	GRANT CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_130	18.3	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	MILL CREEK from headwaters to the mouth (Clark Fork R near Frenchtown)	17010204	MT76M002_140	13.4	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	NEMOTE CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_160	9.8	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	DRY CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_170	15.3	Mi	X	X		X	X	F	F
MIDDLE CLARK FORK	TWELVEMILE CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_020	13.4	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	SILVER CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_030	4.9	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	BIG CREEK from the East and Middle Forks to the mouth (ST. Regis R)	17010204	MT76M003_040	3.4	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	DEER CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_050	8.5	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	WARD CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_060	7.6	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	LITTLE JOE CREEK from North Fork to the mouth (ST. Regis R)	17010204	MT76M003_070	3.1	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	NORTH FORK LITTLE JOE CREEK, Headwaters to the mouth (Little Joe Cr)	17010204	MT76M003_080	10.7	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	STONY CREEK from headwaters to the mouth (Ninemile Cr)	17010204	MT76M004_020	7.1	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	McCORMICK CREEK from headwaters to Little McCormick Cr.	17010204	MT76M004_032	5.8	Mi	F	F		X	X	X	X
MIDDLE CLARK FORK	JOSEPHINE CREEK from headwaters to the mouth (Ninemile Cr)	17010204	MT76M004_040	6	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	BIG BLUE CREEK from headwaters to the mouth (Ninemile Cr)	17010204	MT76M004_050	4.5	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	CEDAR CREEK from headwaters to the mouth (Ninemile Cr)	17010204	MT76M004_060	4.6	Mi	X	X		X	X	X	X
MIDDLE CLARK FORK	LITTLE MCCORMICK CREEK from headwaters to mouth (McCormick Cr)	17010204	MT76M004_080	3.6	Mi	X	X		X	X	X	X
BITTERROOT	EAST FORK BITTERROOT RIVER, A-P Wilderness boundary to the Bitterroot R	17010205	MT76H002_010	29.9	Mi	F	F		X	F	F	F
BITTERROOT	REIMEL CREEK from headwaters to the mouth (East Fork Bitterroot R)	17010205	MT76H002_020	7.4	Mi	X	X		X	X	X	X
BITTERROOT	MEADOW CREEK from headwaters to the mouth (East Fork Bitterroot R)	17010205	MT76H002_030	9.7	Mi	X	X		X	X	F	F
BITTERROOT	MARTIN CREEK from headwaters to the mouth (Moose Cr)	17010205	MT76H002_050	11.7	Mi	X	X		X	X	F	F
BITTERROOT	BUCK CREEK tributary to East Fork Bitterroot T2N, R16W	17010205	MT76H002_060	3.1	Mi	X	X		X	X	X	X
BITTERROOT	NEZ PERCE FORK from headwaters to the mouth (West Fork Bitterroot R)	17010205	MT76H003_020	14.7	Mi	X	X		X	X	F	F
BITTERROOT	DEER CREEK from headwaters to the mouth (West Fork Bitterroot R)	17010205	MT76H003_030	12.5	Mi	X	X		X	X	F	F
BITTERROOT	DITCH CREEK tributary to West Fork Bitterroot. T1S, R22W, S14	17010205	MT76H003_060	2.7	Mi	X	X		X	X	X	X
BITTERROOT	BASS CREEK, Selway-Bitterroot Wilderness boundary to mouth (Bitterroot R)	17010205	MT76H004_010	5.3	Mi	X	X		X	X	F	F
BITTERROOT	ROARING LION CREEK, Selway-Bitterroot Wilderness boundary to the mouth	17010205	MT76H004_060	6.2	Mi	X	X		X	X	F	F
BITTERROOT	WILLOW CREEK from headwaters to the mouth (Bitterroot R)	17010205	MT76H004_110	16.3	Mi	X	X		X	X	F	F

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WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
BITTERROOT	MILLER CREEK from headwaters to the mouth (Bitterroot R)	17010205	MT76H004_130	16.8	Mi	X	X		X	X	X	X
BITTERROOT	LICK CREEK Headwaters to mouth (Bitterroot R)	17010205	MT76H004_170	6.2	Mi	X	X		X	X	F	F
BITTERROOT	MUDDY SPRING CREEK Tributary to Gold Cr - Burnt Fk of Bitterroot T7N, R19W, S2	17010205	MT76H004_180	2	Mi	X	X		X	X	X	X
BITTERROOT	N BURNT FORK CREEK, from Burnt Fk Bitterroot R to Bitterroot R	17010205	MT76H004_200	10.4	Mi	X	X		X	X	X	X
BITTERROOT	GRANITE CREEK from headwaters to the mouth (Lolo Cr)	17010205	MT76H005_030	8.5	Mi	X	X		X	X	F	F
BITTERROOT	EAST FORK LOLO CREEK from headwaters to the mouth (Lolo Cr)	17010205	MT76H005_040	7.4	Mi	X	X		X	X	X	X
BITTERROOT	WEST FORK LOLO CREEK from headwaters to the mouth (Lolo Cr)	17010205	MT76H005_050	6.8	Mi	X	X		X	X	X	X
BITTERROOT	LOST PARK CREEK Tributary to East Fork (Lolo Cr)	17010205	MT76H005_060	5	Mi	X	X		X	X	X	X
MIDDLE FORK FLATHEAD	SKYLAND CREEK from headwaters to mouth (Bear Cr)	17010207	MT76I002_020	5.5	Mi	X	X		X	X	F	F
MIDDLE FORK FLATHEAD	CHALLENGE CREEK from headwaters to mouth (Granite Cr)	17010207	MT76I002_040	4.3	Mi	F	F		X	F	F	F
FLATHEAD LAKE	ASHLEY CREEK from Ashley Lake to Smith Lake	17010208	MT76O002_010	14.8	Mi	X	X		X	X	X	X
FLATHEAD LAKE	ASHLEY CREEK from bridge crossing on Kalispell airport road to the Flathead R	17010208	MT76O002_030	11.8	Mi	X	X			X	F	F
FLATHEAD LAKE	SPRING CREEK from headwaters to mouth (Ashley Cr)	17010208	MT76O002_040	4.5	Mi	X	X		X	X	X	X
SOUTH FORK FLATHEAD	HUNGRY HORSE RESERVOIR	17010209	MT76J002_010	21999	Ac	F	F		X	F	F	F
SOUTH FORK FLATHEAD	SULLIVAN CREEK from headwaters to mouth (Hungry Horse Res)	17010209	MT76J003_010	15.3	Mi	X	X		X	F	F	F
SOUTH FORK FLATHEAD	HUNGRY HORSE CREEK, Headwaters to mouth at Hungry Horse Res	17010209	MT76J003_060	6.1	Mi	F	F		X	F	F	F
STILLWATER	LOGAN CREEK above Tally Lake	17010210	MT76P001_030	19.2	Mi	X	X		X	X	F	F
STILLWATER	SHEPPARD CREEK, Headwaters to mouth (Griffin Cr - Logan Cr - Talley Lake)	17010210	MT76P001_050	14.4	Mi	X	X		X	F	F	F
STILLWATER	HAND CREEK, headwaters to mouth (Griffin Cr)	17010210	MT76P001_060	5.3	Mi	X	X		X	X	X	X
SWAN	LION CREEK from headwaters to mouth (Swan R)	17010211	MT76K003_050	14.6	Mi	F	F		X	F	F	F
SWAN	SQUEEZER CREEK from headwaters to mouth (Goat Cr-Swan R)	17010211	MT76K003_070	9	Mi	F	F		X	F	F	F
LOWER FLATHEAD	FLATHEAD RIVER, Flathead Reservation boundary to the mouth (Clark Fork R)	17010212	MT76L001_010	4.6	Mi	X	X		X	X	F	F
LOWER FLATHEAD	LITTLE BITTERROOT RIVER, Hubbart Res to the Flathead Reservation Boundary	17010212	MT76L002_060	4.9	Mi	X	X		X	X	X	X
LOWER FLATHEAD	SULLIVAN CREEK from headwaters to the Flathead Reservation	17010212	MT76L002_070	3.8	Mi	X	X		X	X	X	X
LOWER CLARK FORK	CLARK FORK RIVER between Cabinet Gorge Reservoir and Noxon Dam	17010213	MT76N001_020	2.8	Mi	X	X		F	X	F	F
LOWER CLARK FORK	LYNCH CREEK from headwaters to the mouth (Clark Fork R)	17010213	MT76N003_010	13.7	Mi	X	X		X	X	X	X
LOWER CLARK FORK	BEAVER CREEK from headwaters to the mouth (Noxon Reservoir)	17010213	MT76N003_030	23.9	Mi	X	X		X	X	F	F
LOWER CLARK FORK	CLEAR CREEK from headwaters to the mouth (Prospect Cr)	17010213	MT76N003_050	13.7	Mi	X	X		X	X	X	X
LOWER CLARK FORK	DRY CREEK from headwaters to the mouth (Prospect Cr)	17010213	MT76N003_070	4.2	Mi	X	X		X	X	X	X
LOWER CLARK FORK	WHITE PINE CREEK from headwaters to the mouth (Beaver Cr)	17010213	MT76N003_120	11.9	Mi	X	X		X	X	F	F
LOWER CLARK FORK	SWAMP CREEK from below West Fork Swamp Cr to Clark Fork R T20N R27W	17010213	MT76N003_160	5	Mi	X	X		F	X	F	F
LOWER CLARK FORK	HENRY CREEK Headwaters to confluence with Clark Fork R T20N, R25W	17010213	MT76N003_170	6.7	Mi	X	X		X	X	X	X
LOWER CLARK FORK	DRY CREEK Headwaters to the confluence with the Bull R T28N, R33W	17010213	MT76N003_180	3.5	Mi	X	X		X	X	X	X
LOWER CLARK FORK	FISHTRAP CREEK from headwaters to the mouth (Thompson R)	17010213	MT76N005_010	19.8	Mi	X	X		X	X	F	F
LOWER CLARK FORK	WEST FORK FISHTRAP CREEK from headwaters to the mouth (Fishtrap Cr)	17010213	MT76N005_020	7.7	Mi	X	X		X	X	X	X
LOWER CLARK FORK	McGREGOR CREEK from McGregor Lale to the mouth (Thompson R)	17010213	MT76N005_030	6.7	Mi	X	X		X	X	F	F
LOWER CLARK FORK	LITTLE THOMPSON RIVER from headwaters to the mouth (Thompson R)	17010213	MT76N005_040	20.3	Mi	X	X		F	X	F	F
LOWER CLARK FORK	WEST FORK THOMPSON RIVER from headwaters to the mouth (Thompson R)	17010213	MT76N005_050	8.4	Mi	X	X		F	X	F	F

USE SUPPORT: F = FULLY SUPPORTING X = NOT ASSESSED (Insufficient Credible Data)

Table 3 - E. Waters to be Monitored and Reassessed (Lacking Sufficient Credible Data)

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
LOWER CLARK FORK	LAZIER CREEK Tributary to the Thompson R	17010213	MT76N005_060	7.4	Mi	X	X		X	X	X	X
LOWER CLARK FORK	MC GINNIS CREEK from headwaters to confluence with Little Thompson R	17010213	MT76N005_070	5.1	Mi	X	X		X	X	X	X

USE SUPPORT: F = FULLY SUPPORTING X = NOT ASSESSED (Insufficient Credible Data)

Other Waters Identified for Monitoring and Assessment

The waters identified in Table 3-E appeared on previous 303(d) lists but are proposed for removal from the 2000 List because there is a lack of sufficient credible data to determine their present use support. In accordance with the 1997 state water quality law amendments, they are slated for monitoring and reassessment as soon as possible. During the current assessment cycle DEQ has identified other waters for which there is some indication (public comment, information suggesting possible impairment which is not sufficient to support a use determination, land use changes in watersheds previously found to be fully supporting, etc.) that they should be examined to assess their water quality. DEQ intends to monitor and assess these waters, listed in Table 3-F below, when the necessary work can be done in conjunction with other workload accomplishment.

Table 3-F. Other Waters Identified for Monitoring and Assessment

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Unit
UPPER MISSOURI BASIN					
Big Hole	LAKE AGNES T4S R10W SEC 04	10020004	MT41D005_080	98.8	Ac
Madison	HEBGEN LAKE	10020007	MT41F005_010	12667.9	Ac
Madison	QUAKE LAKE	10020007	MT41F005_020	600	Ac
Gallatin	PORCUPINE CREEK Headwaters to mouth	10020008	MT41H005_070	9.1	Mi
Gallatin	HYALITE RESERVOIR	10020008	MT41H006_010	250	Ac
Upper Missouri	McCLELLAN CREEK headwaters to mouth	10030101	MT41I006_200	11.8	Mi
LOWER MISSOURI BASIN					
Willow	WILLOW CREEK, headwaters to mouth (Tiber Res)	10030204	MT41P004_010	71.9	Mi
Teton	MUDDY CREEK, headwaters to mouth	10030205	MT41O002_090	82.7	Mi
Judith	EAST FK BIG SPRING CR, headwaters to mouth	10040103	MT41S004_060	25.9	Mi
Little Dry	LITTLE DRY CREEK, headwaters to mouth	10040106	MT40D004_010	96.9	Mi
Flatwillow	YELLOW WATER CR, Headwaters to mouth	10040203	MT40B001_010	29.1	Mi
Box Elder	BOX ELDER CREEK, headwaters to mouth	10040204	MT40B002_001	94.1	Mi
Box Elder	WAR HORSE LAKE	10040204	MT40B004_010	1440	Ac
Box Elder	WILD HORSE LAKE	10040204	MT40B004_020	1600	Ac
Upper Milk	BREED CREEK, headwaters to Canada	10050002	MT40F002_010	21.3	Mi
Sage	SAGE CREEK, headwaters to Laird Cr	10050006	MT40G001_020	18.9	Mi
YELLOWSTONE BASIN					
Clarks Fk Yellowstone	LADY OF THE LAKE CR, headwaters to Fisher Cr.	10070006	MT43D002_160	1.7	Mi
Clarks Fk Yellowstone	ELPESTRINE LAKE T8S R16E Sec 35	10070006	MT43D003_130	10	Ac
Bighorn Lake	BIGHORN LAKE (Yellowtail Reservoir)	10080010	MT43P001_010	8245.1	Ac
Upper Tongue	SQUIRREL CREEK Crow Res boundary to mouth	10090101	MT42B002_010	15.1	Mi
Upper Tongue	DEER CR headwaters to mouth (Tongue R Res.)	10090101	MT42B002_020	14.8	Mi
Lower Tongue	COOK CREEK, Reservation boundary to mouth	10090102	MT42C002_010	17.5	Mi
Lower Tongue	BEAVER CREEK, headwaters to mouth (Tongue R)	10090102	MT42C002_030	30	Mi
Lower Tongue	FOSTER CREEK, headwaters to mouth (Tongue R)	10090102	MT42C002_040	40.1	Mi
Lower Tongue	LITTLE PUMPKIN CREEK, headwater to mouth	10090102	MT42C002_050	29.8	Mi
Lo. Yellowstone-Sarpy	SAND CREEK, headwaters to the mouth	10100001	MT42K002_050	35.8	Mi
Lo. Yellowstone-Sarpy	STARVED-TO-DEATH CR, headwaters to mouth	10100001	MT42K002_130	18.7	Mi

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Unit
Lo. Yellowstone-Sarpy	RESERVATION CREEK, headwaters to mouth	10100001	MT42K002_140	26.2	Mi
Lo. Yellowstone-Sarpy	SMITH CREEK, headwaters to mouth	10100001	MT42K002_150	13.4	Mi
Big Porcupine	BIG PORCUPINE CREEK, headwaters to mouth	10100002	MT42N001_010	106.9	Mi
Upper Little Missouri	WILLOW CREEK, N & S Fork Confluence to mouth	10110201	MT39F001_030	23.8	Mi
Boxelder	BUFFALO CREEK headwaters to mouth	10110202	MT39E001_010	30.7	Mi
Boxelder	CORRAL CREEK headwaters to mouth	10110202	MT39E001_020	24.5	Mi
Beaver	BEAVER CREEK, headwaters to N. Dakota border	10110204	MT39G001_010	120	Mi
COLUMBIA BASIN					
Upper Kootenai	LITTLE JACKSON CR, headwaters to mouth	17010101	MT76D002_120	2.6	Mi
Upper Kootenai	YOUNG CR DRAINAGE, headwaters to mouth	17010101	MT76D002_130	21.3	Mi
Upper Kootenai	DODGE CR DRAINAGE, headwaters to mouth	17010101	MT76D002_140	17	Mi
Upper Kootenai	REXFORD FACE CR, headwaters to mouth	17010101	MT76D002_150	2.5	Mi
Upper Kootenai	EAST BRANCH So. Fork Big Creek	17010101	MT76D002_160	7	Mi
Upper Kootenai	EAST FORK PIPE CREEK DRAINAGE	17010101	MT76D002_170	14.2	Mi
Upper Kootenai	DEEP CREEK, headwaters to mouth	17010101	MT76D004_080	15.4	Mi
Yaak	HOSKINS CREEK, headwaters to the mouth	17010103	MT76B002_030	3.7	Mi
Yaak	FOWLER CR, headwaters to mouth (S Fk Yaak R)	17010103	MT76B002_040	5.3	Mi
Yaak	ZULU CREEK, headwaters to mouth (S Fk Yaak R)	17010103	MT76B002_050	2.9	Mi
Yaak	MEADOW CR DRAINAGE, headwaters to mouth	17010103	MT76B002_110	13	Mi
Blackfoot	CLEARWATER RIVER	17010203	MT76F005_010	9.8	Mi
North Fk Flathead	TRAIL CREEK	17010206	MT76Q002_010	8.3	Mi
North Fk Flathead	CYCLONE CREEK	17010206	MT76Q002_090	8.5	Mi
Middle Fk Flathead	OLE CREEK	17010207	MT76I002_030	17.2	Mi
South Fk Flathead	EMERY CREEK	17010209	MT76J003_030	7.7	Mi
South Fk Flathead	MARGARET CREEK	17010209	MT76J003_040	4.8	Mi
South Fk Flathead	TIGER CREEK	17010209	MT76J003_070	4	Mi
Stillwater	STILLWATER SLOUGH (City of Kalispell)	17010210	MT76P001_070	1.7	Mi
Stillwater	CHICKEN CREEK	17010210	MT76P003_050	2.3	Mi

Chapter 4
Public and Agency Consultation

Consultation Actions

Consultation During 303(d) Listing Process Development

Upon enactment of the 1997 Montana Water Quality Act amendments the Montana Environmental Quality Council created the Water Policy Subcommittee to provide legislative oversight for implementation of water quality monitoring, assessment, and improvement programs. The Subcommittee reviewed water quality monitoring policy issues and made a number of recommendations which provided direction for DEQ's development of the process and methods to be used in implementing the new legislative requirements for water quality assessment.

The 1997 amendments directed DEQ to establish a statewide TMDL advisory group, to consult with local conservation districts and watershed advisory groups and the public at large during the impaired waters list review, and to request information from the public that could affect the impaired waters priority ranking for TMDL planning (MCA 75-5-702 and 704). Since October of 1997, DEQ has consulted the statewide TMDL advisory group as it developed the process and methods for assessing the availability of sufficient credible data and making beneficial use support determinations. DEQ also obtained assistance and review from a wide array of state, regional, and national water quality assessment specialists during development of the assessment process (see Appendix A).

Consultation to Obtain Data and Information

In July 1998, DEQ sent out over 2,700 letters to local water groups, federal, state, and local agencies, private entities, and individuals with water quality interests asking them for water quality information. (See Appendix A discussion of assessment information collection process.) Responses provided a great deal of useful information, particularly water quality data (federal, state, and local agency water station records), riparian habitat (Riparian and Wetland Research Program), fisheries (Montana Rivers Information System and Montana Department of Fish, Wildlife and Parks), and detailed site-specific water quality studies (Conservation Districts, university, agency, and private studies). Often the responses received also provided references to additional information available from other sources.

As part of the sufficient credible data assessments and beneficial use determinations, additional data and insights were gathered by contacting water quality professionals, agency staff, landowners, and other members of the public. Information from Conservation District and watershed group ongoing monitoring was obtained as it became available.

Comment Period for the Draft List

Publication of the Draft 303(d) List initiated a comment period to obtain public review of the assessment process, proposed listing determinations, and prioritization of impaired waters for TMDL plan development. This comment period, initially planned to last for 60 days, began April 20, 2000 and was extended to September 5, 2000 in response to public request and DEQ workload considerations.

An additional opportunity to comment on significant changes to the proposed scheduling of impaired waters for TMDL plan development came during a supplemental 30-day comment period starting September 20, 2000 (see Part B of this document for details).

Legal notices placed in five newspapers around the state, news releases, and letters to groups and individuals known to be interested in water quality issues announced the beginning of the comment period and provided information relating to the date, time, and location of public meetings. Public information meetings were held in 17 cities around the state. These were advertised by news releases sent to nearly 80 news media organizations. The media responded by printing 21 stories announcing the comment period and meetings. Several radio stations also aired announcements.

The 17 meetings were designed to give the public the information needed for them to be able to respond with the type of data and comment that could influence the final DEQ assessments. At each meeting DEQ staff presentations reviewed the listing process and the proposed listing decisions for waters in the meeting area. These presentations were followed by question and answer periods, but most time was allocated to one-on-one conversations and information sharing between members of the public and the DEQ staff. The meetings were not hearings, so no formal comment was taken. DEQ staff did note relevant points that came up in discussions, but they tried to emphasize the idea that (because of the type of detailed and factual information needed to influence assessment decisions) comments should be submitted in writing. Comment forms were provided which could be turned in at the meetings or mailed to the DEQ.

Copies of the Draft 303(d) List were distributed to about 20 public libraries and to all Montana Conservation District offices where they were generally available for public review. To save on paper waste and printing costs, excerpted reports focussing on each of 14 sub-major basins were available at the public meetings or on request from DEQ. Individual assessment sheets summarizing the data and rationale underlying the determinations for specific waterbodies also were available on request.

DEQ also made extensive use of electronic media to publish the draft list, announce meetings, and obtain comment. The draft list was published on the DEQ web site and a joint effort by DEQ and Montana NRIS produced an interactive database which could be searched using several different parameters to produce either lists or maps displaying the Draft 303(d) List assessment and prioritization information. A dedicated e-mail site was established and publicized as a mechanism which could be used to provide comments or address questions to the DEQ staff.

Public Comment Review and Documentation

DEQ received comments from 60 individuals, organizations, and public agencies. The actual materials received included e-mails, comment sheets from the public meetings, letters varying in length from a few lines to many pages, published documents or material copied from such documents, and data from private or public agency files.

As each comment was received it was logged in, copied for the Record of Comments, reviewed briefly, and distributed to the DEQ staff best able to use and respond to the comment content. A system of tracking sheets was used to ensure that any information relating to a specific waterbody in a comment would trigger a review of the waterbody assessment. Each tracking sheet summarized the information received, how it was used, and what effect it had on the assessment. Comment tracking was also used to ensure that comments relating to general methodological issues received appropriate consideration. Completed tracking sheets have been attached to the comments on file in the Record of Comments.

Consultation Results

Specific Assessment Modifications

Questions, comments, and information relating to assessment determinations caused DEQ to review its draft decisions on more than 200 waterbody segments. For the most part the review confirmed the original assessment determinations. Either the material provided by the comment had already been considered in the original assessment, or new information supported the draft determinations. When information submitted did produce changes to the draft assessments, the modifications varied from significant listing changes to minor revisions to specific data elements:

1. Twenty-seven waterbodies were added to the list of threatened and impaired waters, four were added to the list of waters fully supporting all applicable uses, and one water was removed from the impaired list and added to the list of waters needing reassessment.
2. Use-support determinations were made for additional uses on 12 waterbodies already on the list of threatened and impaired waters.
3. Waterbody descriptive information was changed for about 15 waterbody segments. Some of these changes involved relocation of the segment ends or of the split point between two adjacent segments. Others related to corrections to segment size or to the listed state water quality class.
4. Cause or source of impairment information was revised for 38 waterbodies without altering their listing or use support status. In most cases these were revisions to cause and source subcategories for which the primary category had already been identified. For example, information relating to impairment by a specific metal may have been added to the record for a stream already listed as being impaired by other metal pollutants. The identification of significant new causes or sources of impairment most frequently occurred in conjunction with the listing and use-support determination changes identified in items 1 and 2 above.

One comment relating to assessment methodology produced some additional assessment revisions. This comment made the point that the methodology was too restrictive with regard to employment of "the overwhelming evidence test" approach to finding sufficient credible data. DEQ reviewed this section of its methodology and concluded that the comment was correct. The applicable section of the methodology was revised (See Appendix A), and all draft listing determinations which might be altered by the change were reviewed. This methodology revision and assessment review added six waterbodies to the threatened and impaired waters list and produced additional impaired use-support determinations for 12 other waters.

Issues of Policy and Procedure

Of the 60 formal comments received, 46 provided information or raised questions relating to the assessments of specific waterbodies. The remaining 14 comments usually addressed specific waterbody assessments, but they also raised questions or issues of overall policy or procedure. Three or four focused almost exclusively on such issues, raising a substantial number of separate policy or methodological points. The remainder of this chapter will be devoted to addressing those points. While the format employed might give the impression that, because a number of issues are identified as being raised by two or three commentors, there was widespread public concern regarding these issues. The reality was that a high degree of concern was expressed by a limited number of commentors.

Purpose and Effect of 303(d) Listing

It quickly became apparent during the comment review that there are a variety of misconceptions relating to what the 303(d) List is and what inclusion of a waterbody on the list of impaired and threatened waters means. Some comments conveyed the understanding that inclusion on the list indicates that a water has been thoroughly trashed and that listing confers a stigma about which local communities should be highly embarrassed. The opposing view, that a water **must** be placed on the impaired waters list if there is any deviation from essentially pristine conditions, was also expressed. A related misconception is that inclusion on the list conveys special protective status beyond that afforded under other provisions of federal and state law.

A water is placed on the list of impaired waters when it is determined that it does not fully support all the beneficial uses required for that water under the Montana Water-Use Classification System (an element of state water quality regulation). The failure to support a use must result from human activity – not natural conditions. A determination that a use is not fully supported must be based on a finding that state water quality standards established to protect the use are being violated. A severely impaired water may be listed for major violations of several standards relating to several beneficial uses. Another water may be listed for relatively limited exceedences of standards supporting only one use and may otherwise have excellent water quality. Severity of impairment is not an issue in listing once the standards violation threshold has been crossed. By the same token, if a water is meeting the applicable standards, it does not belong on the 303(d) List of impaired and threatened waters – no matter how it may have been evaluated based on other considerations or criteria.

This requirement that listing be based on violation of water quality standards reflects the purpose of the 303(d) list. The **only** purpose of the list defined in the Clean Water Act is to identify waters for which planning is needed to solve specific water quality impairments that are preventing those waters from supporting all applicable beneficial uses. If, as a result of human activity, a water needs such planning to meet water quality standards, it belongs on the 303(d) List. Otherwise, it does not. There is no provision in the Clean Water Act or in other law that gives listed waters any special protection that is not afforded to all waters.

Like many government programs the 303(d) listing process has undergone a number of changes and refinements since its inception. As has been discussed in some detail in Chapter 1 and 2 and Appendix A, the 1997 Montana Legislature initiated a major new phase to the program. It enacted amendments to state water quality law requiring DEQ to develop a system to ensure that waters would be included on the Montana 303(d) List only when there were "sufficient credible data" to support a determination that they were impaired. The legislature directed DEQ to implement this requirement in the 2000 303(d) List submission to EPA. It also specified that when sufficient credible data were not available to support the continued listing of waters from previous lists, those waters were not to be placed on the 303(d) list. Instead, they were to be specifically identified for monitoring and reassessment as soon as practicable to determine if they are, in fact, impaired.

In accordance with the legislative directive, DEQ has not included on the 2000 303(d) List previously listed waters for which there is not sufficient credible data to support current determinations. Those waters have been identified and are listed in Chapter 3, Table 3-E. The text material preceding that table explains the status of waters included on that table.

The Assessment Process Record

One point which was not adequately explained in the draft 303(d) document is that the 303(d) List document is not **the record** of the year 2000 assessments. It is a summary report of the assessment

process, decisions, and record. Apparently not understanding this fact, two or three commentors criticized DEQ for not having documented the bases for listing decisions. The full decision record for every waterbody segment identified in the 303(d) List document (whether impaired, fully supporting, or lacking sufficient credible data for assessment) consists of a hard-copy file containing a multi-page Assessment Record Sheet as well as any data, references, maps, etc. compiled in the course of the assessment. The Assessment Record Sheet lists the data and references that were used in the assessment and displays (using a series of tables and comment boxes) the bases for all sufficient credible data and beneficial use-support determination decisions (See Appendix A for a detailed discussion of the assessment methodology). No law, regulation, or court decision requires publication in the 303(d) List document of the entire assessment record, and even attempting to include condensed assessment records in the list document would result in a publication of several thousand pages.

The entire assessment record is archived and available for review at the office of the DEQ Monitoring and Data Management Bureau. A complete set of the draft Assessment Record Sheets has been available on CD since early in the public comment period. Record Sheets for all waters assessed during the 2000 review cycle may be viewed on the Montana Natural Resource Information System EnvironNet Database at http://nris.state.mt.us/wis/environet/. A CD containing the same records is available from the DEQ, Monitoring and Data Management Bureau.

Sufficient Credible Data

Three commentors expressed the view that both the provision of state law directing the DEQ "to remove any water body that lacks sufficient credible data to support its listing." [M.C.A. 75-5-702(6)] and DEQ's method of implementing that provision are inconsistent with provisions of the federal Clean Water Act and the associated federal regulations.

It is not the role of DEQ as an agency of Montana state government to refuse to implement a provision of state law or to express an opinion regarding whether or not state law is consistent with federal law. It also would obviously not make sense for DEQ to adopt procedures for implementing state law requirements that it expects would be found to be inadequate or improper if challenged on the basis of federal requirements. Staff of EPA's Region VIII have been intimately involved in the development of the DEQ's methodology for implementing the state requirements enacted by the 1997 legislature. At no time have they given any indication that the EPA sees either the state legislation or DEQ's methodology as being inconsistent with federal law. On the contrary, the EPA has asked DEQ staff to present the Montana methodology as an example to be emulated at national conferences and workshops on water quality assessment. Should EPA find that DEQ's use of this methodology in reaching its assessment determinations has violated federal requirements, it obviously has the authority to disapprove the final state 303(d) List.

The primary federal regulatory requirement which commentors contend the sufficient credible data legislation and its implementation violate comes from 40 C.F.R. § 130.7(b)(6)(iv). The language cited by commentors reads:

> *"each State must demonstrate good cause for not including a water or waters on the list. Good cause includes, but is not limited to, more recent or accurate data: more sophisticated water quality modeling; flaws in the original analysis that led to the water being listed in the categories in §130.7(b)(5); or changes in conditions, e.g., new control equipment, or elimination of discharges."*

There are three points worth noting with respect to the above language:

1. The larger context provided by the full language of 40 C.F.R. § 130.7(b)(5) and (6) reveals that, unlike other documentation which is always required, a demonstration of good cause is required only "Upon request by the Regional Administrator."

2. In many cases the above-listed causes do apply to waters not included on the 2000 303(d) List. For example, more recent or accurate data that are not sufficient to support a determination under current methods may still suggest flaws in the original analysis or changes in conditions.

3. The phrase "is not limited to" makes it clear that other bases may exist which constitute good cause for not including a water on the list. The legislative language of 75-5-702(6) M.C.A. is in essence a determination that the State of Montana deems that it has good cause to remove a water from the list when it determines that there is a lack of sufficient credible data to support the listing; **So long as** DEQ will monitor and assess any removed waterbody "during the next field season or as soon as possible thereafter to determine whether it is a threatened water body or an impaired water body." Waters removed from the list for lack of sufficient credible data don't just disappear; they are tracked and identified in Table 3-E of this document as requiring reassessment. In short, although a water may be "removed from the list" due to insufficient data, removal triggers new monitoring and assessment which will ensure that its eventual list status will be based on reliable information. EPA's involvement in development of the methodology to implement this two-stage process is at least suggestive that EPA sees this approach as being consistent with federal requirements.

In April of 1991 EPA's Assessment and Watershed Protection Division issued a document entitled "Guidance for Water Quality-based Decisions: The TMDL Process." Since then several internal EPA memoranda updating this document have been issued providing "guidance" on various TMDL issues including those relating to 303(d) listing procedures. Two or three commentors quoted phrases drawn from these EPA memoranda as support for contending that Montana's sufficient credible data assessment methodology conflicts with federal law and regulation. Apparently the commentors who cited these references were not aware of the disclaimer which appeared immediately after the title page of the April 1991 document – and which applies to all of these materials. This disclaimer reads:

> *"This document provides guidance only. It does not establish or affect legal rights or obligations. This guidance may be reviewed and revised periodically to reflect changes in EPA's strategy for the implementation of water quality-based controls, to include new information, or to clarify and update the text. Decisions in any particular case will be made by applying the Clean Water Act and implementing regulations."*

In short, these materials are not law, or regulation. They have received no public review nor have they been approved by the EPA administrator. They reflect the opinions and suggestions of the EPA staff who drafted and sent them.

DEQ staff also noted that a specific EPA memorandum which two comments criticized DEQ for not following was published April 28, 2000 – four weeks after publication of the Draft 2000 303(d) List. In spite of the fact that this "guidance" was issued after publication of the Draft 303(d) List, there is no significant conflict between the two. The memorandum urges EPA staff to ensure that states show good cause for removing waters from the list. The Montana methodology establishes good cause through employment of the sufficient credible data process. It documents the bases of decision for each water by means of an Assessment Record Sheet. In many cases waters removed from the list are precisely those for which little or no actual data supported their original listing, so the sufficient credible data assessment during the 2000 review cycle represents by far the most rigorous review of their water quality condition conducted to date. Finally, removed waters don't just disappear into a black hole. Under state law a **required** consequence of their removal is that they must be monitored as soon

possible so that meaningful determinations of their condition can be made based on current and reliable information.

Assessment of All State Waters

Two or three comments asserted that the 2000 303(d) List does not meet legal and regulatory requirements because it was not the result of a complete inventory of every river, stream, creek, lake, and wetland in the state. Exactly the same contention was raised in *Friends of the Wild Swan v. U.S. EPA* where the district court responded as follows:

> *"This argument is not persuasive because neither the CWA nor the EPA regulations make a state to assess [sic] all of its waterbodies before making a submission of WQLSs. Instead, states are required to develop lists of WQLSs based on "existing and readily available water quality-related data and information." See 40 C.F.R. § 130.7(b)(5). Montana has not identified WQLSs for every waterbody in the state because documented water quality data does not yet exist for every waterbody."*

The Clean Water Act regulations require states to list waters which existing and readily available data reveal to be threatened or impaired, but nowhere is there any requirement to inventory every waterbody in the state for possible impairment. The sheer impossibility of such a total inventory was recognized by those who drafted the Act and the associated regulations. They realized that an approach relying on data collected for a wealth of other purposes would serve to identify waters significantly impaired by human activity. In Montana, this approach has produced sufficient credible data to assess most of the larger lakes and mainstem rivers as well as many smaller waters where land use or other factors suggest a likelihood of impairment. Waters which have been reviewed but for which insufficient data has been found to make an assessment and waters for which not enough information has surfaced to even warrant a sufficient credible data evaluation, are mostly smaller lakes and small, often intermittent, streams located in areas of less intensive land use.

Threatened Waters Definition

Yet another question regarding consistency between Montana law and the federal Clean Water Act related to the Montana definition of the term "Threatened water body." One commentor expressed the objection that the definition in 75-5-103, MCA is inconsistent with the Clean Water Act because it excludes from consideration as a threatened waterbody any water subject to pollution prevention control actions required by a discharge permit, the nondegradation provisions or reasonable land, soil and water conservation practices. The commentor also asserts that (for the same reason) the definition violates the Montana Constitutional requirements for the protection and maintenance of a clean and healthful environment.

As has been noted previously, it is not the role of DEQ as an agency of Montana State Government to express an opinion regarding the legality of state law. DEQ does note that the comment received on this issue did not identify any waters left off of the 303(d) List as a result of this definition, and the DEQ staff who performed the assessments are not aware of any such waters. Waters which appear on the 303(d) List as having "threatened" support for one or more uses generally are listed based documented adverse pollution trends.

Listing Progress

One commentor asserted that, because the mileage of streams and acres of lakes assessed for the 2000 list didn't reveal a significant increase in miles and acres assessed over the 1998 list, no progress is

being made. DEQ emphatically disagrees with this point of view. To begin with, the miles and acres totals from the 1998 and 2000 lists are not comparable. The 1998 list included several hundred miles of waters under tribal jurisdiction which (having no authority to list them) the state did not include on the 2000 list. 2000 List waterbody size listings are based on computerized U.S.G.S. map database figures which are much more accurate than previous size estimates – and often differ significantly from them.

While the 1998 listings of many waterbodies covered only a portion of a stream (sometimes as little as a single mile of a 20-30 mile stream), the 2000 listings have expanded the area of these waterbodies assessed wherever sufficient information was available. DEQ staff initiated assessments for 29 waterbodies that had not been listed previously and found sufficient data to determine that one stream (12 miles) was fully supporting all uses and that 13 waters (181 stream miles and 100 wetland acres) are threatened or impaired. Finally, the staff identified 54 waters not listed in 1998 to be monitored as workloads allow (See Chapter 3, Table 3-F).

Substantial progress has been made over the last two years in how much is known and documented about the waters reviewed during development of the 2000 list. The total volume of information archived in the 1998 303(d) List record took up about 5 feet of shelf space. Often the total record supporting a waterbody listing consisted of a brief comment or check-marks in a few boxes on an assessment sheet. The total volume of information archived in the record supporting the 2000 303(d) List now takes up nearly 100 feet of shelf space, and a new database listing references used in the assessments contains more than 2000 records. For each water assessed a multi-page, Assessment Record Sheet documents the information and rationale underlying the listing determination, and a hard-copy file contains or references the data reviewed, making it possible to locate the data.

These extensive records will significantly facilitate the TMDL planning process by allowing additional monitoring and data collection efforts to focus on obtaining missing information or more intensively examining identified problems. With the impaired uses and the nature and extent of impairment more clearly identified than has been the case in the past, there will be a better focus to the entire TMDL planning effort. Even for those waters where the data were not sufficient to allow use-support determinations, the information available is documented and it will be possible to focus future monitoring efforts primarily on collecting the specific types of data need to make use-support determinations.

Technical Rigor

A number of comments addressed the issue of what techniques should be used and how much data should be required to make beneficial use-support determinations. Put another way, this is a question of what level of technical rigor is needed to make valid impairment determinations. Opinion is very diverse on this issue. Some commentors were adamant that virtually any statement in any document or any data (no matter how old or how obtained) indicating a possibility that a waterbody might be impaired should be sufficient basis for listing. Others were equally emphatic that no water should be listed for which there is not a full suite of new, professionally collected, statistically valid data for all relevant parameters proving beyond any doubt that the water in question is impaired to a specific degree by clearly identified causes and sources – with the relative contribution of each cause and source definitively established.

As discussed in Appendix A, the methodology developed by DEQ for assessing the availability of sufficient credible data and for using that data to make beneficial use-support determinations is the result of a balancing of a number of interacting factors. It is designed to serve the specific purpose of identifying waters for further planning. It considers that the 303(d) process is limited in scope and not intended to be a comprehensive solution for every environmental concern having any connection to

water quality. It recognizes that a “fully supporting” use-support determination may result in the water so designated receiving scant management attention for a period of several years, while an “impaired” or “insufficient data” determination will lead to additional monitoring and/or planning.

The methodology takes into account resources available and cost considerations. It recognizes that the more rigorous the methodology and the more information required to support each determination, the more each determination costs. The greater the rigor and cost of each determination, the fewer the number of waters that can be assessed at any given level of public funding. On the other hand, determinations based on “smoke and thin air” fail to fulfill the intended 303(d) List function of focusing planning and management efforts on waters that are being significantly impaired by human activity.

As discussed in Appendix A, the methodology adopted represents a balancing of these and other considerations which has been reviewed by and received the support of persons having water quality science and policy expertise and who work in state, federal, and local government; academia; and the private sector.

Use of Other Assessment Findings

A specific criticism of the listing methodology involved the view that, if an assessment performed by another agency indicates something "wrong" with a waterbody, then DEQ must automatically include it on the 303(d) List. For example, one comment, referring to U.S. Forest Service bull trout status reports which identified waters which historically contained bull trout but no longer support bull trout populations, repeatedly stated: “No further chemical or physical data are needed – if the fish aren’t there the stream is impaired." As has already been noted, the basis for 303(d) listing of a water is human caused violations of state water quality standards. There are a number of scenarios that could explain the current absence of bull trout from the cited streams which do not involve violations of water quality standards. The status reports indicate that hybridization and displacement are a major factor in bull trout declines – a factor which may or may not relate to water quality in a specific waterbody.

Again, the provisions of Section 303(d) of the Clean Water Act are not intended to address every conceivable environmental problem. If they were, there would be no need for the Endangered Species Act. Information contained in documents like the bull trout status reports is valuable for 303(d) assessment, but often the data indicate that factors other than habitat degradation are major factors in population losses. Species population assessments contained in endangered species status reports don’t automatically place a water on the 303(d) list. They do not trump the requirements for 303(d) listing. (In *Friends of the Wild Swan v. U.S. EPA* essentially the same issue was raised by the plaintiffs and the district court gave essentially the same response as that stated above.)

At least two commentors stated that, because EPA has approved previous Montana lists and because both the state and EPA have defended those lists in court, DEQ cannot now say that there is not sufficient credible data to list waters from those lists. EPA has approved and both EPA and DEQ have defended previous Montana lists (and the methods used to develop those lists) as complying with the requirements of law and regulation. The district court ruled for the agencies on this point. The court noted that the actions of an administrative agency in executing its administrative functions are “entitled to a presumption of regularity” and that “A reviewing court may reverse an agency’s decision only if it concludes the decision was arbitrary, capricious, or an abuse of discretion, or otherwise not in accordance with applicable law.” There was nothing in either the position taken by the agencies nor in the court’s ruling indicating that the 1998 listing process or the resulting list were perfect and could not be improved. In fact, since neither the Clean Water Act nor the associated regulations address minimum information standards for 303(d) listing, there was practically no basis that a court could use to review a state listing process.

The 1997 Montana Legislature was not so constrained. It responded to a public perception that waters were being added to the 303(d) List on the basis of little or no reliable information, and couldn't be removed without extensive evidence of full beneficial use support. The sufficient credible data requirements of 75-5-702 MCA. are the Legislature's remedy for this perceived problem. These provisions of state law not only set a new standard to be used for future listing decisions, they also contain a specific requirement for DEQ to review the existing list and "remove any water body that lacks sufficient credible data to support its listing." Montana State law is binding on the actions of the DEQ, and EPA's substantial involvement in the development of the process for implementing these requirements suggests that the EPA considers them to be consistent with the federal Clean Water Act.

Existing and Readily Available Data

Several comments asserted that DEQ's assessment process has failed to meet the requirements of 40 C.F.R. § 130.7(b)(4) that "Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list…." The basic points of some of these comments can be summarized as follows:

- We found data or documents that DEQ didn't find, therefore DEQ obviously failed to assemble and evaluate all existing and readily available data.
- DEQ failed to use information available in other agencies' environmental assessments (EAs) or Environmental Impact Statements (EISs).
- DEQ failed to use information available in other agencies' data bases or assessment reports.
- In speaking with several federal agency employees, I learned that DEQ did most, if not all, of their research online or on their computers.
- There are rooms full of data in federal agency offices that the DEQ failed to examine. I spoke with several federal agency employees who said that the DEQ did not spend time collecting or analyzing the significant amount of data collected at their offices.

DEQ recognizes that it did not find every last bit of data or item of information which has ever been produced relating to state water quality. There is no federal, state, or court-ordered requirement to even attempt such a quixotic endeavor. DEQ did make a major effort to unearth data from a wide array of sources (See Appendix A). This search produced over 2000 useable references containing anything from a brief comment relating to a single waterbody to hundreds of pages of data relating to many waterbodies. New material continues to arrive almost daily.

As was the case with the overall listing methodology, the methods employed by DEQ to obtain and assemble information represented an effort to find a balance appropriate for the purpose to be served. The information gathering strategies used were designed to obtain as much useable material as possible with the resources available for the effort. The process took into account the reality that the more intensively a particular source is mined the more of the additional material found tends to be redundant, outdated, or otherwise unusable. Intensively searching some sources means that other potential sources may not be searched at all. There also was a specific awareness that a primary effect of failing to find sufficient data to assess any particular waterbody would be to trigger a more specific data search and monitoring effort focused on that waterbody. DEQ has tried to be consistent in applying these concepts to specific data types and situations.

EISs and EAs can be useful sources of information. EISs and formal "high intensity" EAs developed to assess major proposed actions may contain data that are not reported elsewhere, and they usually do contain a bibliography or list of references that can identify sources of primary information. Usually state and federal requirements to distribute such documents to public and agency libraries are followed,

so searching the card files of these libraries represents a reasonable method for finding these EIS and formal EA publications. At the other end of the spectrum are the informal low intensity EAs prepared to cover small, local actions. Occasionally these will contain useful information, but often their discussion of water quality issues will be no more than a short summary statement indicating that a water is a certain condition or has certain problems. If they report specific data, it is often impossible to determine how, when, or by what methods the data were obtained. They seldom contain data that the agency has not recorded in other, more accessible, documents. Often they receive no distribution. A copy gets stuck in a project file, and no searchable record is made identifying either the EA content or where it can be found. Ransacking agency office files to extract the minimal information in such documents would not be an efficient use of DEQ staff resources.

Three commentors who criticized DEQ for not making more use of assessments done by other agencies specifically took DEQ to task for failing to use the Forest Service Inland West Water Initiative (IWWI) database. DEQ's experience with the IWWI database provides a good example of the problems which arise in attempting to use assessment systems of other agencies to serve 303(d) listing purposes.

Although DEQ staff had many contacts with Forest Service during the 303(d) assessment process, Forest Service personnel never mentioned the IWWI as a possible source of information. When its non-use was raised as an issue in public comment, DEQ contacted the Forest Service IWWI database coordinator. He stated that the IWWI inputs were compiled by field staff in late 1999 and the spring of 2000 and that the actual database was published in June of 2000. The basic IWWI information wasn't even assembled until after most of the 303(d) assessments were already completed, and publication of the IWWI followed that of the 303(d) List by more than two months. DEQ's non-use of the IWWI can hardly be attributed to an inadequate DEQ effort to identify and assemble available information! The example may be extreme, but its highlights the reality that by the time data collected by other agencies gets into published assessment systems it is often several years old while assessments based on current information frequently aren't yet available.

When (during the comment period) DEQ received the IWWI database it was examined to see what useful material it contained. It immediately became apparent that the IWWI contained only assessment findings and no actual water quality data. The first element of the database reviewed was labeled as identifying "Damaged Segments" of waterbodies on forest lands. This table listed segments believed to be damaged by one or more of seven types of impacts and also ranked them into one of three categories, "State 303(d) Agree," "State 303(d) Refute," and "Further Study" relating to the 1998 303(d) listings. One public comment was quite adamant that an "agree" rating was "compelling evidence that the segment should be listed" on the 2000 303(d) List. DEQ staff immediately noticed, however, that the Forest Service instructions for completing this table directed that an "agree" rating should be given whenever the Forest Service had "no known basis to refute" the 1998 303(d) listings. Phone calls to Forest staff who had filled out this table quickly confirmed that an "agree" rating often signified nothing more than that the Forest Service had no data proving that a 1998 303(d) listed water wasn't impaired.

DEQ staff next reviewed two other IWWI tables which appeared to be possible sources of useful information. These tables rated the "geomorphic integrity" and "water quality integrity" of watersheds on National Forest lands. They also contained fields indicating the quality of the information and the level of certainty of the integrity rankings. By searching these tables, DEQ identified waters where either the geomorphic or the water quality integrity had been ranked as significantly impaired based on good quality information and/or a high level of certainty. Some of the drainages that came through this screening process matched with segments already identified as impaired by DEQ based on sufficient credible data. Other drainages corresponded to stream segments for which DEQ had found credible data to be lacking. Again, phone calls were initiated to several forest hydrologists to find out what

information they had which DEQ had overlooked. An e-mail response from one of these individuals summed up the verbal responses from others. He noted:

> *The IWWI stuff is essentially a professional judgement "call" based on the knowledge of the hydro/soils/fishery people on the forest…. The idea of the effort was to get a broad overview of watershed condition throughout the west for large-scale planning efforts mainly dealing with water rights and budget allocation. It really doesn't have anything to do with the 303(d) list…. If you're going to accept IWWI as adequate, then you might as well not have data requirements [for the 303(d) process].*

After investing nearly 100 hours of staff time trying to extract useful information from the IWWI, the DEQ was forced to conclude that it contained essentially no useful material. This result is instructive. Assessments made by other entities for purposes entirely unrelated to 303(d) listing, may or may not provide information relevant to the listing process, but they will seldom provide "compelling evidence" that a listing determination must go a certain way, and they must be examined carefully and critically to determine what relevance they do have for 303(d) listing decisions.

The statement that "several federal agency employees" told a commentor "that DEQ did most, if not all, of their research online or on their computers" is interesting. While many federal agency employees were contacted during the course of DEQ's data collection and evaluation process, DEQ staff can't think of a single federal employee involved enough with the whole process to have a basis for making such a statement. DEQ certainly used electronic search tools and resources where they were available, but the volume of hard-copy publications and documents amassed and reviewed makes it clear that non-computerized sources received appropriate consideration.

DEQ readily acknowledges that there are rooms full of records in federal agency offices which DEQ did not attempt to search. Such rooms exist in almost any agency office, in academia, and in the private sector. DEQ has its own such rooms. Unfortunately, it is a rare office that has had the budget, the personnel, or the know-how to organize these rooms by establishing efficient filing systems, cataloging the stored records, and weeding out material as it becomes outdated. Office staff who know where the "bodies are buried" in an unorganized records storage room may be able to find what they need there, but for an outsider to attempt a comprehensive data search in such a setting is an exercise in futility. When DEQ staff identified a well-organized and cataloged records repository (such as the Montana Fish, Wildlife, and Parks library) that resource was used intensively. When employees of other agencies responded to DEQ's data requests with an indication that they had data available but that DEQ would have to "come and get it" some method for obtaining the data was almost always found. It is disturbing to be told in a public comment that unnamed federal employees, who evidently were aware of DEQ's requests and believed that their office records held relevant information, apparently couldn't even send an e-mail or make a phone call to inform DEQ of the availability of that material. DEQ is already gathering information for the next 303(d) update. Perhaps these employees will come forward in the future.

An indication of the effectiveness of DEQ's effort to collect existing information can be obtained by reviewing the information submitted during the public comment period. Roughly half of the comments received provided or referenced potential assessment information. The material varied from single sentences ("X Creek flows through my property and I can tell you that….") to collections of documents two or three inches thick. Some of this information did make a difference. As previously noted, 27 waters were added to either the 303(d) impaired listing or the full support listing, and additional support determinations were made for 12 waters. Most of these changes resulted from key pieces of information being submitted by individual water resource specialists who had personal knowledge of new or

unpublished information. Many of the published documents submitted either were already in the DEQ system or the information they contained had been obtained from some other document or source.

Formal comments were received from the Forest Service regional office, five national forests, two Fish, Wildlife and Parks staff, and two Department of Natural Resources and Conservation staff. Seven of these comments provided information. In each case the material provided was very specific, limited, data pertaining to particular waterbodies. None contained any indication that their offices had any significant sources of information available that DEQ had missed by not conducting an on-site records search. Informal contacts with staff of other public agencies and private offices have uniformly produced the response that, while the individual contacted might be able to come up with bits and pieces of information based on their personal knowledge, they were not aware of any trove of information which DEQ had failed to consider.

Other Issues

One comment asked when and how the requirements of the Endangered Species Act for consultation with the Fish and Wildlife Service on issues relating to endangered species protection would be addressed for the 2000 303(d) List. Consultation is the responsibility of the EPA. On July 3, 2000 the EPA's Region VIII office sent a copy of the Draft 2000 303(d) List to the Fish and Wildlife Service and solicited comments from the Service on that draft. Informal discussions involving the staffs of EPA, the Fish and Wildlife Service are ongoing. This consultation process obviously can't be completed until after the State of Montana submits its Final 2000 303(d) List to EPA.

One comment noted that EPA suspended the requirement for states to submit 303(d) Lists during the year 2000 and suggested that DEQ should simply hold the 2000 List rather than submit it for EPA approval. DEQ considered adopting this course of action, but decided to proceed for two reasons. The primary reason is that 303(d) List preparation is a task mandated under state as well as federal law. Suspension of the federal submission requirement does not negate the state mandate. To complete a list in compliance with state requirements and not submit it for EPA approval would leave the state with two different lists. Also, submitting this list now and obtaining its approval by EPA will put the state in a much better position to react to the many changes to the federal TMDL regulations which may or may not be implemented before the next federal list due date.

More than one commentor noted that one factor complicating efforts to develop a sound assessment methodology and produce accurate 303(d) determinations is that changes are needed in the Montana Water-Use Classification System and in a number of specific waterbody classifications. DEQ agrees that changes to both the classification system and to individual classifications are needed. However, the 303(d) listing process is only one of several state and federal programs tied to the classifications. To attempt to make modifications to the classification system within the context of 303(d) listing would be to have a rather small tail attempting to wag a very large dog.

One comment suggested that because the 2000 fire season will significantly alter conditions on many waterbodies in Montana it would be arbitrary to update the existing 1998 List until all the fire-related water quality impacts can be assessed. While the 2000 season fires will alter many stream assessments, that is not a reason to halt list updating. Waterbody conditions are always changing. To say that an existing list shouldn't be updated because change has invalidated some of the new list assessments ignores the point that even if the update contains information that is already outdated, at least it will be more current that the old list it replaces. DEQ expects that the year 2000 assessments for waters in fire areas will need to be revised as soon as possible. It is also well aware that it may be several years before conditions in burned areas will stabilize and sufficient new data can be collected to make meaningful revised use-support determinations.

APPENDIX A
Water Quality Assessment Process and Methods

Introduction

The assessment of streams, lakes and wetlands to identify "impaired" waters for inclusion on the 303(d) List is an important step in a process intended to ensure that all waterbodies in the state will have water quality adequate to support all of their intended beneficial uses. The process has been developed and shaped by legal mandates, water quality standards, the tools and techniques of water quality monitoring, the availability of information, and the funds and administrative resources that can be devoted to assessment efforts.

In overview, the main steps of this process in Montana are:

1. State waters are classified under a system that identifies the beneficial uses that each waterbody will be expected to support. State waters in Montana initially were classified in 1955 and the system has been substantially modified over the years.

2. State water quality standards identify the specific water quality conditions that must be met for a waterbody to support each beneficial use.

3. Many entities and organizations collect data (for many different reasons) which indicate the quality of waters and their compliance with the applicable water quality standards.

4. The Department of Environmental Quality (DEQ) searches out the available data and identifies waterbodies for which there are "sufficient credible data" to make valid and reliable determinations of beneficial use support.

5. When sufficient data are available for a waterbody, DEQ compares the data with water quality criteria and guidelines to make "beneficial use-support determinations." Waterbodies that do not fully support all uses designated under the standards are placed on the 303(d) List of impaired waters.

6. Waters on the 303(d) List are prioritized and scheduled for the development of plans to correct their impaired condition. (Additional data may be collected before planning starts to verify existing conditions or to further identify the causes and sources of impairment).

7. Plans are developed for waterbodies on the 303(d) List identifying actions that will be taken to improve water quality so that the waterbody can fully support the applicable beneficial uses.

8. Planned actions are implemented and monitoring is done to ensure that water quality improves at least as much as necessary for the waterbody to fully support its beneficial uses.

This appendix will focus on steps 4 and 5 from the above list discussing in detail the process and methods employed by Montana DEQ to accomplish these two steps. To provide background information for this detailed discussion of Steps 4 and 5, an overview will first be provided of Steps 1-3. Steps 6-8 are addressed either in other appendices of this document or in the state's 305(b) Report of statewide water quality.

Montana Water-Use Classification

Montana waterbodies are classified according to the present and future beneficial uses that they normally would be capable of supporting (75-5-301 MCA). The state Water-Use Classification System (ARM 17.30.604-629) identifies the following beneficial uses:

- Drinking, culinary use, and food processing
- Aquatic life support for fishes and associated aquatic life, waterfowl, and furbearers
- Bathing, swimming, recreation and aesthetics
- Agriculture water supply
- Industrial water supply

The current use classification of each waterbody in Montana was assigned on the basis of its actual or anticipated uses in the early 1970s**.** Waterbodies are classified primarily by: 1) the level of protection that they require; 2) the type of fisheries that they support (warm water or cold water) or; 3) their natural ability to support use for drinking water, agriculture etc. The use classification was designed for streams, so some of the uses designated by the classification system are not always applicable to lakes and wetlands. The designated beneficial uses for each class in the system are as follows:

A-CLOSED – Waters are suitable for drinking, culinary and food processing purposes after simple. Also suitable for swimming, recreation, and growth and propagation of fishes and associated aquatic life (although access restrictions to protect public health may limit actual use).

A-1 – Waters are suitable for drinking, culinary, and food processing purposes after conventional treatment for removal of naturally present impurities. Also suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

B-1 – Waters are suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

B-2 – Waters are suitable for drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

B-3 – Waters are suitable for drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

C-1 – Waters are suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

C-2 – Waters are suitable for bathing, swimming and recreation; growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply.

C-3 – Waters are suitable for bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl and furbearers. Naturally marginal for drinking, culinary, and food processing purposes, agriculture and industrial water supply.

I – (Impaired) The State of Montana has a goal to improve these waters to fully support the following uses: drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply**.**

A waterbody is considered to support its beneficial uses when it meets the water quality standards established to protect those uses. A waterbody is considered to be impaired when there is a violation of the water quality standards established to protect any of the applicable beneficial uses. In some cases the violation of a standard will result in the impairment of only a single use; in other situations the violation of one or more standards may result in the impairment of all uses for the applicable classification.

Water Quality Standards

Montana water quality standards include both use-specific components (ARM 17.30.621 - 629) and general provisions (ARM 17.30.635 - 646). Standards may be either numerical or narrative. The use-specific standards vary depending on the water-use classification, whereas the general provisions apply to all state waters. Narrative standards provide a minimum level of protection to state water and may be used to limit the discharge of pollutants, or the concentration of pollutants in state waters not covered under numerical standards (F.R. 36765).

Montana has established **"**numerical**"** water quality standards relating to:

- Chronic and acute factors affecting aquatic life (Circular WQB-7)
- Human health (Circular WQB-7)
- Fecal coliform levels (ARM 17.30.620-629).
- Changes in pH, turbidity, color, and temperature (ARM 17.30.620-637).

Some water quality standards can be specified in absolute, numerical terms, such as "acute aquatic life standards," or "chronic aquatic life standards" which limit the average concentration of a toxic over a period of time. Many others, however, are defined in terms of change from what would naturally exist, such as "no increase above naturally occurring condition" or "Induced variation of hydrogen ion concentration (pH) within the range of 6.5 to 8.5 must be less than 0.5 pH units."

Montana **"**narrative water quality standards**"** encompass two basic concepts:

- Activities which would result in nuisance aquatic life are prohibited (ARM 17.30.637)
- No increases are allowed above naturally occurring conditions of sediment, settleable solids, oils or floating solids, which are harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife (ARM 17.30.620-629).

DEQ interprets nuisance aquatic life as excessive biomass (e.g., alga growth) or the dominance of an undesirable species. "Naturally occurring" refers to conditions or materials present from over which man has no control, or from developed land where "reasonable" land, soil, and water conservation practices have been applied. Conditions resulting from reasonable operation of dams in existence July 1, 1971, are considered natural (75-5-306 MCA).

Section 17.30.602 (21) of the Montana Surface Water Quality Standards and Procedures defines “reasonable” land, soil, and water conservation practices as follows:

> *Reasonable land, soil, and water conservation practices” means methods, measures, or practices that protect present and reasonably anticipated beneficial uses. These practices include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution-producing activities.*

DEQ interprets "reasonably anticipated beneficial uses" to be all the uses designated for the stream’s classification.

Reasonable land, soil, and water conservation practices are not always accomplished by using best management practices (BMP's). BMP’s are land management practices that provide a degree of protection for water quality, but they may not be sufficient to achieve compliance with water quality standards and protect beneficial uses. Therefore, reasonable land, soil, and water conservation practices generally include MBPS, but additional conservation practices may be required to achieve compliance with water quality standards and restore beneficial uses.

Reference Condition

DEQ uses reference condition to determine if narrative water quality standards are being achieved. The term “Reference condition” is defined as the condition of a waterbody capable of supporting its present and future beneficial uses when all reasonable land, soil, and water conservation practices have been applied. In other words, reference condition reflects a waterbody’s greatest potential for water quality given historic land use activities.

DEQ applies the reference condition approach for making beneficial use-support determinations for certain pollutants (such as sediment) that have specific narrative standards. All classes of waters are subject to the provision that there can be no increase above naturally occurring concentrations of sediment and settable solids, oils, or floating solids sufficient to create a nuisance or render the water harmful, detrimental or injurious. These levels depend on site-specific factors, so the reference condition approach is used.

Also, Montana water quality standards do not currently contain specific provisions addressing nutrients (nitrogen and phosphorus), or detrimental modification of habitat or flow. However, these constituents and actions are all known to adversely affect beneficial uses under certain conditions or combination of conditions. The reference condition approach is used to determine if beneficial uses are supported when nutrients and flow or habitat modifications are present.

Waterbodies that are used to determine reference conditions are not necessarily pristine, perfectly suited to giving the best possible support to all possible beneficial uses. Reference condition also does not reflect an effort to turn the clock back to conditions that may have existed before human settlement, but is intended to accommodate natural variations in biological communities, water chemistry, etc. due to climate, bedrock, soils, hydrology and other natural physiochemical differences. The intention is to differentiate between natural conditions and any widespread or significant alterations of biology, chemistry or hydrogeomorphology due to human activity. Therefore, reference condition should reflect minimum impacts from human activities. It attempts to identify the potential condition that could be attained (given historical land use) by the application of reasonable land, soil and water conservation practices. DEQ realizes that presettlement water quality conditions usually are not attainable.

Comparisons of conditions in a waterbody to conditions in a reference waterbody must be made during similar season and/or hydrologic conditions for both waterbodies. For example, the TSS of a stream at base flow during the summer should not be compared to the TSS of reference condition that would occur during a runoff event in the spring. In addition, a comparison should not be made to the lowest or highest TSS values of a reference site, which represent the outer boundaries of reference condition.

The following methods may be used to determine reference conditions:

Primary Approach

- Comparing conditions in a waterbody to baseline data from minimally impaired waterbodies that are in a nearby watershed or in the same region having similar geology, hydrology, morphology, and/or riparian habitat.
- Evaluating historical data relating to condition of the waterbody in the past.
- Comparing conditions in a waterbody to conditions in another portion of the same waterbody, such as an unimpaired segment of the same stream.

Secondary Approach

- Reviewing literature (e.g., a review of studies of fish populations, etc. that were conducted on similar waterbodies that are least impaired).
- Seeking expert opinion (e.g., expert opinion from a regional fisheries biologist who has a good understanding of the waterbody's fisheries health or potential
- Applying quantitative modeling (e.g., applying sediment transport models to determine how much sediment is entering a stream based on land use information, etc.).

DEQ uses the primary approach for determining reference condition if adequate regional reference data are available and uses the secondary approach to estimate reference condition when there are no regional data. DEQ often uses more than one approach to determine reference condition, especially when regional reference condition data are sparse or nonexistent.

303(d) Listing Process Overview

Impaired state waters that do not fully support their beneficial uses are identified primarily during the biennial development of the state's 303(d) List. The 1997 Montana Legislature amended state water quality law to require that the placement of waterbodies on the state's 303(d) List must be supported by sufficient credible data to ensure that such listings are justified (75-5-702 MCA). Based on this legislation and the applicable sections of the federal Water Quality Act, DEQ has adopted the following principles for the development of the 303(d) List:

- DEQ shall consider all currently available data, including information or data obtained from federal, state, and local agencies, private entities, or individuals with an interest in water quality protection.
- DEQ shall develop guidelines that can be used to assess the validity and reliability of the data used in the listing and for making beneficial use-support determinations. A data management system will be developed to track and document the data sufficiency and beneficial use support determinations.
- DEQ shall use the guidelines in making all additions to or deletions from the 303(d) List. The data and information used in making any changes in the 303(d) List will be available for public review.
- DEQ will monitor and reassess all waterbodies that are removed from the 303(d) List due to the lack of sufficient credible data during the following field season or as soon as possible thereafter.

A major step in implementing these principles was to develop and document guidelines for the sufficient credible data and beneficial use determinations. First, DEQ reviewed general EPA guidelines for making beneficial use determinations and refined them into a beneficial use-support assessment process applicable to Montana. Next, DEQ identified the data required for this assessment process and drafted guidelines for evaluating data validity and reliability. These initial guidelines for sufficient credible data and beneficial use determination were then subjected to an intensive, iterative process of review and refinement to produce the version that has been used in the development of the Draft 2000 303(d) List. This version is described in the following pages.

For each waterbody, the entire review is documented on an Excel spreadsheet so anyone can examine the basis and rationale for the DEQ decisions. Data reports and other data sources considered in the reviews are identified within the spreadsheet. The spreadsheet also documents how the available data were assessed to determine if the available data are sufficient and credible for making beneficial use-support determinations. The rationale for use-support determinations is documented by means of rating tables and assessor's comments. Finally, the assessment methods employed for making the use-support determinations are recorded and the probable causes and sources of impairment are identified.

Identification of Available Water Quality Data

DEQ and its predecessor agencies have been gathering water quality data for many years. The bulk of these data have been retained in agency files and records. In recent years DEQ's water quality monitoring data along with information from other selected sources have been incorporated into computerized water quality databases. These records and data bases provided a basic foundation to which materials from other sources were added through a systematic effort so that DEQ would have all readily available data for making waterbody assessment determinations for the 2000 303(d) List.

DEQ began its effort to identify external sources of data by sending out more than 2,700 letters requesting information from individuals, organizations, and agencies identified as possibly having water sampling data or other relevant information. Some of the major organizations and agencies receiving these requests included the following:

Natural Resource Conservation Service
Montana Department of Fish Wildlife and Parks
U.S. Forest Service
U.S. Geological Survey
Montana Natural Resources Information System of the Montana State Library
All Montana Conservation Districts
U.S. Fish and Wildlife Service
University of Montana
Montana State University
Montana Tech of the University of Montana
The Riparian and Wetland Research Program
of the Montana Forest and Conservation Experiment Station
Montana Department of Natural Resources and Conservation
U.S. Bureau of Reclamation
U.S. Bureau of Land Management
Montana Department of Transportation
Plum Creek Timber Co.
Montana Nature Conservancy
Champion International

U.S. Army Corps of Engineers
Montana Power Company
Montana Dakota Utilities
The seven Montana Tribal governments
Montana Bureau of Mines and Geology
U.S. Environmental Protection Agency
AVISTA (Washington Water Power)
All known local volunteer water quality groups.

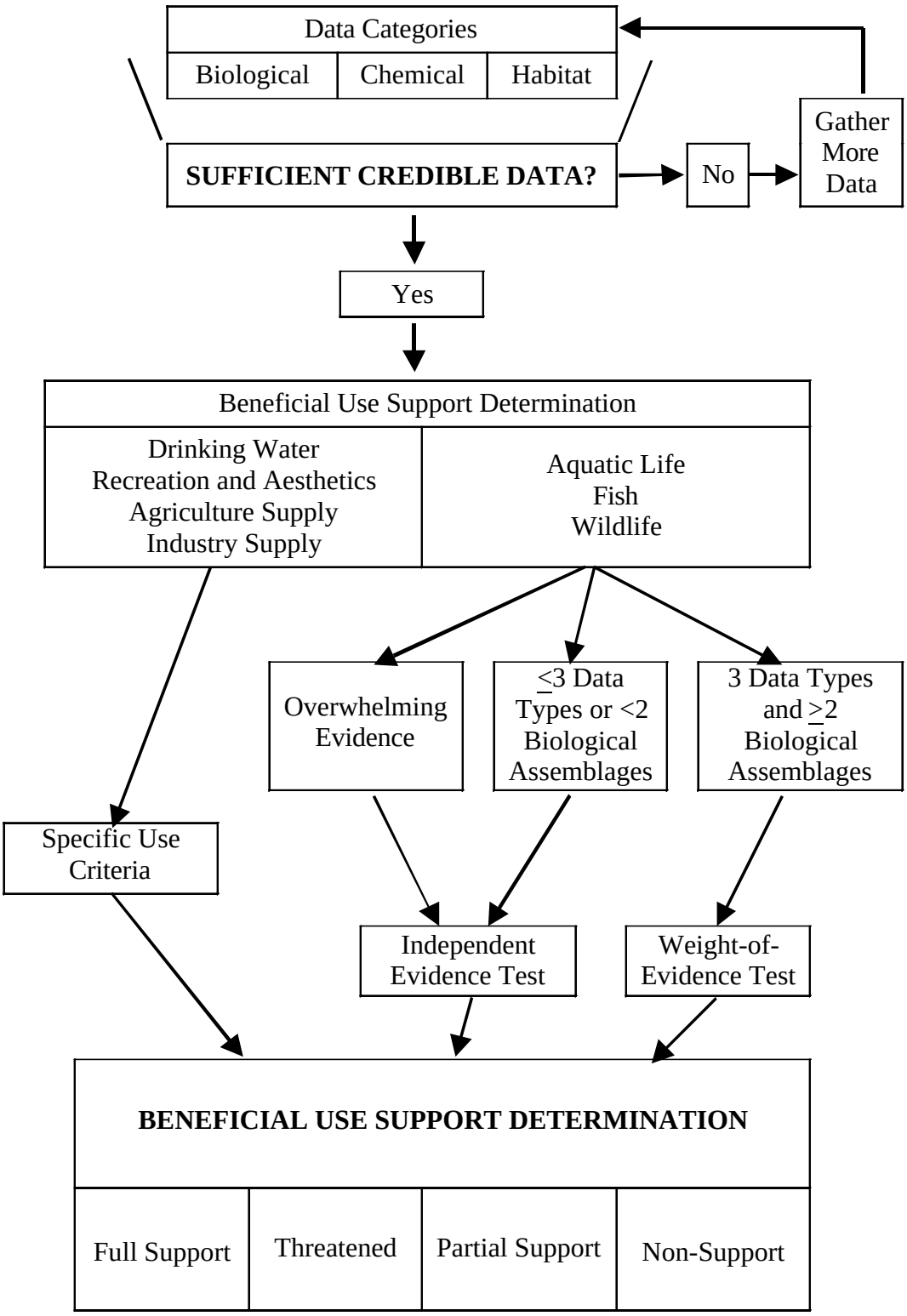
Information and data supplied in response to this mailing provide much useful information, particularly for water quality measurements (water station data), riparian habitat (Riparian Wetland Research Program RWRP), fisheries (Montana River Information System and the Department of Fish Wildlife and Parks MRIS and DFWP) and detailed local-area water quality studies (conservation districts, university, and agency studies). Often the sources or materials provided in response to the letter provided references to additional materials available from other sources.

Specific searches for these references and general searches for water quality information were conducted on all the major Montana reference and information search tools available including:

Montana DFWP (library holdings and data in the Montana Rivers Information System)
Montana State Library (bibliography and reference holdings)
Montana Natural Resource Information System
United States Geological Service (water quality monitoring data)
Montana Bureau of Mines and Geology (Ground Water Information Center)
Montana State University (bibliography and reference holdings)
Montana Tech (bibliography and reference holdings)
University of Montana (bibliography and reference holdings)
U.S. Forest Service (GIS data)
Plum Creek (technical reports and white papers).

While most of the data uncovered by this intensive search effort were valuable, some were unusable or of limited value. Some information uncovered could not be reliably interpreted because there was inadequate documentation of such basic elements as the specific location, time, and methods employed in collecting the data. In some cases large amounts of raw data were discovered which had been collected but never processed or analyzed by the collecting agency. The main reason data were collected but not analyzed was the cost, and since it would have been prohibitive for DEQ to assume the processing cost, such raw data usually were considered not readily available for the beneficial use assessment. In some cases old data were not used when newer data were available to provide a better indicator of current water quality conditions. However, some older data were valuable indicators of reference condition at an earlier time or as indicators of changes in water quality that had resulted from land use change.

Figure 1. Sufficient Credible Data Assessment & Beneficial Use-Support Determination Process



Sufficient Credible Data Assessment

Montana law requires DEQ to use sufficient credible data (SCD) to make beneficial use-support determinations. The law defines SCD as "chemical physical or biological monitoring data alone or in combination with narrative information that supports a finding as to whether a waterbody is achieving compliance with applicable water quality standards" (75-5-103 MCA).

DEQ has developed data quality objectives (DQOs) to ensure that data are sufficient and credible for evaluating whether a waterbody should be added to or removed from the 303(d) List. These DQOs apply only to 303(d) and 305(b) listing decisions. They are not intended or designed for use in determining compliance with permits for enforcement purposes or for the development of TMDL plans. Those activities often require additional information.

The DQOs were developed to ensure that beneficial use-support determinations would be made with a reasonable level of confidence. It must be recognized however that the art and science of water quality assessment is complex, that methods of assessment change over time, and that the factors affecting the quality of particular waterbodies change. In recognition of these realities state law requires DEQ to review and revise 303(d) listing decisions at intervals not to exceed 5 years. The law also requires that if DEQ removes a waterbody from the 303(d) List due to the lack of sufficient credible data, it shall monitor and assess that waterbody during the next field season or as soon as possible thereafter (75-5-702 MCA).

In any water quality assessment process there is always a risk of concluding that a waterbody is impaired when it truly is not or concluding that a waterbody is not impaired when it is. Either of these errors involves a cost. Concluding that a waterbody is impaired when it is not results in a cost in resources and dollars for collecting additional information, preparing a TMDL plan, and perhaps implementing unnecessary corrective measures. Concluding that a waterbody is not impaired when it actually is means that existing human health threats and environmental degradation will not be addressed.

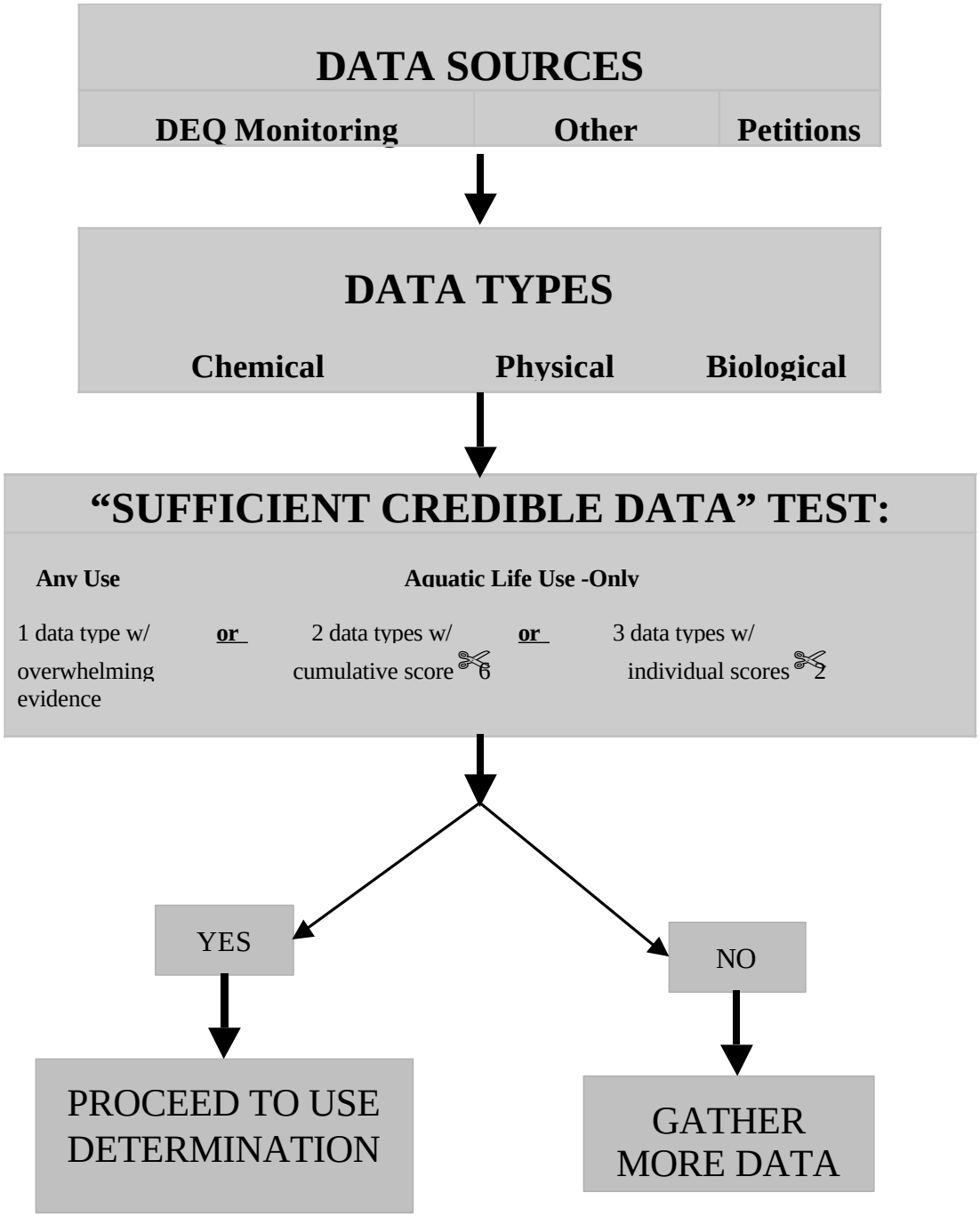
Recognizing these risks, DEQ has used the following goals in designing its guidance for determining the availability of sufficient credible data:

- Assess few waterbodies as impaired when in fact they are not.
- If the decision is uncertain, adopt the choice that will not reduce protection of the resource.

It should be noted that any decision to remove a waterbody from the 303(d) List due to a lack of SCD will result in the collection of additional data during the next field season or as soon as possible thereafter. Also, a decision placing a waterbody on the List generally means that it will receive additional monitoring and assessment to collect additional information needed to further identify the sources and causes of impairment for the development of a TMDL plan. Therefore, DEQ should be able to determine if a waterbody was incorrectly listed as impaired before resources are expended to develop and implement a TMDL plan.

The process DEQ uses to determine if data are sufficient and credible for making beneficial use-support decisions is summarized in Figure 2. The concepts underlying this process came from an EPA model for assessing the beneficial uses of streams using a combination of physical (habitat), biological, and chemical monitoring (U. S. EPA 1997). The model defines the relationship between parameters such as fish and benthic macroinvertebrate indices that directly measure the condition of the biotic community and its response over time to stressors, and parameters that directly measure stressors such as levels of pH, nutrients, and toxicants. EPA recommends that states incorporate a suite of parameters in their monitoring

Figure 2. Sufficient Credible Data Assessment: Flow Diagram



programs to evaluate attainment of beneficial uses. For example, EPA recommends that monitoring for aquatic life use support include the collection of habitat and community level biological data and the measurement of chemical parameters in water and sediment.

Sufficient Credible Data Decision Tables

The SCD decision process employs decision tables. The tables DEQ employed for determining if data are sufficient and credible for making aquatic life use-support determinations for streams are modified versions of tables that were recommended by EPA (1997). DEQ has developed additional SCD decision tables to determine if data are sufficient and credible for making aquatic life use-support determinations for lakes and wetlands and for other beneficial use-support determinations such as drinking water and contact recreation. **[All tables will be found at the end of this appendix.]**

The tables focus the SCD process on four components that contribute to data validity and reliability for water quality assessment:

- Technical soundness of methodology
- Spatial/temporal coverage
- Data quality
- Data currency

The process of deciding if there are sufficient credible data to evaluate use support of each beneficial use takes into account all of these four individual components. In most cases a finding of sufficient credible data will result when several types of data have been collected over a period of time using sound technical methods and there are no indications of recent changes to the waterbody that would invalidate the results obtained. The SCD decision tables are specifically designed to help the evaluator determine when the total package of available information is adequate.

Overwhelming Evidence

There are situations where a single set of data is all that is needed to tell the evaluator that a particular beneficial use is or is not supported. For example a single set of water chemistry data may be sufficient to establish that a waterbody is not fit for use as a source of drinking water. When such "overwhelming evidence" is available use of the SCD decision tables becomes unnecessary. **Reliable data that reflect current human-caused impairments** normally constitute overwhelming evidence when they document,

For aquatic life uses:

- Any exceedence of an acute aquatic life standard.
- A 250% exceedence of a chronic aquatic life standard, even if there is only one credible data point.
- Any exceedence of an aquatic life standard based on sufficient data to calculate a geometric mean.
- Any 50% exceedence of a narrative standard (e.g. sediment levels in an impaired stream reach are determined to be 50% greater than sediment levels of an appropriate reference site).
- Any activities that negatively impact habitat by more than 50% (e.g. less than 50% of a stream corridor has adequate riparian habitat when compared to potential or reference condition).
- Any activities that negatively impact biological communities by more than 50% (e.g. a fish population reduced to less than 50% of its potential due to sedimentation; or macroinvertebrate communities less than 50% of those in reference waters).

For fishery uses:

- Any significant non-natural barriers to fish movement or migration. Note: conditions resulting from the

reasonable operation of dams in existence since July 1, 1971, are considered natural (75-5-306 MCA).

- Chronic de-watering of a considerable section of a waterbody.

Overwhelming evidence also can establish that a waterbody is fully supported (e.g. direct rigorous measurement of the biological communities indicates that aquatic life use is fully supported).

Aquatic Life/Fisheries SCD

The aquatic life beneficial use is a broad descriptor intended to protect fish, invertebrates, aquatic plants, and associated wildlife. All of the water classes defined under the Montana Water-Use Classification system require that the rated waters support the beneficial use of "growth and propagation of fishes and associated aquatic life waterfowl and furbearers" (ARM 17.30.604-624). The aquatic life/fisheries SCD tables (Tables 1-3 for streams and Tables 4-6 for lakes) provide a systematic but flexible approach for making decisions concerning the level of information required for aquatic life beneficial use-support determinations. It is a holistic approach entailing consideration of data from the following three data categories:

Physical/habitat – includes qualitative and/or quantitative riparian and aquatic vegetation information, and hydrogeomorphic characteristics and functions. For example, data may include stream reach habitat surveys with photos to document impairments, and physical measurements of the stream channel, such as pebble counts and channel cross sections.

Biology – includes chlorophyll *a* data; and aquatic biological assemblage data relating to fish, macroinvertebrates, and algae; and wildlife community characteristics. Measurements often include population estimates, biomass, number and relative abundance of sensitive or pollution-tolerant species, diversity, and distribution.

Chemistry/toxicity – includes bioassays; temperature and total suspended sediment data; and chemistry data such as concentrations of toxicants, nutrients, and dissolved oxygen.

Aquatic Life/Fisheries SCD tables have been developed for each data category to assist the reviewer in evaluating and documenting whether data are sufficient and credible by using the following data components to score the data: 1) technical soundness 2) spatial/temporal coverage, 3) quality, and 4) currency. The overall score for each data category ranges from 1 to 4. Data given a higher score provide a higher level of information for making an aquatic life use-support determination. For example, the component scores for the biological data category might be: 2 for technical soundness, 3 for spatial/temporal coverage, 3 for quality and, 2 for currency. In this situation, the reviewer would usually assign the biology data category an overall score of 2 or 3 depending on his/her interpretation of how useful the data are for making an aquatic life/fisheries beneficial use-support determination.

The overall data category score usually is <u>not</u> just the numerical average of the component scores. For example, if the data currency component scores a 1 and the other components each score a 4, the reviewer may assign an overall score of 1, because the data do not indicate current conditions. The reviewer documents the rationale used to make the overall scoring decision for each data category at the bottom of each table.

The overall scores from the three data categories are added together (ignoring any score of "1") to obtain a SCD score for the aquatic life/fisheries data. If the total SCD score is at least 6 (all three data categories have overall scores of 2 or more, or if two data categories score 3 or more), the reviewer concludes there are sufficient credible data to make use-support determinations for the aquatic life and fisheries beneficial uses.

DEQ infers that a waterbody's associated wildlife communities are protected if no data indicate impairment to wildlife and the aquatic life and fishery beneficial uses are determined to be fully supported. However, DEQ would determine that a waterbody's aquatic life beneficial use is not fully supported if data show that the associated wildlife populations are impaired. Also, DEQ may require additional information before making an aquatic life use-support determination if sources of impairment to wildlife such as elevated metals in the food chain resulting from land use practices are probable and if information regarding probable causes of impairment are not provided in the available data set.

Drinking Water, and Recreation and Aesthetics SCD

DEQ also has developed decision tables to determine if data are sufficient and credible for making drinking water, and recreation and aesthetics beneficial use-support determinations (Tables 7 and 8). For these uses the evaluation of multiple data categories is not necessary and the four components of data adequacy are not numerically scored but are simply rated as sufficient or insufficient. The DEQ reviewer then decides on the overall sufficiency of the data after consideration of the component ratings, and documents the rationale used to make the decision at the bottom of each table.

Agricultural and Industrial Water Supply SCD

DEQ has not developed SCD decision tables for making beneficial use-support determinations for agriculture and industry. Generally if there are sufficient credible data for making beneficial use-support determinations for aquatic life, drinking water, and recreation, then data are also sufficient to make determinations for agriculture and industry. However, the reviewer may require additional information concerning salinity and toxicity to make beneficial use-support decisions for agriculture if sources of impairment to agriculture are probable and information regarding probable causes of impairment are not provided in the available data set.

Ephemeral Streams and Wetlands

DEQ regulations define ephemeral streams as waterbodies that receive water only in direct response to precipitation or snowmelt, and which are always located above the water table (ARM 17.30.602). DEQ defines ephemeral wetlands as state waterbodies that have surface water for less than 90 days per year. Only narrative water quality standards apply to ephemeral waterbodies. DEQ usually assesses only aquatic life use support for ephemeral waterbodies and requires only physical/habitat data (minimum SCD score = 3). However, DEQ recommends that chemistry/toxicity or biological data should be collected when it is practical and appropriate for evaluating aquatic life use support or the use support of other beneficial uses.

Beneficial Use Support Determination

Once it has been determined that there are sufficient credible data to evaluate a waterbody, the assessment process moves to determining the level of beneficial use support required for each use of that waterbody by the Montana Water-Use Classification. Figure 3 displays a flow diagram for the beneficial use support evaluation process.

DEQ conducts beneficial use-support determinations (BUDs) in order to document which state waterbodies are impaired due to anthropogenic impacts on water quality. Beneficial use-support determinations include the following categories (EPA 1997):

- Full support
- Partial support
- Non-support
- Threatened

A waterbody is considered to be "fully supporting" its beneficial uses when the water quality standards established to protect those uses are met. When one or more beneficial uses are not fully supported due to human activities the waterbody may be rated as either "not supporting" or "partially supporting" the affected use or uses. A "threatened" rating indicates that there is evidence that one or more fully supported uses may soon be impaired. The support determinations for the various uses of a waterbody usually will not all be the same because the standards used to determine use support are different for each use.

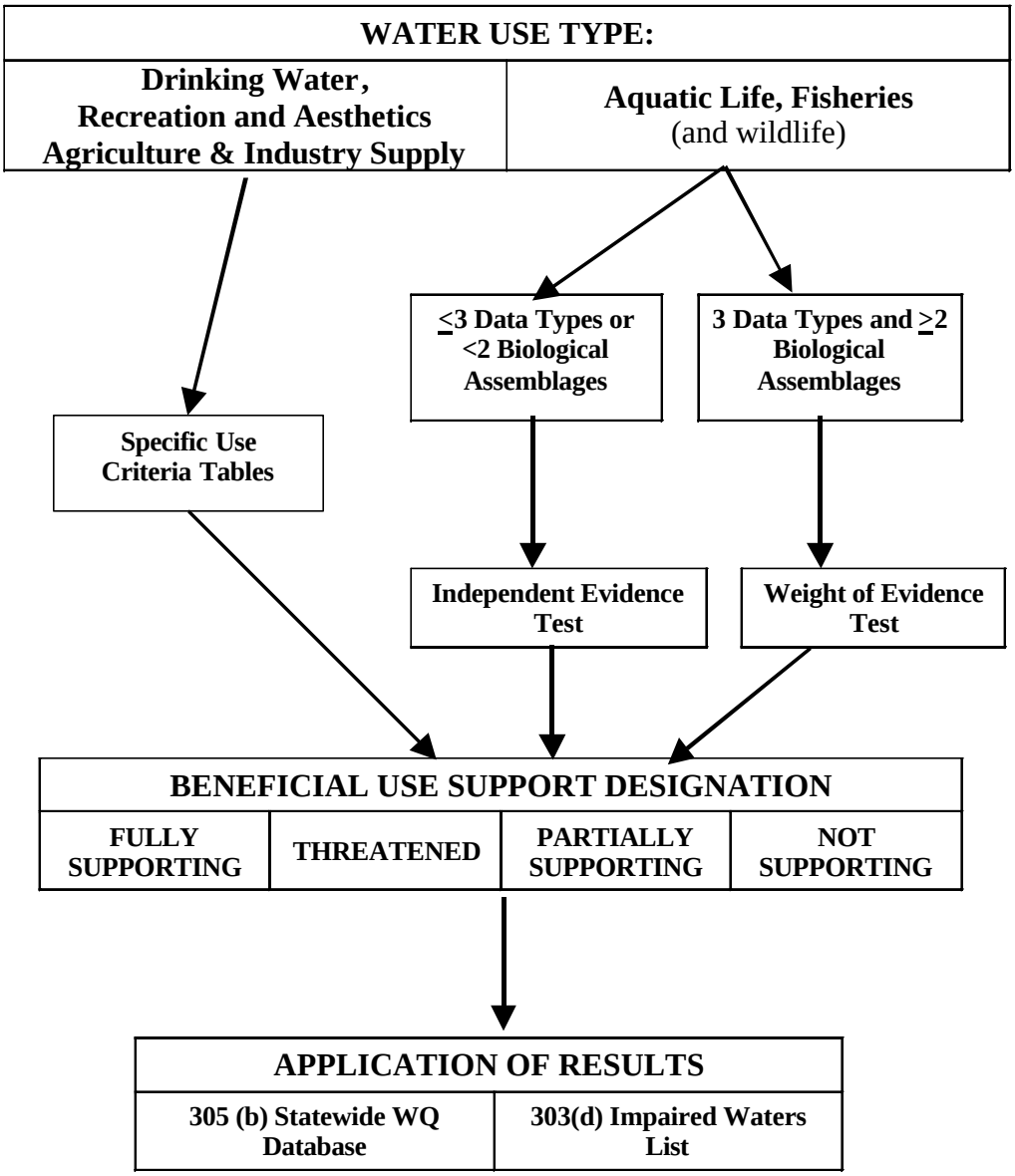
DEQ has found from nearly 45 years of working with the Montana Water-Use Classification System that the actual support for the mix of beneficial uses defined for the different classes can best be addressed by examining the following categories:

- Aquatic Life (considers all life forms which make up and depend on the aquatic ecosystem)
- Cold Water Fishery **or** Warm Water Fishery
- Drinking Water Supply (protects culinary and food-processing use)
- Recreation and Aesthetics (bathing, swimming, boating, fishing, etc.)
- Agriculture Supply
- Industry Supply

Only those categories that apply to the beneficial uses specified for each water-use classification are evaluated for the waterbodies in that classification. For example, a waterbody classified C-1 would not be assessed for use support of drinking water supply or warm water fishery since neither category applies to the waterbody's designated beneficial uses.

EPA considers fish consumption to be a beneficial use but Montana law does not recognize this use. Therefore, DEQ considers fish consumption when making aquatic life and fisheries, and recreation and aesthetics beneficial use-support determinations for 303(d) List purposes. State waters where fish consumption advisories are in effect are identified and discussed in the Montana 305(b) Report.

Figure 3. Beneficial Use-support Determination Flow Diagram



Threatened Uses

Montana water quality law (75-5-103 MCA) defines the term "threatened waterbody" to mean:

> *A waterbody or stream segment for which sufficient credible data and calculated increases in loads show that the waterbody or stream segment is fully supporting its designated uses but threatened for a particular designated use because of:*
>
> *(a) proposed sources that are not subject to pollution prevention or control actions required by a discharge permit, the nondegradation provisions, or reasonable land, soil, and water conservation practices; or*
>
> *(b) Documented adverse pollution trends.*

DEQ has not developed decision tables to determine if specific uses are threatened. Instead, DEQ considers that a beneficial use may be threatened if:

- Data show a decline in the conditions supporting the beneficial use, listed in the beneficial use support decision table or
- Activities proposed for the watershed would be sources of pollution that are not subject to pollution prevention or control actions required by a discharge permit or
- Activities for which a permit is required are occurring within the watershed without a permit or;
- Reasonable land soil and water conversation practices are not being implemented.

A DEQ reviewer assigning a determination of "threatened" to a waterbody beneficial use is required to identify the information used and rationale for making this determination.

Aquatic Life and Fisheries Beneficial Use Determination

The broad range of factors that must be considered in assessing support for the aquatic life/fisheries uses make the assessment of support for these uses more complex than the assessment of support for other uses. Depending on the type and amount of information available, DEQ has developed two distinct tests which may be employed to make aquatic life/fisheries support decisions.

The "**weight-of-evidence test**" is a process for making aquatic life use support decisions when there is a high level of information. DEQ uses this if there are sufficient and credible data in all three of the data categories and if two or more biological assemblages were assessed (minimum score = 3). The assemblages employed must be adequate to reflect any probable impairment. Conclusions drawn from each data category are combined using the weight-of-evidence test to produce the final aquatic life use-support determination employing the following guidelines in combination with Beneficial Use-Support Decision Tables 9 and 10.

- **Fully Supporting** requires all data categories to indicate the waterbody is unimpaired or least impaired, or no more than one data category (i.e. physical/habitat biology or chemistry/toxicity) indicate moderate impairment; **OR** no more than one biological assemblage indicates moderate impairment (the biological community that indicates impairment must be at least 50% of reference condition).

- **Partially Supporting** requires two or more data categories indicating moderate impairment or one data category indicating severe impairment (i.e. physical/habitat biology or chemistry/toxicity) with the remaining data categories indicating that the waterbody is unimpaired or least impaired; **OR** two biological assemblages indicating moderate impairment; or one biological assemblage indicating less than 50% of reference condition.

- **Not Supporting** requires one or more data categories indicating moderate impairment in combination with a separate category indicating severe impairment; **OR** two biological assemblages indicating less than 50% of reference condition.

The **"independent-evidence test"** is a decision process in which any sufficient and credible data that indicate that a waterbody is impaired would result in DEQ placing the waterbody on the 303(d) List. DEQ uses the independent evidence test to make aquatic life use-support determinations if only one or two of the data categories are used (physical/habitat biology or chemical/toxicity); or if all three categories are used but only one biological assemblage (e.g. fish) was assessed or the biological data category's score was < 3.
The independent-evidence test is used when a full suite of data is not available but the information that is available is adequate to provide a basis for making an aquatic life use-support determination. For example data indicating that a stream segment experiences frequent dewatering could be an adequate basis for determining that the aquatic life/fisheries beneficial use is impaired. The factors listed in Tables 9 and 10 are directly applied to interpret the use support of each beneficial use. If all available data indicate that a waterbody is "unimpaired/least impaired" then the beneficial use-support determination would be fully supporting. Any data indicating that a beneficial use is "moderately impaired" would result in the waterbody being listed as partially supporting. Any data indicating that a beneficial use is "severely impaired" would result in the waterbody being listed as not supporting the beneficial use being evaluated.

Beneficial Use Determination - Other Uses

Reaching beneficial use determinations for the drinking water, recreation and aesthetics, agriculture supply and industrial supply uses is a relatively straightforward process. For these uses, criteria based on the relevant water quality standards are listed in Tables 11, 12, 13, and 14. The available data for a waterbody are evaluated using the listed criteria, and an overall use support assignment is made based on consideration of all the criteria for which relevant data are available. In some situations the overall rating will result from clear evidence of support or impairment associated with one or two criteria; other determinations may be derived from indications of water quality derived from the entire set of criteria that apply to a particular use.

Petitions

Under Montana law any person can petition DEQ to change any beneficial use support decision by providing the data necessary to support the requested change (75-5-702 MCA). For example a petition to reconsider a DEQ partial support determination for aquatic life could be based on data from multiple biological assemblages (i.e. fish, macroinvertebrates, algae) which clearly demonstrate that aquatic life is not impacted by any of the listed probable causes and sources of impairment. DEQ beneficial use-support determinations also could be appealed by providing data that clearly demonstrates that the causes of impairment are due to naturally occurring conditions.

When DEQ receives a petition it conducts a sufficient credible data assessment. All available data including both the data used to make the original determination and those provided with the petition are reviewed to ensure that there are sufficient credible data to provide a basis for a valid beneficial use determination. Then the normal tests and table criteria are used to make a beneficial use-support determination. This process must be completed within 60 days of the petition submittal. If DEQ determines that original determination should be revised, it must provide public notice of the proposed change and allow 60 days for public comment prior to taking final action.

Literature Cited

U.S. EPA. 1997. Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) EPA-841-B-97-002A.

Table 1. Biology Sufficient Credible Data Decision Table for Aquatic Life Use (Streams)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	-Visual observations of biota were made with no true assessment - Simple documentation. - Unable to make a comparison to reference condition. - Relative abundance data of fish that are not supplemented with quantitative data or can not be interpreted by a biologist. - Fish creel surveys with limited supplemental information.	- very limited monitoring - data are extrapolated from other sites	-Data precision and sensitivity is very low or unknown. - Qualified professional does not provide any oversight. - Poor taxonomic resolution	- Data are not relevant; biological communities may have changed significantly since the assessment was made.
2	- Only one assemblage was assessed (e.g., RBP Protocols). - Probable sources and causes of impairment are documented. - Reference condition can be approximated by a professional scientist. - Relative fish abundance data that can be interpreted by a qualified professional or also includes quantitative fish density.	-Limited to a single sampling - Limited sampling for site-specific studies	- Data precision and sensitivity are low to moderate. - Data were collected following appropriate protocols; however individuals had limited training. - Qualified professional provided oversight. - Good taxonomic resolution.	- It is unlikely that the biological communities have changed significantly since the survey was conducted.
3	- Two assemblages assessed or one assemblage with quantitative (e.g., biomass) measurements also made following standard operating procedures (SOPs). - Often includes biotic index interpretations. - Fisheries data often includes information about growth rates, age class and condition; The entire fish assemblage is targeted. - Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment.	-Monitoring normally occurs during a single season. - Monitoring may include site specific studies; However, also has limited spatial coverage of the stream reach.	- Data have moderate precision and sensitivity. - Qualified professional performs survey or provides training; the individual making the survey is well trained. - Qualified professional performs the survey. - Detailed taxonomic resolution	- Data were collected recently or it is very unlikely that the biological community has changed significantly since the survey was conducted.
4	-Two or more assemblages assessed and often includes quantitative measurements following SOPs. -Reference condition is well understood and is used as the basis of the assessment. -Often includes biotic index interpretations	-Surveys conducted for multiple years and/or seasons - Broad coverage of sites - Often uses targeted or probabilistic design	-High precision and sensitivity. -Assessment performed by a highly experienced qualified professional.	-Data are current; there is no doubt that the biological survey reflects current conditions.

Table 2. Chemistry/Toxicity Sufficient Credible Data Decision Table for Aquatic Life Use (Streams)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	-Best professional judgment based on land use data or source locations - Chemical parameters analyzed are limited and do not provide sufficient information concerning probable causes of impairment.	- Low spatial and temporal coverage -limited data at critical periods - Limited period of record (e.g. one day)	-Data precision and sensitivity is very low or unknown and data appear to be an outlier (suspect). - High detection limits make the data difficult or impossible to interpret. QC protocols indicate contamination, etc. QA/QC protocols were not followed.	-Data do not reflect current conditions.
2	- Usually grab or composite water quality samples - Synthesis of historical information on fish contamination levels -Screening models based on loading data (not calibrated or verified) - Sediment contamination data (e.g., metal scans) -Limited chemical parameters ; however probable impairment causes are targeted and probable sources of impairment documented. - Reference condition can be approximated by a professional. -Acute or Chronic WET; or Acute ambient; or acute sediment tests	-Moderate spatial and/or temporal coverage.. -Data collected at critical periods (e.g., spring, summer, spawning season) -Short period of record but good spatial coverage -Quarterly sampling	- Data quality and sensitivity are low to moderate. - Data were collected following appropriate protocols but individuals had limited training. - Low detection limits -QC indicates there was no contamination, etc. -low replication used for toxicity tests	- Data are substantially older than ideal, but appear to be a reasonable indicator of current conditions.
3	- Series of grab or composite samples (diurnal coverage as appropriate) - Calibrated models - Width/depth integrated sampling - Combination of two or more analyses of the following: water column, sediment, chlorophyll; toxicity testing; bioaccumulation data (e.g., fish consumption advisory data). -Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment. -2-3 Acute or Chronic Ambient; or Acute sediment; or Acute and Chronic WET tests for effluent dominated system	-Broad spatial and temporal coverage of site with sufficient frequency and coverage to capture acute events. -Typically monthly sampling during key periods. -Lengthy period of record (sampled over a period of months for >2 years)	- Data have moderate precision and sensitivity. - Professional scientist provides training; the individual collecting the samples is well trained. - Qualified professional collects samples; Data is analyzed in a competent laboratory that uses methods with low detection limits -QC documents where there are no sampling or analytical errors. - Moderate replication used for toxicity tests	Data are older than ideal, but there are no indications that conditions have changed significantly.
4	-Combination of three or more of the following: water column chemistry, sediment chemistry, chlorophyll or bioaccumulation data; or toxicity testing. >3 acute and chronic ambient tests; or acute or chronic sediment tests.	Broad spatial (several) and temporal coverage (monthly sampling during key periods for > 3 yrs) of site with sufficient frequency and parameter coverage to capture acute events, chronic conditions and all other potential impacts.	-High precision and sensitivity. -Data collected and analyzed by qualified professionals following detailed QA/QC protocols. -High replication used for toxicity tests	-Data are current,. generally less than 5 years old, and/or there is high certainty that conditions have not changed since data were collected.

Table 3. Habitat/Physical Sufficient Credible Data Decision Table for Aquatic Life Use (Streams)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	-Habitat characteristics were observed visually with no true assessment -Only has documentation of land use practices that might alter habitat. - No attempt to compare to reference condition; observed impacts are likely to be natural.	Sporadic visits; assessments are only made at limited access points such as road crossings.	-Data precision and sensitivity are very low or unknown. - Data were not collected by trained individuals following appropriate protocols.	-Data are not relevant; habitat has likely changed significantly since the assessment was made.
2	- Visual observations of habitat characteristics were made with simple assessment. - Land use maps used to characterize watershed condition; Probable sources of impairment are documented. - Reference Condition can be approximated by a qualified professional.	-Limited to annual visit and non-specific to season; -Limited spatial coverage -Site specific studies	- Data precision and sensitivity are low - Data were collected following appropriate protocols ; however individuals had limited training. - Qualified professional involved only through correspondence.	- It is unlikely that the habitat has changed significantly since the assessment was made.
3	- Use of visual-based habitat assessment following SOPs (e.g., Stream Reach Assessment and PFC). - Documentation includes photographs. - Assessment includes quantitative measurements of selected parameters. - Data on land use are used to supplement assessment. - Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment.	-Assessment normally occurs during a single season. - Assessment is broad; often covering the entire stream reach or region. - An attempt was made to access the stream reach wherever possible.	- Data have moderate precision and sensitivity. - Professional biologist performs survey or provides training; the individual making the assessment is well trained. - Professional biologist or hydrologist performs the assessment.	- Data were collected recently or it is very unlikely that the habitat has changed significantly since the assessment was made.
4	-Assessment of habitat based on quantitative measurements of instream parameters, channel morphology and floodplain characteristics. -Reference condition is well understood and is used as the basis of the assessment.	-Good access of the entire stream reach including private property. - Helicopter surveys, etc. -Data from multiple years.	-High precision and sensitivity. -Assessment was performed by highly experienced professional.	-Data are current; There is no doubt that the assessment reflects current conditions.

Table 4. Biology Sufficient Credible Data Tables for Aquatic Life Use (Lakes and Wetlands)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	- Simple documentation, visual observations only(no true assessment) - Unable to make a comparison to reference condition. - Relative abundance data of fish is not supplemented with quantitative data or can not be interpreted by a qualified professional. - Fish creel surveys with limited supplemental information.	- Very limited monitoring	-Data precision and sensitivity are very low or unknown. - Professional biologist does not provide any oversight. - Poor taxonomic resolution	-Data do not reflect current conditions.
2	- Only one biological assemblage was surveyed or observed (usually fish or algae for lakes; and waterfowl, vegetation or macroinvertebrates for wetlands); includes documentation sufficient for interpretation by qualified professional. - Probable sources and causes of impairment are documented. - Reference condition can be approximated by a qualified professional.	-Limited to a single sampling - Limited sampling for site-specific studies	- Data precision and sensitivity are low to moderate. - Data were collected or observations were made following appropriate protocols, but individuals had limited training. - Professional biologist provided oversight. - Good taxonomic resolution.	- Data are substantially older than ideal, but there is reason to believe that current conditions are reasonably represented.
3	- Relative abundance data or well-documented observations for two biological assemblages such as fish, algae, macroinvertebrates, amphibians, etc., with quantitative (e.g. population, growth rates, primary production, age class, size, condition) data for at least one assemblage. - May include biotic index interpretations. -The entire fish assemblage may not be targeted but all fish species sampled were identified. - Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment.	-Monitoring normally occurs during a single season. - Monitoring may include site specific studies, but has limited spatial coverage	- Data have moderate precision and sensitivity. - Qualified professional performs survey or provides training; the individual making the survey is well trained. - Qualified professional performs the survey or makes observations. - Detailed taxonomic resolution	Data are older than ideal, but there are no indications that conditions have changed significantly.
4	-Two or more assemblages were surveyed and assessed; includes quantitative measurements for at least two assemblages following detailed SOPs. -Reference condition is well understood and is used as the basis of the assessment. -The fish survey was designed to sample the entire fish assemblage. -Often includes biotic index interpretations	-Surveys conducted for multiple years and/or seasons - Broad coverage of sites - Often uses targeted or probabilistic design	-High precision and sensitivity. -Assessment performed by a highly experienced professional biologist. -Detailed taxonomic resolution	-Data are current, generally less than five years old, and/or there is certainty that the conditions have not changed..

Table 5. Chemistry/Toxicity Sufficient Credible Data Tables for Aquatic Life Use (Lakes and Wetlands)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	-Best professional judgment based on land use data or source locations -Limited chemical analyses which do not provide sufficient information concerning probable causes of impairment. -Data extrapolated when homogeneous conditions are expected	- Low spatial and temporal coverage - limited data at critical periods - Limited period of record (e.g. one day)	-Data precision and sensitivity are very low or unknown and data appear to be an outlier (suspect). - High detection limits make the data difficult to interpret. -QA/QC protocols not followed.	-Data do not reflect current conditions.
2	- Usually grab or composite water quality samples -Screening models based on loading data (not calibrated or verified) - Sediment contamination data (e.g. metal scans) - fish consumption advisories -Chemical parameters limited; however, probable causes of impairment were targeted and documented. - Reference condition can be approximated by a professional. -Acute or Chronic WET; or Acute ambient; or acute sediment tests - Synthesis of historical information on fish contamination levels for lakes - N/P ratios calculated for lakes -Trophic status determined for lakes using at least two of the following; TOC, transparency, primary production, phytoplankton density and/or biomass, total nitrogen, total phosphorus or chlorophyll a.	-Moderate spatial and/or temporal coverage. -Data collected at critical periods (Lakes sampled near turnover, late winter and/or mid-summer; Wetlands sampled in the spring or summer) -Short period of record; but good spatial coverage -Quarterly sampling or targeted seasonal-sampling. - Several parameters often collected over several years (e.g., Secchi Depth).	- Data quality and sensitivity are low to moderate. - Data was collected following appropriate protocols; however individuals had limited training. - Low detection limits -QC indicate there was no contamination or other problems. -low replication used for toxicity tests	- Data are substantially older than ideal, but there is reason to believe that they reasonably indicate current conditions.
3	- Series of grab or composite samples (depth-integrated, diurnal coverage, hypolimnion and epilimnion sampling as appropriate) - Calibrated models - Combination of two or more analyses of the following: water column, sediment, chlorophyll; toxicity testing; primary production; bioaccumulation. -Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment. -2-3 Acute or Chronic Ambient; or Acute sediment; or Acute and Chronic WET tests for effluent dominated system -trophic status determined using Secchi depth, total phosphorus and chlorophyll a; and includes a dissolved oxygen/temperature profile(s) for lakes. -N/P ratios calculated for lakes	-Broad spatial and temporal coverage of site with sufficient frequency and coverage to capture acute events (lakes sampled near turnover; late winter or mid summer; wetlands sampled late winter/early spring and mid-summer). -Typically monthly sampling during key periods. -Lengthy period of record (sampled over a period of months for >2 years)	- Data have moderate precision and sensitivity. - Qualified professional provides training; the individual collecting the samples is well trained. - Qualified professional collects samples; Data are analyzed in a competent laboratory that uses methods with low detection limits -QC documents that there are no sampling or analytical errors. - Moderate replication used for toxicity tests	Data are older than ideal, but there are no indications that conditions have changed significantly.
4	-Combination of three or more of the following: water column chemistry, sediment chemistry, chlorophyll a, primary production, bioaccumulation data or toxicity testing. - Includes trophic status, dissolved oxygen profiles and N/P ratios (lakes) >3 acute and chronic ambient tests; or acute or chronic sediment tests. - Includes sediment core sampling	Broad spatial (several) and temporal coverage (monthly sampling during key periods for > 3 yrs) of site with sufficient frequency and parameter coverage to capture acute events, chronic conditions and other potential impacts.	-High precision and sensitivity. -Data collected and analyzed by professionals following detailed QA/QC protocols. -high replication used for toxicity tests	-Data are current, generally less than 5 years old, and/or it is essentially certain that conditions have not changed since they were collected.

Table 6. Physical/Habitat Sufficient Credible Data Tables for Aquatic Life Use (Lakes and Wetlands)

Score	Technical Components	Spatial/Temporal Coverage	Data Quality	Data Currency
1	-Habitat characteristics were observed visually with no true assessment - Simple documentation of practices that might alter habitat. - No attempt to compare to reference condition; observations are likely to be natural.	Sporadic visits; assessments only at limited areas.	-Assessment precision and sensitivity are very low or unknown. - Assessment was not conducted by trained individuals.	-Data do not reflect current conditions.
2	- Visual observations of habitat characteristics or impairments (e.g. shoreline erosion, fluctuating water levels, siltation, riparian and aquatic vegetation, grazing, buffer zones, spawning areas, wildlife habitat/use) were made with simple assessment. - Use of land use maps to characterize watershed condition; probable impairment causes & sources documented. - Reference condition can be approximated by a qualified professional.	-Limited to annual visit and non-specific to season; -Limited spatial coverage -Site specific studies	- Assessment precision and sensitivity are low - Assessment was undertaken following appropriate protocols, but individuals had limited training. - Qualified professional involved only through correspondence.	- Data are substantially older than ideal, but there is reason to believe they reasonably indicate current conditions.
3	- Use of visual-based habitat assessment following SOPs; and/or includes a detailed interpretation. - Documentation includes photographs - Sources and causes of impairment are well documented and understood. - Information concerning surrounding land use and/or reservoir management activities is used to supplement assessment. - Reference condition can be determined with a reasonable degree of confidence and used as a basis for assessment.	-Assessment normally occurs during a single season. - Assessment is broad; often covering the entire water body.	- Data have moderate precision and sensitivity. - Qualified professional provides training; the individual making the assessment is well trained. - Qualified professional performs the assessment and makes interpretations.	- Data are older than ideal, but there are no indications that conditions have changed significantly.
4	-- Assessment includes quantitative measurements of selected parameters. -Aerial photographs, satellite images or infrared photographs are used as part of the assessment. Detailed studies conducted to determine impacts to habitat caused by dam operations, etc. -Reference condition is well understood and is used as the basis of the assessment.	-Assessment is broad; often covering the entire water body; data collected from multiple years. -Aerial surveys that are ground truthed.	-High precision and sensitivity. -Assessment was performed by a qualified professional following detailed protocols.	- Data are current, generally less than five years old, and/or it is essentially certain that the conditions have not changed since data were collected.

Table 7. Drinking Water Sufficient Credible Data Decision Table

Level of Information	Technical Component	Spatial/Temporal Coverage	Data Quality	Data Currency
Insufficient Data	- Probable impairments to drinking water were not measured. -Impairments are inferred. -Probable sources of impairment were not documented.	-Limited temporal coverage (less than quarterly sampling for <3 years). -Data not collected at critical times -Limited spatial coverage that does not adequately target probable impairments (e.g., one location) - Limited water quality data with no exceedences of standards, but sediment data indicate contamination, and/ or probable sources of impairment are located in the watershed.	-Data precision and sensitivity are low or unknown. - QC protocols not followed or indicate contamination. -Detection limits are too high. -Samples not properly preserved	- Data do not reflect current conditions.
Sufficient Credible Data	-Total recoverable metals were measured. - Total and dissolved metals were measured. -Organic compounds were measured -Sampling and analysis includes sediment. -Probable sources of impairment were documented.	-Human health water quality standards are exceeded. -A sufficient number of parameters were analyzed through sampling at least quarterly; or sampling adequately targeted critical time periods for >3 years. -Good spatial coverage or well-targeted sampling locations. -Limited water quality data with no exceedences of standards, sediment data do not have elevated metals and/or organic compounds and no probable sources of impairment are located in the watershed.	-Data precision and sensitivity moderate. -QA/QC protocols are followed. - Low detection limits	-Data likely reflects current conditions. - There have not been any significant changes in activities occurring in the watershed since the data were collected.

Note: For this guidance document, exceedence is defined as a pollutant level that violates Montana's water quality standards

Table 8. Recreation and Aesthetics Sufficient Credible Data Decision Table

Level of Information	**Technical Component**	**Spatial/Temporal Coverage**	**Data Quality**	**Data Currency**
Insufficient Data	-Observations of algae blooms, odors, turbidity, aesthetics, etc. without documentation. -Observations made about flows or water levels without documentation. -Observations made concerning surface scums, pollution, toxins, etc. without documentation.	- Very limited water chemistry or fecal coliform data. -Data not collected at critical times such as during the summer for swimming. Limited spatial coverage that does not adequately target probable causes of impairments (e.g., one location). -Limited temporal cover	-Data precision and sensitivity are low or unknown. - QA/QC protocols were not followed. -Samples not properly collected or preserved; or exceed holding times. -Poor documentation	- Data do not reflect current conditions.
Sufficient Credible Data	-Observations of algae blooms, odors, turbidity, aesthetics, etc., well documented. - Documentation includes photos. -Probable sources of impairment identified; probable causes of impairment measured or well documented (toxins, dewatering, etc). -Chlorophyll *a* data collected -Fecal coliform data collected -Fish consumption advisories resulting from anthropogenic impairment -Information concerning beach closures. -Sechii disk data (lakes). -Long-time local residents provide consistent historical perspectives regarding their observation of changes in water quality over time.	-Good temporal coverage of observations, photo documentation, fecal coliform data, etc. -Data and observations are targeted during the summer months. -Good spatial coverage or well targeted sampling location(s). -Limited water quality data or documentation; however, data indicate severe impairment.	-Data precision and sensitivity moderate. -QA/QC protocols are followed. - Low detection limits	-Data likely reflect current conditions. -There have been no significant activity changes in the watershed since the data were collected.

Table 9. Aquatic Life/Fisheries Use Support Decision Table for Streams

DATA CATEGORY (Streams) 1. CHEMISTRY	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
1(a) TOXICITY (e.g., WET Tests)	Bioassay test indicates no acute or chronic toxicity	Bioassay test indicates chronic toxicity	Bioassay test indicates acute toxicity
1(b) CHEMICAL TOXICANTS - (trace metals, ammonia, chlorine, organics, pesticides, etc.) 1, 2 *Acute and Chronic Water Quality Standards*	For any pollutant: No exceedence of acute or chronic standards, and/or the chronic standards are exceeded by less than 10% no more than once for one parameter in a three-year period when measurements were taken at least four times/year (quarterly).	For any pollutant: Acute standards are exceeded by less than 25%; and/or chronic standards are exceeded by 10-50%; and/or water quality standards are exceeded in no more than 10% of the measurements from a large data set.	For any pollutant: Acute standards are exceeded by at least 25%; and/or chronic standards are exceeded by more than 50%; and/or water quality standards are exceeded in more than 10% of the measurements from a large data set.
Sediment Chemistry (Toxicants, e.g., metals and organic compounds)	Sediment trace metal concentrations are similar to reference condition.	Sediment trace metal concentrations are moderately higher than reference condition.	Sediment trace metal concentrations are substantially higher than reference condition.
Models	Predictive models do not indicate impairment.	Predictive models indicate moderate impairment.	Predictive models indicate severe impairment.
Bioaccumulation (e.g., fish tissue)	Pollutants are not bioaccumulated or are only slightly above background levels.	Bioaccumulation of pollutant is moderately above background levels.	Bioaccumulation of pollutant is substantially higher than background levels.

1 **Note: When possible, use the average concentration of samples collected over a 96 hour period and compare directly to chronic standard values; one data point (n=1) is sufficient if no other data were collected within 96 hours.**

2 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.**

Table 9. Aquatic Life/Fisheries Use Support Decision Table for Streams *(Cont.)*

DATA CATEGORY (Streams)	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
1(c) CHEMISTRY (Nutrients, dissolved oxygen, pH, TSS, turbidity, and temperature) [3] [4] [5] *Water quality Standards*	**Water quality standards are not exceeded for any pollutant; or the measurements are similar to reference condition; and/or for one parameter only, the water quality standard was randomly exceeded by less than 10% in no more than 10% of the measurements from a large data set.**	**Water quality standards are exceeded by less than or equal to 50%; Parameters that do not have numeric values will be compared to reference condition; and/or the water quality standards are exceeded for 11 to 25% of the measurements from a large data set.**	**Water quality standards are exceeded by more than 50%; Parameters that do not have numeric values will be compared to reference condition; and/or the water quality standards are exceeded by more than 25% of the measurements from a large data set.**
Nutrients	**Nutrient concentrations are similar to reference condition.**	**Nutrient concentrations are moderately higher than reference condition.**	**Nutrient concentrations are substantially higher than reference condition.**
Sediment	**Total Suspended Sediment or turbidity measurements are similar to reference condition.**	**Total Suspended Sediment or turbidity measurements are moderately higher than reference condition.**	**Total Suspended Sediment or turbidity measurements are higher than reference condition.**
Models	**Predictive models indicate no impairment.**	**Predictive models indicate moderate impairment.**	**Predictive models indicate severe impairment.**

3 **Note: Dissolved Oxygen requires consideration of diel changes and the time of year (e.g., presence or absence of critical life stage); pH and temperature standards reflect deviations from natural. For pH and temperature a 110% exceedence of standards means a 10% exceedence of the maximum allowable change from natural.**

4 **Note: A large data set is 4 times/year for 3 years.**

5 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, or expert opinion or modeling.**

Table 9. Aquatic Life/Fisheries Use Support Decision Table for Streams *(Cont.)*

DATA CATEGORY (Streams) **2. HABITAT**	**UNIMPAIRED OR LEAST IMPAIRED**	**MODERATELY IMPAIRED**	**SEVERELY IMPAIRED**
6 7 ***Habitat (e.g., evidence of excessive sediment or dredging)***	**Data indicate that the habitat is similar to reference condition. (channel morphology; substrate composition; bank/riparian structure)**	**Modification of habitat slight to moderate with some evidence of watershed erosion caused by land use activities. Channel modification slight to moderate.**	**Severe habitat alteration by channelization and dredging activities, bank failure or heavy watershed erosion.**
Flow	**Flow regime of the region. Dams built prior to July 1, 1971 are operated in a reasonable manner where impacts to aquatic life habitat are minimized.**	**Comparison to reference condition indicates that flow alterations have an impact on aquatic life habitat.**	**Comparison to reference condition indicates that flow alterations have severely impacted aquatic life habitat.**
Riparian Area	**The stream has riparian vegetation of natural types with minimal short-term impacts.**	**Limited riparian zones because of encroaching land use patterns.**	**Removal of riparian habitat is widespread.**
Stream Reach Survey	**The DEQ Stream Reach Survey score is greater than or equal to 75 percent of reference condition or the total possible score.**	**DEQ Stream Reach Survey score is between 25-75 percent of reference condition or of the total possible score.**	**The DEQ Stream Reach Survey score is less than or equal to 25 percent of reference condition or of the total possible score.**
Proper Functioning Condition	**Proper functioning condition**	**Functional- at risk**	**Nonfunctional**
Geomorphology (e.g. pattern, channel cross section, longitudinal profile, pebble count)	**Measurements indicate that the geomorphology is similar to reference condition.**	**Measurements indicate that the stream is moderately unstable.**	**Measurements indicate that the stream is extremely unstable (often Rosgen stream types F, G and D).**

6 **Note: DEQ is using habitat and reference condition to interpret narrative water quality standards that protect aquatic life use.**

7 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.**

Table 9. Aquatic Life/Fisheries Use Support Decision Table for Streams *(Cont.)*

DATA CATEGORY (Streams) **3. BIOLOGY**	**UNIMPAIRED OR LEAST IMPAIRED**	**MODERATELY IMPAIRED**	**SEVERELY IMPAIRED**
Biological Assemblages ***A) Macroinvertebrate*** ***B) Periphyton*** ***C) Fishery*** 8,9,10	**Data indicate functioning, sustainable biological assemblages, none of which have been modified significantly beyond the natural range of the reference condition (greater than 75 percent of reference condition).**	**At least one biological assemblage indicates moderate impairment when compared to reference condition (25-75 percent of reference condition).**	**At least one assemblage indicates severe impairment Data clearly indicate severe modification of the biological community when compared to reference condition (less than 25 percent of reference condition).**
Chlorophyll	**The benthic chlorophyll level is similar to reference condition; or the chlorophyll is no more than 100 mg/m^2.**	**The benthic chlorophyll level is moderately higher than reference condition; or the chlorophyll is greater than 100 and not more than 150 mg/m^2.**	**The benthic chlorophyll level is substantially greater than reference condition; or the chlorophyll is greater than 150 mg/m^2.**
Fish Survey (Population estimates)	**Sustainable (wild) fishery is greater than 75 percent of reference condition; or meets the goals of a DFWP management plan**	**Sustainable (wild) fishery population is 25-75 percent of reference condition; or the goals of a DFWP management plan are not met due to anthropogenic impacts to water quality.**	**The stream does not support a sustainable (wild) fishery due to anthropogenic impacts to water quality.**
Wildlife	**Associated wildlife populations are minimally impacted.**	**Associated wildlife populations have been moderately impacted.**	**Associated wildlife populations have been severely impacted.**

8 **Note: DEQ will work with DFWP to further develop fishery guidelines.**

9 **Note: Associated wildlife includes amphibians, waterfowl, and furbearers.**

10 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, or expert opinion or modeling.**

Table 10. Aquatic Life Use Support Tables for Lakes and Wetlands (Fish, Aquatic Life, and Wildlife)

DATA CATEGORY (Lakes and Wetlands) **1. CHEMISTRY**	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
1(a) TOXICITY	**Bioassay test indicates that there is no acute or chronic toxicity**	**Bioassay test indicates chronic toxicity**	**Bioassay test indicates acute toxicity**
1(b) CHEMICAL (TOXICANTS - trace metals, ammonia, chlorine, organics, pesticides, etc.) [11] [12] ***Acute and Chronic Water Quality Standards***	**For any pollutant: No exceedence of acute or chronic standard values; and/or the chronic standards are exceeded by less than 10% no more than once for one parameter in a three year period when measurements were taken at least four times/year.**	**For any pollutant: Acute standards are exceeded by less than or equal to 25%; or chronic standards are exceeded by less than or equal to 50%; and/or water quality standards are exceeded in no more than 10% of the measurements from a large data set.**	**For any pollutant: Acute standards are exceeded by more than 25%; or chronic standards are exceeded by more than 50%; and/or water quality standards are exceeded in more than 10% of the measurements from a large data set.**
Sediment Chemistry (Toxicants, e.g., metals, Organic compounds)	**Sediment trace metal concentrations are similar to reference condition.**	**Sediment trace metal concentrations are moderately higher than reference condition.**	**Sediment trace metal concentrations are substantially higher than reference condition.**
Trophic Status	**Trophic status is similar to reference condition**	**Trophic status exceeds reference condition.**	**Trophic status is hyper-eutrophic.**
Models	**Predictive models do not indicate impairment**	**Predictive models indicate moderate impairment.**	**Predictive models indicate severe impairment**
Bioaccumulation (e.g., fish tissue, etc.)	**Pollutants are not bioaccumulated above background levels.**	**Bioaccumulation of pollutant is slightly above background levels.**	**Bioaccumulation of pollutant is substantially higher than background levels.**

11 **Note: When possible, use the average concentration of samples collected over a 96 hour period and compare directly to chronic standard values; one data point (n=1) is sufficient if no other data were collected within 96 hours.**

12 **Note: Reference Conditions may be determined through a combination of the following:**

Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.

Table 10. Aquatic Life Use Support Tables for Lakes and Wetlands (Fish, Aquatic Life, and Wildlife) (*cont*.)

DATA CATEGORY (Lakes and Wetlands)	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
1(c) <u>CHEMISTRY</u> (nutrients, dissolved oxygen, pH, TSS, turbidity and temperature) 13, 14, 15 ***Water Quality Standards***	**Water quality standard values are not exceeded for any pollutant; or the measurements are similar to reference condition; and/or for one parameter only the water quality standard was exceeded randomly by less than 10% in less than or equal to 10% of the measurements from a large data set.**	**Water quality standard values are exceeded by less than 50%; Parameters that do not have numeric values will be compared to reference condition; and/or the water quality standards are exceeded for 11 to 25% of the measurements from a large data set.**	**Water quality standard values are exceeded by greater than 50%; Parameters that do not have numeric values will be compared to reference condition; and/or the water quality standards are exceeded for greater than 25% of the measurements from a large data set.**
Nutrients	**Nutrient concentrations are similar to reference condition.**	**Nutrient concentrations are moderately higher than reference condition.**	**Nutrient concentrations are substantially higher than reference condition.**
Models	**Predictive models do not indicate impairment**	**Predictive models indicate moderate impairment.**	**Predictive models indicate severe impairment.**

13 **Note: Dissolved Oxygen requires consideration of diel changes and the time of year (e.g., presence or absence of critical life stage). pH and Temperature standards reflect deviations from natural. For pH and temperature a 10% exceedence of standards means a 10% exceedence of the maximum allowable change from natural.**

14 **Note: A large data set is 4 times/year for 3 years.**

15 **Note: : Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.**

Table 10. Aquatic Life Use Support Tables for Lakes and Wetlands (Fish, Aquatic Life, and Wildlife) (*cont*.)

DATA CATEGORY (Lakes and Wetlands) 2. HABITAT	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
Habitat 16 17	**Data indicate that the habitat is similar to reference condition.**	**Modification of habitat includes moderate evidence of impacts to the shoreline or littoral zone such as erosion or removal of native riparian or littoral vegetation.**	**Severe habitat alteration by shoreline erosion (bank failure) or removal of riparian or littoral vegetation .**
Sediment	**No significant deposition of sediments beyond reference condition.**	**Moderate levels of sediment are being transported to the lake from the watershed.**	**Excessive levels of sediment are being transported to the lake from the watershed.**
Water Level	**Water level fluctuation is similar to reference condition; or dams are operated in a reasonable manner where negative impacts to aquatic life are minimized.**	**Water level fluctuations have moderate impact on aquatic life habitat; or dam operations could be improved to benefit all designated beneficial uses, including aquatic life.**	**Water level fluctuations have severely impacted aquatic life habitat; or dams are not operated to support all designated beneficial uses, including aquatic life.**
Proper Functioning Condition or HGM Functional Assessment	**Proper Functioning Condition**	**Functional- at risk**	**Nonfunctional**
Habitat Assessment	**Habitat assessment indicate none/slight impairment**	**Habitat Assessment indicates moderate impairment**	**Habitat assessment indicates severe impairment.**

16 **Note: DEQ is using habitat and reference condition to interpret narrative water quality standards that protect aquatic life use.**

17 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.**

Table 10. Aquatic Life Use Support Tables for Lakes and Wetlands (Fish, Aquatic Life, and Wildlife) (*cont*.)

DATA CATEGORY (Lakes and Wetlands) 3. **BIOLOGY**	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
Biological Assemblages ***- Fish*** ***- periphyton*** ***-phytoplankton*** ***- macroinvertebrates*** ***- zooplankton*** 18,19,20	**Data indicate functioning, sustainable biological assemblages, none of which have been modified significantly beyond the natural range of the reference condition (greater than 75 percent of reference condition remaining).**	**At least one biological assemblage indicates moderate impairment (25-75 percent of reference condition remaining).**	**At least one assemblage indicates severe impairment (less than 25 percent of reference condition remaining).**
Chlorophyll	**The chlorophyll levels are similar to reference condition.**	**The chlorophyll level is moderately higher than reference condition.**	**The chlorophyll level is substantially greater than reference condition.**
Paleolimnology	**Sediment core samples do not indicate impairments.**	**Sediment core samples show moderate changes in salinity, trophic status, sedimentation rates or alkalinity as a result of anthropogenic impacts.**	**Sediment core samples show excessive changes in salinity, trophic status, sedimentation rates or alkalinity as a result of anthropogenic impacts.**
Fishery Survey	**Fishery is similar to reference condition; or meets DFWP management goals.**	**Fish population is moderately impaired; or although there is a fishery, the DFWP management goals are not met due to anthropogenic impacts to water quality.**	**The lake does not support a fishery population due to anthropogenic impacts to water quality.**
Wildlife	**Impacts to associated wildlife populations are minimal.**	**Impacts to wildlife populations have been moderate.**	**Impacts to associated wildlife populations have been severe.**

18 **Note: DEQ will work with DFWP to further develop fishery guidelines.**

19 **Note: Associated wildlife includes amphibians, waterfowl, and furbearers.**

20 **Note: Reference Conditions may be determined through a combination of the following: Comparison of the water body to a least impaired stream, historical data showing previous condition of the water body, conditions in a less-impaired upstream or downstream segment of the same water body, conditions in a paired watershed, a review of pertinent literature, expert opinion or modeling.**

Table 11. Drinking Water Beneficial Use Support Decision Table

BENEFICIAL USE	**UNIMPAIRED OR** *LEAST IMPAIRED*	**MODERATELY IMPAIRED**	**SEVERELY IMPAIRED**
Drinking Water	**No human health standard exceedences.**	**Not Applicable**	**Exceedence of human health standards.**

Note: Assume drinking water will be treated prior to consumption (e.g., chlorination or filtration)

Note: For this guidance document, exceedence is defined as a violation of Montana's water quality standards.

Table 12. Contact Recreation Beneficial Use Support Decision Table

DATA OR INFORMATION	NOT/LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
Algae, Toxins etc.	**There are no excessive blue-green algae blooms, turbidity, odor, toxins, etc.; similar to reference condition.**	**Excessive blue-green algae blooms turbidity, odor, toxins, etc. moderately restrict swimming or boating.**	**Swimming or boating severely inhibited by excessive blue-green algae blooms, pathogens, turbidity, odor, toxins, etc.**
Chlorophyll	**The benthic chlorophyll level is similar to reference condition; or the chlorophyll is no more than 50 mg/m^2.**	**The benthic chlorophyll level moderately exceeds reference condition; or the chlorophyll is more than 50 mg/m^2 but not more than 100 mg/m^2.**	**The benthic chlorophyll level greatly exceeds reference condition; or the chlorophyll is more than 100 mg/m^2.**
Bathing Closure	**No bathing area closures.**	**Beach closures.**	**Lakewide bathing closures.**
Fecal Coliforms	**Fewer than 200 colonies fecal coliform per 100 ml for 90 percent of the samples collected in a 30-day period; or similar to reference condition.**	**No more than 10 percent of samples exceed 400 colonies fecal coliform per 100 ml during any 30-day period and probable sources are identified.**	**More than 10 percent of samples exceed 400 colonies fecal coliform per 100 ml in a 30 day period and probable sources are identified.**
De-watering	**Water quantity is similar to reference condition; dams are operated in a reasonable manner so recreation impairment is minimized.**	**Water body is partially dewatered and discourages recreation.**	**Water body is dewatered and can not be used for recreation.**

Table 13. Agriculture Supply Beneficial Use Support Decision Tables

DATA AND INFORMATION	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
Salinity (general)	**The water quality is similar to reference condition or does not restrict agricultural use.**	**Water salinity exceeds reference condition and discourages agricultural use.**	**Water salinity exceeds reference condition and can not be used for agriculture.**
Livestock (salinity)	**The water salinity is satisfactory for livestock and poultry; the specific conductance is less than 5000 uS/cm.**	**The water salinity limits use by livestock and poultry; Specific conductance is between 5000 and 15,000 uS/cm.**	**Livestock and poultry are unable to use the water due to high salinity; specific conductance is more than 15,000 uS/cm.**
Irrigation (salinity)	**The water is satisfactory for irrigation. The sodium adsorption Ratios are less than 4; or water may only impact sensitive crops. Specific conductance is less than 1500 uS/cm.**	**Irrigation water may have an adverse effect on soils. Sodium adsorption ratios are between 4 and 18; or water may have an adverse effect on crops and may require careful management. Specific conductivity is 1500-7500 uS/cm.**	**Irrigation water is likely to have an adverse effect on soils. Sodium adsorption ratios greater than 18; or water has an adverse effect on crops. Specific conductance is more than 7500 uS/cm.**
Toxicants	**Trace metal concentrations are similar to reference condition.**	**Trace metal concentrations and other toxicant concentrations exceed reference condition; however, the water can still be used for agriculture.**	**The water cannot be used for agriculture due to elevated trace metals or other toxicants.**

Table 14. Industry Supply Beneficial Use Support Decision Tables

DATA AND INFORMATION	UNIMPAIRED OR LEAST IMPAIRED	MODERATELY IMPAIRED	SEVERELY IMPAIRED
Salinity	**Salinity is similar to reference condition and/or the salinity does not restrict use by industry.**	**Salinity is above reference condition and discourages water use by industry.**	**Salinity is above reference condition and water cannot be used by industry.**
Turbidity	**Turbidity is similar to reference condition and/or the turbidity does not restrict use by industry.**	**Turbidity is above reference condition and discourages use by industry.**	**Turbidity is above reference condition and water cannot be used by industry.**
De-watering	**Water quantity is similar to reference condition.**	**Water body is partially de-watered and discourages use by industry.**	**Water body is de-watered and can not be used by industry.**

APPENDIX B
Waterbody Reassessment Schedule

The 1997 amendments to Montana Water quality law directed DEQ to reassess all of the waterbodies included on the existing 303(d) List and to remove from the List "any waterbody that lacks sufficient credible data to support its listing." The 1997 law also requires that,

> *If the department removes a water body because there is a lack of sufficient credible data to support the listing, the department shall monitor and assess that water body during the next field season or as soon as possible thereafter to determine whether it is a threatened water body or an impaired water body. [75-5-702(6) MCA]*

The assessments conducted during the current reassessment cycle have identified about 480 waterbodies for removal from the 303(d) List because there is not sufficient credible data to support their listing (see Chapter 3, Table 3-E). The effort required to gather sufficient credible data to make valid beneficial use support determinations for this number of waterbody segments is far beyond what can be accomplished in a single field season with the resources available to the DEQ Monitoring and Data Management Bureau. For this reason, the Bureau developed and published as Appendix B of the Draft 303(d) List a reassessment schedule for the 2000 and 2001 field seasons. This appendix warned that the proposed schedule was "very tentative," and subject to revision in response to a number of factors which could not be anticipated with any certainty.

This warning was fully justified. Drought conditions, fire closures, and substantial work load shifts caused major changes in the draft schedule. However, substantial reassessment progress was made. Reassessments were completed for 32 waters identified on the Draft 303(d) List as lacking sufficient credible data to support beneficial use determinations. Three of these waters were found to fully support all applicable beneficial uses while the remainder were found to be impaired for one or more uses (See Table B-1). Field monitoring was done on an additional 33 waters from the draft reassessment listing. Samples collected have been sent to contract laboratories for analysis, and assessments of these waters will be completed once the results are received (See Table B-2).

The final table in this appendix (Table B-3) lists the waterbody segments tentatively identified for reassessment during the 2001 field season. As before, this schedule is preliminary and subject to change by a number of factors. Because it is expected that a new reassessment schedule will be part of the 2002 303(d) List, no attempt has been made to project a schedule beyond the 2001 field season.

Monitoring to support TMDL plan development will be a major factor affecting efforts to accomplish reassessment monitoring. Often data sufficient to identify a waterbody as being impaired will not be adequate to support the development of a TMDL plan. The work of collecting the additional data required for planning will sometimes be done by other agencies or by outside contractors, but some of it will be conducted by the Monitoring and Data Management Bureau. Because meeting commitments for TMDL plan completion will depend on the timely collection of the necessary data, TMDL work generally will take priority over reassessment monitoring.

Table B - 1. Reassessments Completed 2000 Field Season

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units	Use Support						
						Aqua Life	Cold Fish	Warm Fish	Drinking	Swim (Rec)	Agriculture	Industry
UPPER MISSOURI BASIN												
BEAVERHEAD	FRENCH CREEK from headwaters to mouth (Rattlesnake Cr-Beaverhead R)	10020002	MT41B002_100	6.5	Mi	N	N		X	X	X	X
BIG HOLE	ROCHESTER CREEK from headwaters to mouth T3S R7W	10020004	MT41D002_160	15.7	Mi	X	X		N	X	X	X
BIG HOLE	DOOLITTLE CR tributary to the Big Hole R T1S, R14W	10020004	MT41D004_220	4.9	Mi	N	N		X	X	X	X
UPPER MISSOURI	HELLGATE GULCH from headwaters to the mouth (Canyon Ferry Res)	10030101	MT41I002_090	11.5	Mi	N	N		N	X	F	F
UPPER MISSOURI	HOLTER LAKE (Missouri R Mainstem Reservoir.)	10030101	MT41I007_020	5500	Ac	F	F		X	P	X	F
SMITH	SMITH RIVER NORTH FORK from headwaters to Lake Sutherlin	10030103	MT41J002_012	13.5	Mi	F	F		F	F	F	F
TETON	PRIEST BUTTE LAKE	10030205	MT41O004_020	300	Ac	N		N	X	X	X	X
LOWER MISSOURI BASIN												
JUDITH	WARM SPRING CREEK from 5 miles above mouth to mouth (Judith R)	10040103	MT41S002_030	5	Mi	P		P		X		
FORT PECK RESERVOIR	ARMELLS CREEK, Headwaters to Deer Cr	10040104	MT40E002_022	13.4	Mi	N		N		X		
FORT PECK RESERVOIR	RUBY CREEK, 1 mi below Zortman (Alder & Ruby Gulch junction) to mouth at CK Cr.	10040104	MT40E002_060	4.2	Mi	N		X		X		
BOX ELDER	CHICAGO GULCH, Headwaters to the mouth (Fords Cr)	10040204	MT40B002_020	3.1	Mi	P		X		X		
MIDDLE MILK	MILK RIVER, from Fresno Dam to Whitewater Cr	10050004	MT40J001_010	270.4	Mi	X		X	N	X	F	F
MIDDLE MILK	MILK RIVER, Whitewater Cr to Beaver Cr	10050004	MT40J001_020	38.2	Mi	X		X	N	X	F	F
REDWATER	REDWATER RIVER from headwaters to Hell Cr.	10060002	MT40P001_011	50.5	Mi	F		F		F		
REDWATER	REDWATER RIVER from Buffalo Springs Cr. to Pasture Cr.	10060002	MT40P001_013	48.9	Mi	F		F		F		
COLUMBIA BASIN												
UPPER KOOTENAI	LIBBY CREEK, from the highway 2 bridge to the mouth (Kootenai R)	17010101	MT76D002_062	15.2	Mi	P	P		X	X	F	F
FLINT-ROCK	UPPER WILLOW CREEK from headwaters to the mouth (Rock Cr)	17010202	MT76E002_040	19.4	Mi	P	P		X	P	F	F
FLINT-ROCK	SOUTH FORK LOWER WILLOW CREEK, Headwaters to mouth (Flint Cr)	17010202	MT76E003_050	12.5	Mi	N	N		N	X	F	F
FLINT-ROCK	WALLACE CREEK Headwaters to mouth (Clark Fork R)	17010202	MT76E004_010	3.8	Mi	P	P		F	X	F	F
MIDDLE CLARK FORK	TAMARACK CREEK, Headwaters to the mouth (Clark Fork R)	17010204	MT76M002_010	8.7	Mi	X	P		X	X	X	X
MIDDLE CLARK FORK	TROUT CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_050	14.7	Mi	X	P		X	X	F	F
MIDDLE CLARK FORK	FISH CREEK from West and South Forks to the mouth (Clark Fork R)	17010204	MT76M002_060	9.1	Mi	F	P		X	F	F	F
MIDDLE CLARK FORK	PETTY CREEK from headwaters to the mouth (Clark Fork R)	17010204	MT76M002_090	11.6	Mi	P	P		X	P	X	X
BITTERROOT	LAIRD CREEK tributary to East Fork Bitterroot T1N, R20	17010205	MT76H002_070	5.7	Mi	P	P		X	X	X	X
BITTERROOT	GILBERT CREEK a tributary to Laird Cr, East Fork Bitterroot R T1N, R20W	17010205	MT76H002_080	2.3	Mi	P	P		X	X	X	X
BITTERROOT	McCLAIN CREEK from headwaters to mouth (Bitterroot R)	17010205	MT76H004_150	5.3	Mi	P	P		X	X	F	F
NORTH FORK FLATHEAD	SOUTH FORK COAL CREEK from headwaters to mouth (CoaL Cr)	17010206	MT76Q002_040	8.1	Mi	P	P		X	F	F	F
NORTH FORK FLATHEAD	BIG CREEK Tributary to the North Fork of the Flathead R	17010206	MT76Q002_050	15.7	Mi	P	P		X	F	F	F
MIDDLE FORK FLATHEAD	GRANITE CREEK, Confluence of Dodge & Challenge Cr to mouth (M Fk Flathead)	17010207	MT76I002_010	8.2	Mi	P	P		X	X	X	X
FLATHEAD LAKE	FISH CREEK from headwaters to mouth (Ashley Lake)	17010208	MT76O002_050	2.4	Mi	P	P		X	X	F	F
SWAN	GOAT CREEK from headwaters to Squeezer Cr.	17010211	MT76K003_031	9	Mi	P	P		X	F	F	F
LOWER CLARK FORK	MARTEN CREEK from headwaters to the mouth (Noxon Reservoir)	17010213	MT76N003_090	6.7	Mi	P	P		X	X	F	F

USE SUPPORT: F = FULL SUPPORT N = NOT SUPPORTING P = PARTIAL SUPPORT X = NOT ASSESSED

Table B - 2. Reassessments Pending Nov. 2000

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units
UPPER MISSOURI BASIN					
RUBY	WISCONSIN CREEK from headwaters to mouth (Leland Slough)	10020003	MT41C002_010	13.8	Mi
BIG HOLE	BIRCH CREEK headwaters to the National Forest Boundary	10020004	MT41D002_090	12.8	Mi
BIG HOLE	ELKHORN CREEK, Headwaters to mouth (Jacobson Cr-Wise R)	10020004	MT41D003_220	7.2	Mi
BIG HOLE	ROCK CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_120	20.5	Mi
BIG HOLE	LITTLE LAKE CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_130	17.6	Mi
BIG HOLE	MINER CREEK from headwaters to mouth (Big Hole R)	10020004	MT41D004_140	18.5	Mi
JEFFERSON	LITTLE PIPESTONE CREEK, Headwaters to mouth (Big Pipestone Cr)	10020005	MT41G002_040	16.2	Mi
JEFFERSON	DRY BOULDER CREEK from headwaters to mouth (Jefferson R)	10020005	MT41G002_120	14.7	Mi
GALLATIN	GALLATIN RIVER from Spanish Cr to Montana State border	10020008	MT41H001_020	52	Mi
UPPER MISSOURI	NORTH FK WARM SPRINGS CREEK, Headwaters to mouth (Warmsprings Cr - Prickly Pear)	10030101	MT41I006_180	3.5	Mi
UPPER MO-DEARBORN	MIDDLE FORK OF THE DEARBORN RIVER, Headwaters to the mouth (Dearborn R)	10030102	MT41Q003_020	13.5	Mi
UPPER MO-DEARBORN	SOUTH FORK OF THE DEARBORN RIVER, Headwaters to the mouth (Dearborn R)	10030102	MT41Q003_030	15.8	Mi
UPPER MO-DEARBORN	FLAT CREEK from Henry Cr to the mouth (Dearborn R)	10030102	MT41Q003_040	15.5	Mi
LOWER MISSOURI BASIN					
JUDITH	JUDITH RIVER from Ross Fork to Big Spring Cr	10040103	MT41S001_020	15.9	Mi
JUDITH	CASINO CREEK, Headwaters to mouth (Big Spring Cr)	10040103	MT41S004_040	11.6	Mi
LOWER MUSSELSHELL	LODGEPOLE CREEK, North & Middle Fks confluence to the mouth (Musselshell)	10040205	MT40C004_020	27	Mi
BIG SANDY	BIG SANDY CREEK, Lonesome Lake Coulee to the mouth (Milk R)	10050005	MT40H001_010	37.1	Mi
YELLOWSTONE BASIN					
YELLOWSTONE HEAD	BEAR CREEK, 1/2 mi below Jardine Mine to mouth (Yellowstone R)	10070001	MT43B002_021	3.1	Mi
UPPER YELLOWSTONE	BILLMAN CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_050	13.2	Mi
UPPER YELLOWSTONE	TOM MINER CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_060	13.9	Mi
UPPER YELLOWSTONE	MILL CREEK, Absaroka-Beartooth Wilderness boundary to NF boundary	10070002	MT43B004_072	12	Mi
UPPER YELLOWSTONE	PINE CREEK, Absaroka-Beartooth Wilderness boundary to 1.6 miles above the mouth	10070002	MT43B004_082	3.3	Mi
UPPER YELLOWSTONE	BIG CREEK from end of the road to NF Boundary	10070002	MT43B004_112	3.1	Mi
UPPER YELLOWSTONE	MOL HERON CREEK, Yellowstone National Park boundary to mouth (Yellowstone R)	10070002	MT43B004_120	8.9	Mi
UPPER YELLOWSTONE	BOULDER RIVER from NF boundary to 5 mi above the mouth (Yellowstone R)	10070002	MT43B004_132	27.8	Mi
UPPER YELLOWSTONE	BOULDER RIVER from Box Canyon GS to NFBoundary	10070002	MT43B004_133	24.3	Mi
UPPER YELLOWSTONE	BOULDER RIVER from headwaters to Box Canyon Guard Station	10070002	MT43B004_134	8.2	Mi
SHIELDS	POTTER CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_010	24.6	Mi
SHIELDS	ANTELOPE CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_020	10	Mi
SHIELDS	COTTONWOOD CREEK from headwaters to eight miles above the mouth	10070003	MT43A002_032	13.1	Mi
SHIELDS	ROCK CREEK from headwaters to the mouth (Shields R)	10070003	MT43A002_050	21.2	Mi
O'FALLON	O'FALLON CREEK from 20 miles above the mouth to 40 miles above the mouth	10100005	MT42L001_032	20	Mi
O'FALLON	O'FALLON CREEK from headwaters to 40 miles above the mouth.	10100005	MT42L001_033	78.6	Mi

Table B - 3. Reassessments Scheduled for 2001

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units
UPPER MISSOURI BASIN					
RUBY	INDIAN CREEK from headwaters to mouth (Mill Cr-Ruby R)	10020003	MT41C002_030	11.3	Mi
RUBY	COAL CREEK from headwaters to mouth (Middle Fork Ruby R)	10020003	MT41C003_020	8.3	Mi
RUBY	COTTONWOOD CREEK from headwaters to mouth (Ruby R)	10020003	MT41C003_030	10.4	Mi
RUBY	POISON CREEK, Headwaters to mouth (Ruby R) T11S, R3W	10020003	MT41C003_110	5.3	Mi
RUBY	BURNT CREEK, Headwaters to mouth (Ruby R) T10S, R3W	10020003	MT41C003_130	5	Mi
GALLATIN	SOUTH COTTONWOOD CREEK, Headwaters to the Middle Cr Assoc Ditch diversion	10020008	MT41H002_032	11.1	Mi
UPPER MISSOURI	SEVENMILE CREEK from headwaters to the mouth (Tenmile Cr)	10030101	MT41I006_160	7.8	Mi
UPPER MISSOURI	JACKSON CREEK, Headwaters to mouth (McClellan Cr-Prickly Pear Cr)	10030101	MT41I006_190	2.5	Mi
UPPER MISSOURI	JENNIES FORK from headwaters to mouth (Silver Cr-Missouri R)	10030101	MT41I006_210	1.2	Mi
UPPER MISSOURI	SKELLY GULCH tributary of Greenhorn Cr-Sevenmile Cr T10N R5W Sec 2	10030101	MT41I006_220	7.7	Mi
SUN	GIBSON RESERVOIR	10030104	MT41K004_010	1281.9	Ac
SUN	WILLOW CREEK RESERVOIR	10030104	MT41K004_020	1355.6	Ac
LOWER MISSOURI BASIN					
TETON	WILLOW CREEK from headwaters to the mouth (Deep Cr)	10030205	MT41O002_010	18.9	Mi
TETON	DEEP CREEK from Willow Cr to the mouth (Teton R)	10030205	MT41O002_020	9	Mi
TETON	BLACKLEAF CREEK from headwaters to the mouth (Muddy Cr)	10030205	MT41O002_040	27.1	Mi
TETON	TETON SPRING CREEK from the city of Choteau to mouth (Teton R)	10030205	MT41O002_060	4.5	Mi
TETON	CLARK FORK OF MUDDY CREEK, Headwaters to mouth (Muddy Cr)	10030205	MT41O002_080	7.7	Mi
TETON	BYNUM RESERVOIR	10030205	MT41O003_010	4120	Ac
TETON	EUREKA RESERVOIR	10030205	MT41O003_020	400.3	Ac
JUDITH	COTTONWOOD CREEK from county road bridge at T14N R18E Sec18 to mouth (Big Spring Cr)	10040103	MT41S004_052	13.3	Mi
UPPER MUSSELSHELL	NORTH FORK MUSSELSHELL RIVER, Headwaters to confluence with the South Fk	10040201	MT40A002_010	34.4	Mi
UPPER MUSSELSHELL	MILL CREEK, Headwaters to mouth (North Fork Musselshell R)	10040201	MT40A002_040	4.8	Mi
UPPER MUSSELSHELL	HALF BREED CREEK, Headwaters to the mouth (Musselshell R)	10040201	MT40A002_090	16.6	Mi
UPPER MUSSELSHELL	DEADMANS BASIN RESERVOIR T7N R18E Sec 22-27	10040201	MT40A005_010	1903	Ac
UPPER MUSSELSHELL	LEBO LAKE T6N R13E SEC 1	10040201	MT40A005_020	314.1	Ac
UPPER MUSSELSHELL	MARTINSDALE RESERVOIR T8N R12E	10040201	MT40A005_030	984.9	Ac
MIDDLE MUSSELSHELL	NORTH WILLOW CREEK, Headwaters to the mouth (Musselshell R)	10040202	MT40C002_010	105	Mi
LOWER MUSSELSHELL	CALF CREEK, Headwaters to the mouth (Musselshell R)	10040205	MT40C004_010	64.3	Mi
LOWER MUSSELSHELL	BLOOD CREEK, Headwaters to mouth (Musselshell R)	10040205	MT40C004_030	59	Mi

Table B - 3. Reassessments Scheduled for 2001

WATERSHED	SEGMENT NAME - Description	HUC #	ID Number	SIZE	Units
YELLOWSTONE BASIN					
YELLOWSTONE HEAD	YELLOWSTONE RIVER from the Montana border to Reese Cr.	10070001	MT43B001_010	14.5	Mi
YELLOWSTONE HEAD	BEAR CREEK, Headwaters to 1/2 mi below the Jardine Mine	10070001	MT43B002_022	8	Mi
YELLOWSTONE HEAD	SODA BUTTE CREEK from headwaters to the McLaren Tailings.	10070001	MT43B002_032	1.1	Mi
UPPER YELLOWSTONE	OTTER CREEK from headwaters to 2 mi downstream of Highway 191 bridge	10070002	MT43B004_012	25.6	Mi
UPPER YELLOWSTONE	BIG TIMBER CREEK from headwaters to Swamp Cr.	10070002	MT43B004_022	25.7	Mi
UPPER YELLOWSTONE	LOWER DEER CREEK from headwaters to 4 mi above the mouth	10070002	MT43B004_032	22.2	Mi
UPPER YELLOWSTONE	UPPER DEER CREEK from headwaters to 6.5 miles above the mouth	10070002	MT43B004_042	17.3	Mi
UPPER YELLOWSTONE	SWEET GRASS CREEK from headwaters to the mouth (Yellowstone R)	10070002	MT43B004_150	77.3	Mi
STILLWATER	LODGEPOLE CREEK from headwaters to the mouth (Castle Cr)	10070005	MT43C002_010	5.9	Mi
STILLWATER	BAD CANYON CREEK from headwaters to the mouth (Stillwater R)	10070005	MT43C002_020	10.4	Mi
STILLWATER	CASTLE CREEK from headwaters to the mouth (West Fk Stillwater R)	10070005	MT43C002_030	10.5	Mi
STILLWATER	GROVE CREEK from headwaters to five miles above the mouth	10070005	MT43C002_042	6.9	Mi
STILLWATER	FISHTAIL CREEK from headwaters to the mouth (West Rosebud Cr)	10070005	MT43C002_050	13.9	Mi
STILLWATER	EAST ROSEBUD CREEK, Absaroka-Beartooth Wilderness Boundary to mouth (Rosebud Cr)	10070005	MT43C002_060	19.9	Mi
UPPER TONGUE	TONGUE RIVER from the Wyoming border to Tongue R Reservoir	10090101	MT42B001_010	4.7	Mi
UPPER TONGUE	TONGUE RIVER from Tongue R Dam to Hanging Woman Cr	10090101	MT42B001_020	34.5	Mi
UPPER TONGUE	HANGING WOMAN CREEK from the Wyoming border to Stroud Cr	10090101	MT42B002_032	28.7	Mi
LOWER TONGUE	TONGUE RIVER from Hanging Woman Cr to thediversion dam just above Pumpkin Cr	10090102	MT42C001_012	147.9	Mi
LOWER TONGUE	PUMPKIN CREEK from headwaters to the mouth (Tongue R)	10090102	MT42C002_060	171.9	Mi
O'FALLON	PENNEL CREEK from headwaters to the mouth (O'Fallon Cr)	10100005	MT42L001_010	21.5	Mi
O'FALLON	SANDSTONE CREEK from headwaters to the mouth (O'Fallon Cr)	10100005	MT42L001_020	72.1	Mi
O'FALLON	O'FALLON CREEK from the mouth (Yellowstone R) 20 miles upstream	10100005	MT42L001_031	20	Mi
COLUMBIA BASIN					
BLACKFOOT	MARCUM CREEK from headwaters to mouth T14N R11W SEC 14	17010203	MT76F002_050	1.4	Mi
BLACKFOOT	SANDBAR CREEK from forks to mouth (Willow Cr)	17010203	MT76F002_060	1.6	Mi
BLACKFOOT	ARRASTRA CREEK from headwaters to mouth (Blackfoot R)	17010203	MT76F002_070	12.6	Mi
MIDDLE CLARK FORK	TWELVEMILE CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_020	13.4	Mi
MIDDLE CLARK FORK	SILVER CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_030	4.9	Mi
MIDDLE CLARK FORK	BIG CREEK from the East and Middle Forks to the mouth (ST. Regis R)	17010204	MT76M003_040	3.4	Mi
MIDDLE CLARK FORK	DEER CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_050	8.5	Mi
MIDDLE CLARK FORK	WARD CREEK from headwaters to the mouth (ST. Regis R)	17010204	MT76M003_060	7.6	Mi
MIDDLE CLARK FORK	LITTLE JOE CREEK from North Fork to the mouth (ST. Regis R)	17010204	MT76M003_070	3.1	Mi
MIDDLE CLARK FORK	NORTH FORK LITTLE JOE CREEK, Headwaters to the mouth (Little Joe Cr)	17010204	MT76M003_080	10.7	Mi
SWAN	LION CREEK from headwaters to mouth (Swan R)	17010211	MT76K003_050	14.6	Mi
SWAN	SQUEEZER CREEK from headwaters to mouth (Goat Cr-Swan R)	17010211	MT76K003_070	9	Mi