



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 10
1200 Sixth Avenue
Seattle, WA 98101

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Reply To
Attn Of: OW-134

MAY - 1 2000

RECEIVED

David E. Mabe
State Water Program Administrator
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706

MAY - 8 2000

DIVISION OF ENVIRONMENTAL QUALITY
STATE WATER QUALITY PROGRAMS

Dear Mr. Mabe:

The U.S. Environmental Protection Agency (EPA) has completed its review of the Idaho Department of Environmental Quality's (IDEQ) 1998 Section (§) 303(d) List and other supporting documentation and information. Based on this review, EPA has determined that IDEQ's 1998 list of water quality limited segments is largely complete and approvable. However, the list does not include certain water body segment/pollutant pairings required to be listed pursuant to § 303(d) and EPA regulations. Therefore, by this order, EPA hereby partially approves IDEQ's 1998 § 303(d) List. EPA approves IDEQ's decision to include each of the water body/pollutant listings identified by the State in its list, and disapproves the State's decision not to include certain additional waters/pollutant pairings.

The enclosure describes the statutory and regulatory requirements for developing § 303(d) lists, summarizes the rationale behind EPA's decision, and provides EPA's review of Idaho's compliance with each requirement. In addition, the enclosure identifies 136 waters we believe were inappropriately excluded from the State's 1998 list. Of these, temperature data available to the State indicates that applicable temperature criteria were exceeded for 134 waters. Two (2) waters included in Idaho's 1996 list were not included on the 1998 list, and EPA believes there is not an adequate basis for removing them. We will propose to add these waters to the Idaho list later this week.

EPA appreciates the substantial effort IDEQ has committed to the ongoing development of a biological monitoring and assessment process for use in the § 303(d) listing process. We fully support such a decision making process and look forward to continuing to work with you in its development.

If you have any questions or would like to discuss our decision, please do not hesitate to contact Paula VanHaagen at (206) 553-2857 or Leigh Woodruff at (208) 378-5774.

Sincerely,

Randall F. Smith, Director
Office of Water

Enclosure

USEPA Analysis - Idaho 1998 §303(d) List

I STATUTORY AND REGULATORY BACKGROUND

A Identification of WQLSs for Inclusion on Section 303(d) List.

Section (§) 303(d)(1) of the Clean Water Act (Act) directs States to identify those waters within its jurisdiction for which effluent limitations required by § 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The § 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of § 303(d).

EPA regulations (40 CFR 130.7(b)(1)) provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority.

B Consideration of Existing and Readily Available Water Quality-Related Data and Information.

In developing § 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters:

(1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent § 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any § 319 nonpoint assessment submitted to EPA (40 CFR 130.7(b)(5)).

In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions (USEPA, 1991) describes categories of water quality-related data and information that may be existing and readily available. While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) require States to include as part of their submissions to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and

(3) any other reasonable information requested by the Region.

C Priority Ranking.

EPA regulations also codify and interpret the requirement in § 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require States to prioritize waters on their § 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. As long as these factors are taken into account, the Act provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. (57 FR 33040, 33045 (July 24, 1992); USEPA, 1991).

II ANALYSIS OF IDAHO'S SUBMISSIONS

The following sections summarize Idaho's 1998 listing process and explain EPA's assessment and rationale for recommending approval and disapproval of the Idaho Division of Environmental Quality's (IDEQ) listing actions.

A Background.

The 1998 § 303(d) listing process began in Idaho in August 1996 with the finalization by IDEQ of the Water Body Assessment Guidance - A Stream to Standards Process, a.k.a. WBAG (IDEQ, 1996b). The WBAG is the primary tool used by IDEQ to determine the status of beneficial uses for a particular waterbody, and whether there are significant criteria violations. The WBAG process relies heavily upon biological, physical and habitat data collected through the State's Beneficial Use Reconnaissance (BURP) monitoring program.

Over the next year IDEQ evaluated data collected through the BURP program up to that point (1993 - 1996).

In an effort to solicit additional data for the 1998 § 303(d) list, IDEQ issued a public notice requesting data and information on November 25, 1997, which ran through January 5, 1998, (IDEQ, 1997d). In their request for data and information, IDEQ explained their working rules and assumptions for data to be considered for listing purposes. For example, they explained what they consider "readily available" and "useful" data, what age limitations apply, what QA/QC requirements apply, etc.

Between January and May 1998, IDEQ analyzed data obtained through its data collection efforts and prepared a draft 1998 list. On May 14, 1998, IDEQ published its draft list, which contained 728 waters (IDEQ, 1998b). The proposal called for removing 335 waters which had previously been listed in 1996, adding 122 waters, and changing the boundaries of 61 waters. IDEQ staff met with each Basin Advisory Group during the public comment period to review listing decisions in each basin. In addition, IDEQ staff and management met with EPA staff on May 28, 1998, to review and explain the draft list.

This was the first time Idaho had used the WBAG process for 303(d) listing, and they received numerous comments that additional time was needed to review the process and decisions based on it. Subsequently the comment period for the 1998 list was extended until July 15, 1998.

IDEQ reviewed comments and data received during the data request and public comment periods and prepared a final 303(d) list and related materials and documentation (List Package), which was submitted to EPA on January 4, 1999, (IDEQ, 1999a). The final list contains 731 waters covering 8,227 stream miles. As explained in greater detail below, it is recommended that EPA approve a majority of the listing decisions, and disapprove certain decisions not to list waters.

B Public Participation.

As explained above, Idaho initially solicited public input regarding data for the 303(d) listing process between November 25, 1997, and January 4, 1998. Subsequently they developed the draft list, held a public comment period between May 14, 1998, and July 15, 1998, and met with each Basin Advisory Group to review the proposed list. These efforts clearly meet the intent of 40 CFR § 25, and the specific requirements to provide at least a 30 day advance notification to permit time for public response.

In preparing the final 1998 303(d) list, in their List Package Idaho documented the comments they received and summarized the major issues identified. For each major issue, IDEQ described their response, and how the comment would or would not effect the listing process. In addition, waterbody specific comments were identified in a matrix organized by IDEQ Regional Office. A response and listing decision was developed for each waterbody specific comment.

Documentation of public comments, responses, and decisions relative to the comments fulfills the requirements for responsiveness summaries under 40 CFR § 25.8. Through a combination of responses to general issues (Section 4.2 - 4.16, List Package) and waterbody specific responses (Section 4.17, List Package), we found that the State reasonably responded to all issues raised, with two exceptions. We have concluded that IDEQ's decision to delist all or portions of Wickahoney Creek (17050102) and the Pack River (17010214) is not supported by information in the record. See section II.I.2 for further discussion regarding these waters.

C Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information.

EPA has reviewed the State's submission, and has concluded that the State developed its § 303(d) list substantially in compliance with § 303(d) of the Act and 40 CFR 130.7. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

IDEQ considered all data and information required under § 130.7(b)(5) (see pp. 17-19 of the List Package). In addition, as described above, IDEQ solicited additional data from the public prior to publishing the draft list on May 14, 1998, and considered data submitted during the public comment period for the draft list.

EPA has reviewed IDEQ's description of the data and information it considered, its methodology for identifying waters, and some of the actual data IDEQ considered. EPA concludes that, with the exception of data regarding temperature criteria violations, the State properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR 130.7(b)(5).

In addition, the State provided its rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters.

A substantial number of comments were received without data supporting the comments, or with anecdotal information. IDEQ considered these comments, but did not revise their listing decisions unless data was provided to support their comment, and the data met the age limitations and QA/QC requirements of IDEQ's listing criteria.

As described below, IDEQ failed to adequately assemble and evaluate data regarding temperature criteria violations. As explained in Chapter 4 of the List Package, IDEQ believes that the Idaho temperature criteria are currently inappropriate, and therefore did not list waters for which data indicate violations of applicable temperature criteria. These decisions are inconsistent with 40 CFR 130.7(b)(1), and it is recommended that they be disapproved.

D Listing of Waters Beyond the Requirements of EPA Regulations

EPA recognizes that Idaho included some WQLSs beyond the minimum required by EPA regulations to be included on the § 303(d) list, e.g., waters impaired solely by low flow levels. While EPA is not disapproving the State's list due to the inclusion of such waters, neither the State nor EPA has an obligation under current regulations to develop TMDLs for such waters because the waters are not impaired by a pollutant. States have the discretion under § 303(d), which charges States with the primary responsibility to identify WQLSs for TMDL development, and § 510, which authorizes States to adopt more stringent pollution controls, to include waters on their § 303(d) lists that may not be required to be included by current EPA regulations, and EPA's regulations do not compel the Agency to disapprove the State's list because of the inclusion of such waters. EPA guidance also recognizes that States may take a conservative, environmentally protective approach in identifying waters on their § 303(d) lists (USEPA, 1997d).

E Waters impaired by nonpoint sources.

The State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with § 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA's long-standing interpretation is that § 303(d) applies to waters impacted by point and/or nonpoint sources. This interpretation has been described in EPA guidance, most recently in a 1997 memorandum clarifying certain requirements for 1998 § 303(d) lists (USEPA, 1997d). In addition, this interpretation of § 303(d) is described in detail in memoranda to members of the FACA Workgroup on § 303(d) Listing Criteria (USEPA, 1997b), and Regional Administrators and Regional Water Division Directors (USEPA, 1997c).

F Priority Ranking and Targeting

Initially, Idaho did not assign priorities for TMDL development for waters on the final 1998 303(d) list. On October 28, 1999, IDEQ clarified the priorities for the 1998 listed waters (IDEQ, 1999i). A majority of the waters on this list were included in the TMDL schedule developed pursuant to court order (IDEQ, 1997b), which assigns years in which TMDLs are to be completed. As explained in IDEQ's recent letter, this schedule is referenced in the priority setting:

<u>Year TMDL Scheduled</u>	<u>TMDL Development Priority</u>
1999 - 2000	High
2001	Medium
2002 and beyond	Low

IDEQ considered twelve factors, including the severity of pollution and uses to be made of these waters (See Idaho TMDL Development Schedule EPA Review and Evaluation; USEPA, 1997a), during development of the eight year Idaho schedule. These factors included such things as the number and types of pollutants listed, presence of ESA species, coordination with other agencies, available IDEQ resources, etc. EPA reviewed the schedule in 1997 and concluded that it adequately considered all relevant factors, and was a reasonable schedule for addressing all waters on the 1994 303(d) list (USEPA, 1997a). Idaho, EPA and plaintiffs in the Idaho Sportsmen's Coalition v. Browner case jointly submitted the schedule to the U.S. District Court (Western District), where it was accepted. For waters added to the list in 1998 which were not part of the court ordered schedule developed in 1996, Idaho explained in the 1998 list package that TMDLs for these waters would be developed in 2006 or later.

We believe the high priority waters IDEQ has targeted for TMDL development in the short term are appropriate, since they were previously reviewed and approved for TMDL completion during this time frame as part of the Idaho TMDL schedule.

Individual waterbodies and HUC's scheduled for TMDL development in 1999 and 2000:

1999	2000
<u>4th Field HUC or Waterbody</u>	<u>4th Field HUC or Waterbody</u>
Lower Payette	N.F./M.F. Boise
Cottonwood Cr.	S.F. Boise
Jim Ford Cr.	S.F. Salmon
Blackfoot	Priest Lake
Lochsa	Upper Spokane
East Little Owyhee	Palisades
Middle Owyhee	Middle Salmon/Panther
Lake Walcott	Middle Salmon/Chamberlain
Pend Oreille	Lower Selway
Coeur d'Alene	Upper N.F. Clearwater
Lower Henry's	Central Bear
Teton	Bear Lake
Little Lost	Bruneau
Upper Snake/Rock	

In addition, given the established TMDL schedule in Idaho, and the clarification from IDEQ of how the schedule relates to their TMDL development priorities, EPA concludes that the State properly took into account the severity of pollution and the uses to be made of such waters, as well as other relevant factors. Therefore it is recommended that this prioritization scheme be approved.

G Use of Waterbody Assessment Guidance.

As mentioned above, in 1996 Idaho developed the WBAG decision process for interpreting BURP and other data for purposes of determining the support status of beneficial uses, and compliance with water quality criteria. In general EPA believes that the use of biological, chemical and physical data in this manner is appropriate for making listing decisions, and Idaho is one of the leaders in the country in using biological data for this purpose.

We have carefully reviewed the BURP and WBAG process (USEPA, 1999a) and believe it is appropriate for making 303(d) listing decisions for the 1998 list cycle. Nonetheless, EPA has concerns with Idaho's consideration of the existing and readily available data and information, including interpretation of data, and to a lesser degree, with how the data are collected. Specific concerns include the following (see Attachment A and USEPA, 1999a for more detail):

- 1 the method of establishing major vs. minor criteria violations;
- 2 the method of interpreting macroinvertebrate, habitat, algae, and fish data, and how these indices are combined;
- 3 the method and data used to evaluate salmonid spawning use support status;
- 4 interpretation of data collected from intermittent streams, springs, and lake outlets.
- 5 representativeness of the biological and habitat data;
- 6 procedures used to collect certain types of data.

Considering that this is the first time Idaho has used biological data for 303(d) listing purposes, and there is little national experience in using biological data for this purpose, it is not unexpected that some elements of the process can be improved upon.

For most decisions we do not have enough information to know if shortcomings in the process led to errors in waterbody specific decisions. In these cases we believe it is reasonable to accept decisions based upon the current process, and work to improve the process and revisit these decisions over time, as further explained below. However, in some circumstances the State's decision process and policies have led to decisions not to include certain waters which are required by the CWA and EPA's implementing regulations to be listed.

First, Idaho has consciously chosen to not list waters for which existing data indicate violations of temperature criteria. While we support Idaho's desire to revise their temperature criteria, it is clear that waters which are known to violate current temperature criteria must be listed (See National Clarifying Guidance.... USEPA, 1997d). Second, BURP data and other rationale used by IDEQ do not support two listing decisions (Wickahoney Creek, Pack River), based on criteria in the WBAG. Our review of these decisions is discussed in more detail in Section H.2.

Concerns with the WBAG process must be addressed in future list cycles. IDEQ has identified the need to address many of these concerns and is now in the process of revising the WBAG. It is expected that this process will involve a significant investment in contractor and IDEQ technical staff support to develop information from which to revise the current protocols. Three interagency technical teams (lakes/reservoirs, rivers, wadeable streams) have been assembled to draft revisions based on the new data. Proposed revisions will then be circulated for external peer review, and draft revisions will then be published for public review and comment. Public comments will be considered before finalizing new protocols and using them for 303(d) listing purposes. Given the significant time and resource commitment which this will involve, revising the process to affect the 1998 list is not possible.

EPA discussed concerns with the WBAG process with IDEQ in early 1999. At that time it appeared that there would be a significant time and resource overlap with efforts to produce a 2000 303(d) list. Since revisions to the WBAG were expected to involve a significant level of effort, it appeared reasonable to incorporate changes over the 2000 and 2002 list cycles, and approve decisions in the 1998 list based on the existing process, with the exceptions noted above. Based on conversations with IDEQ management as documented in a May 6, 1999, letter to IDEQ (USEPA, 1999b), our understanding was that the following steps and those outlined in Attachment A would be completed by the 2000 and 2002 list cycles:

- The WBAG process would be revised in collaboration with EPA to address concerns identified above and a mutually acceptable § 303(d) decision process will be agreed upon for the 2000 listing cycle; and
- For the 2000 list, all 1997 and 1998 BURP data would be utilized for those waters not evaluated in 1998, plus any other data acquired by IDEQ as part of the 2000 list process; and
- In sub-basin assessments for TMDLs due in 2000 and later, all BURP data collected since 1993 and the revised WBAG process would be used to identify impaired waters, and TMDLs will be written for waters on the 303(d) list, and where practicable, those identified as impaired but not currently on the 303(d) list; and
- In the next listing cycle after 2000, all listing decisions would be revisited using all BURP data collected since 1993 and the new WBAG process, unless the water was previously considered for the 2000 list; or
- All waters sampled between 1993 - 1996 would be re-monitored (unless they have been sampled more recently), and all BURP data collected or otherwise available since 1997 will be used in the next listing cycle after 2000.

On March 3, 2000, IDEQ provided an update on efforts to revise the WBAG, and concerns with applying the current WBAG for TMDL development in the interim (IDEQ, 2000b). In summary, efforts are well underway to revise the WBAG process, but the first round of revisions is not expected to be completed until the winter of 2000/2001. In the meantime, IDEQ will incorporate additional measures into the WBAG process (ie. WBAG+) to evaluate data for TMDLs due in 2000.

EPA responded to this update on March 28, 2000, indicating that we appreciate the progress being made, yet recognize the delay in planned WBAG revisions (USEPA, 2000c). Given the information presented in IDEQs March 3 update, and expected changes in the 2000 list cycle requirements (see below), we clarified in italics how our May 6, 1999, understanding regarding the WBAG revision process has been modified, as follows:

1. Revise the WBAG process in collaboration with EPA to address concerns identified above and reach a mutually acceptable §303(d) decision process for the 2000 listing cycle; and

Modification: The WBAG process will be revised by the winter of 2000/2001 [the 2000 listing cycle has been proposed to be eliminated (Federal Register; February 2, 2000)].

2. For the 2000 list, utilize all 1997 and 1998 BURP data for those waters not evaluated in 1998, plus any other data acquired by IDEQ as part of the 2000 list process; and

Modification: The 2000 listing cycle has been proposed to be eliminated (Federal Register; February 2, 2000), therefore this provision is likely not applicable.

3. In sub-basin assessments for TMDLs due in 2000 and later, use all BURP data collected since 1993 and the revised WBAG process to identify impaired waters, write TMDLs for all impaired waters whether or not they are on the 303(d) list; and

Modification: In sub-basin assessments for TMDLs due in 2000, use all BURP data collected since 1993 and the WBAG+ process as explained in the Division of Environmental Qualities March 3, 1999, letter to identify impaired waters, and to the extent practicable, write TMDLs for all impaired waters whether or not they are on the 303(d) list.

In sub-basin assessments for TMDLs due in 2001 and later, use all BURP data collected since 1993 and the revised WBAG process (ie. as finalized in the winter of 2000/2001) to identify impaired waters, and to the extent practicable, write TMDLs for all impaired waters whether or not they are on the 303(d) list.

4. a. In the next listing cycle after 2000, commit to revisit all listing decisions for waterbodies using the new WBAG process and all BURP data collected since 1993, unless the water was previously considered for the 2000 list; or
- b. Commit to re-monitor all waters sampled between 1993 - 1996 (unless they have been sampled more recently), and use all BURP data collected or otherwise available since 1997 in the next listing cycle after 2000.

Modification: These provisions remain unchanged.

We believe these revisions are reasonable, and do not change the basis (described above) of our recommendation to approve 1998 303(d) listing decisions.

During this same time frame, EPA proposed to eliminate the regulatory requirement for States and Tribes to submit a 303(d) list in 2000 (Federal Register, 2000a). On March 31, 2000, EPA issued a final rule which eliminates the requirement for States and Tribes to submit a 2000 303(d) list, unless it is otherwise required as a result of a court order, consent decree or

settlement agreement (Federal Register, 2000b). This regulatory change does not affect the basis or conditions of our approval of the 1998 list, but provisions 1. and 2. of the agreement regarding the WBAG revision process are no longer applicable as previously written.

Based on discussions with IDEQ, it is now understood that under provision 1, EPA's concerns as outlined in our May 6, 1999, letter will be addressed by IDEQ and we will reach a mutually acceptable 303(d) decision process by the next list cycle, and provision 2 is no longer applicable.

H Listing Actions Approved by EPA

In general, it is recommended that EPA approve each of the waterbody/pollutant listings in Idaho's final 1998 303(d) list, based on the rationale provided in previous sections. Our review of and recommendations regarding certain aspects of the State's decision process, and decisions regarding certain waters, warrants further explanation as follows.

1 Intermittent and ephemeral streams.

The WBAG process was developed based on data from perennial streams, and IDEQ believes it is appropriate to use the WBAG to evaluate perennial streams only. A process for evaluating intermittent and ephemeral streams has not been established.

BURP data has been collected from several intermittent streams, and the WBAG process was initially applied to these streams for 303(d) listing purposes. IDEQ proposed adding several of these waters to the list based on the WBAG decision process. Comments were received that it was inappropriate for IDEQ to list the following intermittent or ephemeral waters:

<u>HUC</u>	<u>Waterbody</u>
17040211	Emery Creek
17040213	Pole Camp Creek
17040104	South Fork Indian Creek
17040104	North Fork Indian Creek
17040104	Russell Creek
17040104	Tag Alder Creek
17040204	Dry Creek
17040211	Little Cottonwood Creek
17040202	Tygee Creek
17040202	Garner Canyon

In responding to these comments, IDEQ stated that it was not appropriate to use the current WBAG process to evaluate intermittent or ephemeral streams, explaining that full development of biological conditions (an assumption of the WBAG biological indices) could not occur in intermittent and ephemeral streams. As a result, IDEQ decided not to add these waters to the 1998 303(d) list.

EPA agrees that it is not appropriate to apply the current process to intermittent and ephemeral streams, because the process was developed using data from perennial waterbodies with fully developed biological conditions. We agree with IDEQ's decision to not list these waters at this time. Evaluation of biological conditions in intermittent and ephemeral streams is particularly

difficult. Sampling is difficult because water is not always present, particularly during the summer months when most sampling occurs. More importantly, EPA is unaware of any biological indices which have been developed by government agencies or the scientific community for the unique ecology of intermittent and ephemeral streams. Idaho (and other States which use biological data) is currently in a difficult position without an established method to evaluate beneficial uses support, given this gap in basic scientific understanding.

In response to these concerns, as explained in Section 3. of Attachment A, we understand that Idaho has plans to modify the WBAG, or develop a new assessment tool to address intermittent and ephemeral waters by the 2002 listing cycle. We believe this is a reasonable approach and time frame given current lack of appropriate indices in the scientific community, and the magnitude of other WBAG revisions planned for the 2000 list cycle.

2 Spring creeks and lake outlets.

Similar to the assessment of intermittent/ephemeral streams, Idaho has concluded that the application of the current WBAG process to spring creeks and lake outlet streams near their sources is not appropriate. The following waterbodies are in this category and were monitored through the BURP process and evaluated for the 1998 list:

<u>HUC</u>	<u>Waterbody</u>	<u>Type</u>	<u>IDEO Decision</u>
17040211	Summit Creek	spring creek	do not list
17040202	Meadow Creek	spring creek	do not list
17040215	Warm Creek	spring creek	de-list
17060201	Stanley Lake Creek	lake outlet	de-list

The rationale as to why the current WBAG decision process is inappropriate to apply to spring creeks near their sources is best articulated in IDEQ's response to comments regarding Warm Creek as follows:

"[the proposed delisting] Report did not include assessment remarks that the MBI results for Site 96EIRO999 were excluded from assessment results for Warm Creek due to review of research showing that macroinvertebrate community development in springbrooks near their source is limited by natural ecological processes, rather than anthropogenic effects (G.W. Minshall, ISU, pers. Comm. w/C. Mebane. 1/21/98; Anderson, T.M. and N.H. Anderson 1995. The insect fauna of spring habitats in semiarid rangelands in Central Oregon. Journal of the Kansas Entomological Society 68(2): 65-76; Erman and Erman, 1995. Spring permanence, drought, and Trichoptera richness, Ibid. 50 - 64).

Bioassessment is based on evaluation of the overall biological community, not a pollutant by pollutant approach. Macroinvertebrate diversity and abundance increased with distance downstream from the Warm Springs source, and multiple age classes of rainbow trout and shorthead sculpin were present. These indicate unimpaired conditions."

IDEQ's response to comments regarding Stanley Lake Creek is the following:

"[The proposed delisting] Printout did not include full text of assessment. Site 95EIROA72 excluded from the stream assessment due to its proximity to Stanley Lake outlet. Research indicates that full community potential is unlikely to occur, but will occur with increasing

distance from the outlet. Thus the pattern of scores for this stream are considered indicative of natural ecological processes limiting community development rather than impaired conditions (Robinson, C.T. and G.W. Minshall. 1990. Longitudinal development of macroinvertebrate communities below oligotrophic lake outlets. Great Basin Naturalist 50: 303-311).

EPA agrees that it is inappropriate to apply the current WBAG decision process to spring creeks and lake outlets near their source(s), for the reasons stated by Idaho. In addition, we have discussed with Idaho an interim approach to address this, whereby such streams are sampled a sufficient distance below their source such that biological conditions are fully developed, and the perennial stream WBAG may be applied.

We also agree that until a better assessment tool is available to evaluate such waters, it is reasonable to not list and to de-list, such waters where data show biological diversity is low near the spring source due to natural ecological processes rather than anthropogenic sources, and biological conditions and diversity increase downstream. In recognition of the need for an assessment technique for such streams, we understand that IDEQ intends to develop such a tool for the 2002 list cycle. See Attachment A section 5. We believe this is a reasonable approach and time frame given the magnitude of other WBAG revisions planned for the 2000 list cycle.

3 Salmonid spawning.

Evaluation of salmonid spawning use support status for the proposed 1998 list was based on decision criteria in the 1996 WBAG, as amended. The guidance indicates that salmonid spawning is considered fully supported if data indicate the waterbody supports an active, self-propagating community of salmonid fishes. More specifically, salmonid spawning is considered to be fully supported if fish surveys demonstrate:

"...a length frequency analysis indicating two size classes not to include stocked fishes."

EPA raised concern with this decision criteria in our comments on the draft list. Specifically, we were concerned that the decision process did not consider the presence of young of the year, the relative abundance of salmonids, and the index was not quantitative. In response to these and other comments, IDEQ changed the decision criteria used for the final list, as follows (see Chapter 4, p.40; Final List Package):

"... if 3 or more age classes, including juveniles (juveniles <100 mm), of a salmonid species were present in a surveyed stream reach, then we would consider that to be conclusive evidence that salmonid spawning is a supported use, regardless of other factors

if only two age classes were present, then we would consider that to be inconclusive evidence whether salmonid spawning was supported, and assessors would next consider whether the stream's habitat attributes were sufficient to likely support salmonid populations. (ie. even though we didn't catch all age classes the days we fished, the stream conditions are likely adequate to support salmonids). Otherwise, the stream would not be considered to support salmonid spawning.

if less than two age classes were captured, the stream would be not be considered support salmonid spawning.

This approach is a significant improvement over the original decision process. Although it does not fully address all of our original concerns, e.g. it does not evaluate the relative abundance of salmonids, we believe it is a reasonable decision criteria for this list cycle. Regarding relative abundance, IDEQ identified legitimate logistical difficulties in collecting and interpreting such data in its response to comments in Chapter 4 p. 38 - 40 in the List Package, including the migratory/mobile nature of salmonids, and the tendency of electrofishing techniques to select for larger fish. We concur with IDEQ that these factors make it very difficult to reliably establish the relative abundance of salmonids, particularly juveniles.

We understand that IDEQ intends to further refine the decision process for salmonid spawning for the 2000 list cycle. In particular, IDEQ will revise their salmonid spawning decision process such that a quantitative habitat index is used, ecoregion specific habitat cutoffs are established, and the cutoffs for salmonid spawning uses are at least as protective as those established for cold water biota (See Attachment A, section 4.).

4. Specific waterbody listing decisions approved by EPA:

a. 17040202 - Tygee Creek.

IDEQ proposed adding Tygee Creek to the 1998 based on BURP monitoring data. The WBAG decision process specifies that MBI scores < 2.5 indicate coldwater biota uses are not fully supported and scores ≥ 3.5 indicate that CWB uses are fully supported. MBI scores for the two sites monitored were: upstream site - 3.74; downstream site - 1.82. IDEQ received two comments which indicated that the lower portion of Tygee Cr., where the low MBI score occurred, has been fully diverted annually from April 1 to Nov. 1, based on a 1917 court adjudication, and the stream is not protected for beneficial uses.

The IDEQ response to these comments is as follows:

Intermittent streams are not automatically excluded from protection for existing or designated beneficial uses, and when they do flow the water quality should be sufficient to protect aquatic life, for example, to allow fish to migrate through. However, proposed listing was based on a biological index which is appropriate for perennial streams. Information provided indicates stream should not be added to the list based on biological index score.

Subsequently, IDEQ submitted additional explanation and maps to EPA supporting their position that the stream is intermittent, and that use of the current WBAG decision process to add this water to the list is inappropriate (See Attachment B). We believe IDEQ has adequately documented the circumstances, and agree with their decision to not add Tygee Creek to the list, consistent with the discussion of intermittent and ephemeral streams in 2. above.

b. 17060108 - Paradise Creek.

Paradise Creek was included in the 1996 list, but was not included in the 1998 list. EPA concurs with not listing Paradise Creek since IDEQ developed a TMDL which addresses all pollutants listed for the creek (sediment, temperature, phosphorus, fecal coliforms, and ammonia), which EPA approved on February 12, 1998.

c. 17060201 - Squaw Creek.

IDEQ proposed de-listing Squaw Creek based on monitoring at two sites which found MBI scores of 4.07 and 4.55, both of which exceeded the WBAG criteria of 3.5, indicating full support of coldwater biota. Monitoring of salmonids at these sites also found they met the WBAG criteria for salmonid spawning. IDEQ received comments opposing de-listing of Squaw Creek based on Forest Service and other reports. IDEQ considered and responded to these comments, and elected to de-list Squaw Creek. Subsequently, IDEQ provided additional information to EPA supporting Idaho's position that beneficial uses in Squaw Creek are fully supported, and applicable criteria are being achieved (IDEQ, 1998e; IDEQ 1999f). We concur with IDEQ's findings that water quality standards in Squaw Creek are being achieved, based on our review of the information Idaho considered.

d. 17060201 - Thompson Creek.

Idaho proposed de-listing Thompson Creek based on BURP monitoring at four sites which found MBI scores of 4.57, 5.32, 3.10, and 4.06. Scores from three of the four sites exceeded the WBAG criteria of 3.5 for full support of cold water biota, and salmonid spawning was found to be fully supported. IDEQ received comments opposing de-listing of Thompson Creek based on Forest Service, NMFS, and other reports. IDEQ considered and responded to these comments, and elected to de-list the upper portion of Thompson Creek, and list the lower portion below Scheelite Mill where impacts from mine drainage were evident. Subsequently, IDEQ provided additional information to EPA supporting Idaho's position regarding the boundary change for Thompson Creek (IDEQ, 1998e; IDEQ 1999f). We concur with IDEQ's findings that water quality standards above Scheelite Mill are being achieved, based on our review of the information Idaho considered.

e. 17060201 - Salmon River, Yankee Fork.

IDEQ proposed de-listing this waterbody in the draft 1998 list, and received comments that salmonid spawning was not fully supported based on internal USFS correspondence. IDEQ considered this comment, as well as other comments on their method for evaluating salmonid spawning (See H.3. above). As a result, IDEQ changed its criteria for evaluating salmonid spawning, and re-evaluated data for the Yankee Fork. They concluded that the segments from Fourth of July Cr. to Jordan Cr., and Jordan Cr. to the mouth did not fully support salmonid spawning, and included these segments on the final list, as being impaired by sediment and habitat alteration. Subsequently, IDEQ submitted additional data to EPA supporting this decision (IDEQ, 1998e; IDEQ 1999f). We concur with IDEQ's decision to partially list, and partially de-list, the Yankee Fork of the Salmon River.

f. 17010214 - Lake Pend Oreille.

Lake Pend Oreille was originally listed by EPA in 1994 for total dissolved gas and unknown pollutants. The listings remained unchanged by Idaho in 1996. Idaho did not propose to add or delete pollutants for this waterbody during the 1998 list cycle, however IDEQ received one comment that the lake should continue to be listed as threatened for nutrients (Brown and Hoyt, 1998), even though it was not listed for nutrients in 1994 or 1996. Although IDEQ did not respond specifically to this comment, they did explain their policy regarding "threatened waters"

in Chapter 4, pp. 12-13 of the List Package, as follows:

DEQ listed no new water bodies on the 303(d) list as threatened because, for those water bodies currently supporting uses and meeting Water Quality Standards, DEQ found no existing and readily available data indicating a statistically significant downward trend in water quality that will result in such water bodies failing to meet Water Quality Standards in the next two years.

No new data was received from the public that would indicate a declining trend as specified in DEQ's request for data. DEQ was very conservative in its listing. By being over inclusive DEQ believes, any threatened waters are included on the 1998 list. Segments that were originally listed as threatened by EPA and not removed retain the threatened tag on the final list.

IDEQ's policy of not listing waters as threatened unless data show the water will not meet water quality standards within the next two years is consistent with EPA policy, which is spelled out in the National Clarifying Guidance for 1998 Listing Decisions (USEPA, 1997d) as follows:

"... States should therefore include a waterbody on the 1998 section 303(d) lists if the waterbody presently meets an applicable water quality standard, but is expected to exceed that standard before the next list submission deadline, i.e., April 2000 States should use this category to describe waters for which actual monitoring or evaluative data indicate an apparent declining water quality trend ... "

We concur with Idaho's decision to not list Lake Pend Oreille as threatened for nutrients, primarily because no data or information was presented indicating a declining trend in water quality which would result in exceeding water quality standards by the 2000 list cycle. We understand that IDEQ is completing an assessment of the Lake Pend Oreille sub-basin this year, including an evaluation of both the lake and tributaries. We believe this assessment will clarify the status of Lake Pend Oreille, and provide useful information which should be considered in the next list cycle.

g. 17060206 - Monumental Creek.

IDEQ changed the boundary of the listed segment of Monumental Cr. from "headwaters to Big Cr." to "headwaters to Fall Cr.." IDEQ staff (IDEQ, 1999d) indicate that the boundary for the original listing of the water by EPA in 1994 was "headwaters to Fall Cr.." In 1996 IDEQ changed the boundary to "headwaters to Big Cr.," but IDEQ believes this was an oversight, as there was no basis for a boundary change in 1996. As a result, the original 1994 boundary was re-established.

h. 17040212 - Dry Creek.

The boundaries for Dry Creek in the 1996 list were "Medley Creek to Snake River." In the final 1998 list, IDEQ changed the boundaries to "West Fk. Dry Creek to Murtaugh Lake." In documentation provided by IDEQ subsequent to submittal of the final list (IDEQ, 1999b), only a single BURP site is listed for Dry Creek, with a waterbody status call of "Not Full Support." Subsequently, IDEQ provided additional information (IDEQ, 1999d; IDEQ, 1999e), explaining that a total of six BURP sites exist above Murtaugh Lake, four of which indicate full support of coldwater biota, and two of which could not be evaluated because the West Fork of Dry Creek was dry. IDEQ concluded that Dry Creek above Murtaugh Lake meets water quality standards

and should be de-listed, based on data from the six sites, and the section between Murtaugh Lake and the Snake River should remain listed. We concur with these findings.

i. 17050103 - South Fork Castle Creek.

South Fork Castle Creek was previously listed for sediment, thermal modification, and flow alteration (IDEQ, 1997a). Idaho proposed de-listing the creek for all parameters based on BURP monitoring results. Several comments were received that the water should remain listed for temperature, sediment, bacteria and habitat alteration. In responding to these comments, IDEQ concurred with listing the creek for bacteria, indicated that "BURP data for S.F. Castle Cr. = FS," and deferred the listing of temperature. EPA obtained documentation of BURP results for S.Fk. Castle Creek (IDEQ, 1998d), which showed that MBI scores for the two sites sampled were both 3.98, which exceeds the WBAG criteria of 3.5 for full support of cold water biota. Salmonid spawning was not assessed. Based on this data, we concur with IDEQs decision to not list S.Fk. Castle Creek for sediment and include the creek in the list for bacteria. As discussed further in Section H.1. below, since monitoring data indicate exceedances of the temperature criteria, we do not concur with not listing S.Fk. Castle Creek for temperature.

I. Listing Actions EPA Disapproves.

1. Temperature waters.

a. Idaho action.

In Chapter 3 of the final 1998 List Package, Idaho raised concern about including waters on the 303(d) list which exceed current Idaho temperature criteria to protect aquatic life. IDEQ expressed concern that there are significant variations in natural water temperatures throughout the state, the temperature criteria do not adequately reflect this natural variability, and Idaho currently does not have a natural conditions provision in its water quality standards. IDEQ also presents data in Chapter 3 which they believe illustrates that there are many water bodies which exceed the temperature criteria for cold water biota and salmonid spawning a significant percentage of the time, yet the salmonid population appears to be healthy. IDEQ does not want to identify and list streams which exceed temperature criteria when their uses appear to be fully supported.

The second concern raised by IDEQ is that they did not want to list streams which do not meet temperature criteria, then "... be forced to write TMDLs to reduce stream temperatures where such actions are not warranted or even possible...."

To address these concerns, IDEQ indicated they would take the following steps:

A study will be conducted aimed at producing data to support new water temperature criteria;

All streams which would be listed for temperature on the 1998 303(d) list, both carry-overs from the 1996 list and those determined to have major temperature exceedance during the 1998 303(d) process, are placed on a separate list;

Those streams on the temperature list referenced above will be re-evaluated once new water temperature standards are developed and implemented; and

TMDLs for temperature will be postponed for streams on this list for approximately 18 to 24 months, to allow time for the collection of data and development of new water quality standards to take effect.

As a result, the final Idaho 1998 303(d) list does not include numerous waterbodies for which readily available data shows there are temperature criteria violations, although contrary to Idaho's stated position above, waters previously listed for temperature in 1996 were carried over to the 1998 list.

b. EPA Review.

Idaho raises many legitimate concerns regarding natural variability in stream temperature, and the fact that current criteria do not reflect such variability. This is a common water quality standards dilemma with which many Western states are struggling. We agree with IDEQ that it is possible that beneficial uses are fully supported in some waterbodies which periodically exceed established temperature criteria. While we are sympathetic to these problems, it is also clear under 40 CFR 130.7(b) that States are expected to list waters which do not meet water quality standards, including waters which do not meet applicable water quality criteria.

This particular circumstance is specifically addressed in EPA's National Clarifying Guidance for 1998 Territory Section 303(d) Listing Decisions (USEPA, 1997d), as follows:

"... for the 1998 listing cycle, States should include on their section 303(d) lists waters that do not meet an applicable water quality standard at the time of listing, even if the standard is in the process of being revised to be less stringent. If the standard is in fact revised in the future, the water may be removed from the section 303(d) list at that time provided the water no longer meets the listing requirements. States have the discretion, of course, to assign a low priority to those waters where there is a likelihood that they may be removed from the list in the near future..."

It is clear both from the federal regulations and the guidance for 1998 lists that waters which do not meet applicable temperature criteria, even though they may be changed in the future, should be included on the state's list. Therefore, it is recommended that EPA disapprove Idaho's failure to list waters for which available data indicate temperature criteria violations.

c. Temperature criteria applicable in Idaho.

Pursuant to the goals of the Act (CWA Sec. 101(a)(2)), Idaho must protect aquatic life uses, wherever attainable. Idaho has established aquatic life uses that are to be protected in waters of the State, but IDEQ has only specifically designated aquatic life uses for a portion of its waters. Designated aquatic life uses include such categories as warm water biota, cold water biota, salmonid spawning, etc. For waters not specifically designated, a general provision has been included in the Idaho water quality standards (IDAPA 16.01.02.101.01.) stating that:

".... the Department will apply coldwater biota criteria to undesignated waters unless Sections 101.01.b. and 101.01.c. are followed ..."

Both State and federal temperature criteria have been established to protect aquatic life uses in Idaho, as summarized below:

Use	Instantaneous	Daily Average	Reference
Warmwater Biota	33° C	29° C	IDAPA 16.01.02.250.02.b.ii
Coldwater Biota	22° C	19° C	IDAPA 16.01.02.250.02.c.ii
Salmonid Spawning (applies seasonally dependent upon species present)	13° C	9° C	IDAPA 16.01.02.250.02.d.ii
Bull Trout (State Criteria) ¹		9° C (Sept. - Oct.)	IDAPA 16.01.02.250.02.e
Bull Trout (State Criteria) ¹		12° C (June - Aug.)	IDAPA 16.01.02.250.02.e
Bull Trout (Federal Criteria) ¹		10° C (7 day rolling average of daily maxima; June - Sept.)	40 CFR 131.33(a)

Many waters have more than one applicable temperature criteria. For example, EPA has established temperature criteria for protection of bull trout, and identified specific waters to which this criteria applies (40 CFR §131.33(a)). These waters are also protected for coldwater biota and salmonid spawning uses, in most cases. There is often an overlap of applicable temperature criteria, and some of the criteria apply only seasonally. As a result, these criteria will often vary throughout the year, and more than one temperature criteria may apply at any time. Where more than one criteria is applicable, the more stringent criteria is used to evaluate compliance.

d. Data sources considered for EPA listing.

In identifying which additional waters should be added to the list for temperature, EPA only considered data which was readily available to IDEQ up to the close of the public comment period for the draft 1998 list (July 15, 1998). Although additional data may now be available, EPA believes it is unreasonable to expect States to consider new data indefinitely for any given list, since new data can be considered in subsequent list cycles. Per 40 CFR 130.7(d) States are required to publish 303(d) lists every two years. Therefore, our disapproval of not listing certain waters for temperature, and hence our listing of these waters, is focused on data readily available to IDEQ up to the time the public comment period closed.

EPA conducted an independent evaluation of these data (see section e. below for decision criteria) to establish which waters should be added to the list.

i 1998 List Package.

Temperature data and other relevant information in the 1998 List Package was evaluated by EPA

¹ EPA promulgated temperature criteria for bull trout in Idaho at 40 CFR 131.33(a). In this promulgation EPA specifically identified the waters to which the criteria applied. Idaho has also adopted a temperature criteria for bull trout, and identified the waters to which it applies (IDAPA 16.01.02.250.02.e.). Where there is an overlap in waters identified under the federal and state standards, only the federal criteria is applicable. For waters identified under the state standard only (ie. not identified under the federal criteria), the state criteria is applicable.

for listing purposes. The primary sources of information within the List Package were Chapter 3, including the identification of waters with "major" temperature criteria exceedances in § 3.8, and waterbody specific data elsewhere in the Chapter.

ii IDEQ single measurement BURP data.

EPA obtained an electronic copy of IDEQ's database of temperature measurements collected during BURP monitoring between 1994 and 1997 (IDEQ, 1999g). The database includes records of individual measurements (as opposed to continuous recording thermographs) taken at the time other data was collected at BURP sites. These data were sorted in descending order for evaluation based on criteria in e.ii. below.

iii IDEQ thermograph data.

EPA obtained an electronic copy of IDEQ's database of all continuous temperature measurements for surface waters collected during BURP or other monitoring (IDEQ, 1999h). Much of this data was collected during 1996 and 1997, with some measurements beginning as early as 1994. These data were analyzed to determine the percentage of measurements which exceeded applicable criteria (USEPA, 2000a).

iv Little Lost River Sub-basin Assessment

During 1998 IDEQ submitted the final Little Lost River Sub-basin Assessment to EPA (IDEQ, 1998e). In the assessment, IDEQ inventoried temperature data collected in the sub-basin by several agencies, primarily the Challis-Salmon National Forest. Table 18 in the assessment identifies 16 streams within the sub-basin with "major" exceedances of applicable temperature criteria.

v Other IDEQ data.

IDEQ conducted a watershed study of Big Elk Creek and Little Elk Creek in collaboration with the U.S. Forest Service in 1992 (IDEQ, 1996a). Daily temperature measurements were recorded during the summer months for both of these streams using a Ryan meter (IDEQ, 1992). These data were reviewed to determine the percentage of temperature measurements exceeding criteria for designated and existing uses. Coldwater biota and salmonid spawning are designated uses for Big Elk Creek (IDAPA 16.01.02.120.01.f), and these are also known to be existing uses in Little Elk Creek (IDEQ, 2000a ; IDFG, 2000). These data were analyzed to determine the percentage of measurements which exceeded applicable criteria (USEPA, 2000b).

vi Public comments.

IDEQ received 39 submittals during the November 25, 1997 - January 5, 1998 public request for data for the 1998 list (IDEQ, 1998a), and 113 public comments regarding the 1998 303(d) list (Section 4.1, 1998 List Package).

IDEQ's summary of thermograph data received from the Bureau of Land Management (BLM) during the data request (Table X. in IDEQ, 1998a) indicates that data for two waterbodies, Grays Lake Outlet (17040205) and Willow Creek (17040205) significantly exceeded applicable temperature criteria.

Regarding comments submitted during the public comment period, we reviewed IDEQ's Responses to Comments (Chapter 4, List Package) and obtained copies of comments and submittals which appeared to contain data regarding temperature (Sedler, 1997; Brown and Hoyt, 1998). Data included in these comments were primarily collected by IDEQ, either single measurement BURP data or continuous thermograph data, discussed in ii. and iii. above.

Comments submitted by Liz Sedler (Sedler, 1997) also contained data generated by the Panhandle Bull Trout Technical Advisory Team (TAT). These data identified waters in which the 7 day rolling average temperature was $\geq 15^{\circ}$ C. In her comment letter, Sedler identified which of these waters the federal bull trout temperature criteria (10° C, as a 7 day rolling average of daily maxima) applied to. The method the TAT used to average their data is not the same as the federal criteria; the TAT averaged temperatures over an entire 7 day period, rather than averaging just the daily maxima for 7 days. The TAT's method likely results in a lower calculated 7 day average because it includes lower temperatures, such as would occur at night. In addition, waters the TAT identified with a 7 day average $\geq 15^{\circ}$ C would clearly exceed a 7 day average of 10° C. Finally, IDEQ staff indicated that the Panhandle Bull Trout TAT data were of sufficient quality for 303(d) listing purposes (USEPA, 1999c). Therefore, we felt these data provided an adequate basis to add waters to the list for temperature.

vii Lower Snake River data.

During review of the 1998 list, EPA was simultaneously reviewing an application by the Potlatch Corporation to renew its Lewiston NPDES discharge permit. Through the course of development of this permit, temperature data on the Lower Snake River (Potlatch, 1997) came to our attention which indicates that temperature criteria are exceeded in >10% of measurements taken at a location near Hellsgate State Park (RM 144), approximately five miles above the confluence of the Snake and Clearwater Rivers. In addition, data available in annual U.S.

Geological Survey monitoring reports (USGS, 1975 - 1995), and data posted on the Streamnet website (<http://www.streamnet.org/subbasin/crbtdata.html>) indicates significant exceedances of applicable temperature criteria in the lower Snake River in Idaho.

This river segment is designated under the Endangered Species Act as critical habitat for fall and spring/summer chinook and Snake River sockeye. Additionally, the river segment is a key migratory pathway for steelhead, which has been listed as threatened under the Endangered Species Act. Because data show significant exceedances of applicable criteria, we believe it is essential to add this water to the Idaho list now to protect listed species, rather than await the next listing cycle.

e. EPA decision rules for including waters on the list.

In establishing which waters must be added to the 1998 list for temperature, EPA independently evaluated data available to Idaho during the 1998 list cycle. Rules used by EPA in making listing decisions are explained in the following sub-sections.

i IDEQ "major" criteria violation determinations.

In the WBAG (IDEQ, 1996c), IDEQ has established a procedure to determine whether exceedances of applicable criteria are "major" and therefore warrant 303(d) listing, or "minor" and do not warrant listing. Generally the guidance recommends that regional IDEQ staff make a professional judgement based on a weight of evidence approach, considering the frequency or duration of exceedances, as to whether criteria exceedances resulted in the waterbody not fully supporting its beneficial uses. For the final 1998 list, in Figure 4.8 (p. 138) of the List Package, IDEQ further clarified this policy for violations of the temperature criteria, as follows:

Major for salmonid spawning is >16 degrees Celsius
Major for coldwater biota is >22 degrees Celsius

Although it is unclear whether this policy is intended to apply to daily average criteria, the instantaneous criteria, or both, waters which IDEQ believes have major temperature criteria violations are identified in § 3.8 of the List Package.

EPA has a number of concerns regarding Idaho's treatment of temperature criteria exceedances as major or minor, our primary concern being that implementation of the policy essentially raises the criteria by 3° C. This is inconsistent with federal regulations and the Clean Water Act in that criteria may only be changed by officially revising the Idaho water quality standards.

Despite our concerns with Idaho's policy, we concur with IDEQ's judgement that exceedances they view as "major" should be a basis for adding these waters to the list because they represent significant exceedances of established criteria. However, we believe it may be appropriate to list some of the waters Idaho identifies as having "minor" violations as well. We believe these additional waters have been identified through our independent evaluation of the data Idaho considered.

ii Single sample BURP temperature measurements.

At many BURP sites IDEQ records a single measurement of the water temperature while other

BURP data is collected. IDEQ elected not to use this data to identify major temperature violations because they did not establish a set field procedure for collecting the data (e.g. location, time of day, etc.) to ensure its representativeness, they were concerned over the accuracy of the measurements due to the coarse scale (-10 to 100° C) of some of the thermometers used, and it is unknown whether thermometers were calibrated (IDEQ, 1999c).

EPA understands the limitations of this data both from a quality assurance and representativeness standpoint. Although there is uncertainty in the representativeness of the BURP temperature data because there are no established monitoring protocols, the Idaho instantaneous temperature standard is also non-specific as to when or how data should be collected to compare to the standard. For example, sampling procedures and locations are not specified in the description of the instantaneous and daily average temperature criteria to protect coldwater biota:

"...Water temperatures of twenty-two (22) degrees C or less with a maximum daily average of nineteen (19) degrees C ..."

The BURP data collected may not be as accurate as desirable, but BURP workplans (IDEQ 1996b; IDEQ 1997c) specify a standard method for calibrating thermometers, with a specific recommendation that the thermometers have a scale marked every 0.1°C. Although scales of this precision may not always have been used in practice, we believe thermometers used could be read to at least +/- 1° C.

Although BURP or other single sample temperature data is not the most desirable data to evaluate compliance with temperature criteria, we believe it is unreasonable to exclude its use for listing purposes where more reliable data (e.g., thermographs) are not available.

However, we believe there are limitations in how this data should be used. First, the data are instantaneous measurements taken once at a single sample location. It would not be appropriate to compare these single-point-in-time measurements to the federal or state bull trout criteria, or the average daily salmonid spawning or coldwater biota criteria, all of which are based on either daily or weekly average values. For this reason, we believe these data should only be used to evaluate compliance with instantaneous criteria.

Second, as stated above, we believe field crews should be able to determine temperatures to within +/- 1° C. If field crews recorded a temperature 1° C or more above the applicable instantaneous criteria, EPA believes it is reasonable to assume that the actual stream temperature at that point exceeded the instantaneous criteria, and these measurements should be a basis for listing the water.

EPA obtained an electronic copy of the BURP temperature monitoring database from IDEQ (IDEQ, 1999g). Instantaneous temperature criteria in Idaho water quality standards include criteria for warm water biota (33° C), cold water biota (22° C), and salmonid spawning (13° C). Idaho water quality standards were reviewed to establish the applicable use for each waterbody, and BURP measurements were evaluated to determine if they exceeded the applicable temperature criteria by 1° C or more (See Idaho 1998 303(d) Zip disk, files under BURP single measurement data - 1996, 1997). Waters exceeding this threshold will be proposed to be added the 1998 303(d) list (see Attachment C).

During 1996 and 1997, IDEQ monitored a number of streams for temperature using continuous (or near continuous) reading thermographs. Since this type of monitoring generates enormous quantities of data, decisions must be made as to how to summarize and interpret the data. In analyzing continuous data, we relied upon guidance published by EPA for preparing 1996 §305(b) reports (USEPA, 1995). This guidance indicates that if $\leq 10\%$ of measurements exceed an applicable criteria such as temperature, then the waterbody should be considered to fully support its uses for that criteria.

In our analysis of thermograph data, we first established the applicable uses and temperature criteria by reviewing the Idaho water quality standards, and by contacting IDEQ regional office staff. Regional staff were often able to identify sensitive existing uses which are protected but not specifically designated in Idaho water quality standards. In the case of salmonid spawning, regional staff were often able to identify which salmonid species were present in a stream in order to establish the appropriate time period in which the salmonid spawning temperature criteria apply.

A statistical analysis was then conducted to determine what percentage of measurements recorded by each thermograph exceeded the applicable criteria for that waterbody. If the criteria were exceeded in more than 10% of measurements for any applicable temperature criteria, it was considered an adequate basis to propose adding the water to the 1998 303(d) list. A summary of the data and analysis results is presented in Attachment C.

2. Other waters.

a. 17050102 - Wickahoney Creek

Wickahoney Creek was included in 1996 303(d) list for sediment and flow alteration with boundaries of "*Headwaters to Big Jacks Creek.*" IDEQ received a comment during the public comment period (Jackson and Jackson, 1998) stating that the upper 2.5 miles of the listed segment should not be listed because it is ephemeral. No new information was presented indicating that the section in question was meeting water quality standards.

The IDEQ response to this comment was very brief:

"... (Allotment Permittee) BURP data=NFS, not removing H or QALT..."

Based on this comment, IDEQ chose to change the upper boundary of the listed segment, so that the listed segment is now

"2.5 miles below headwaters to Big Jacks Creek."

Idaho water quality standards apply to waters of the State, which are defined as (IDAPA 16.01.02.003.116):

"... All the accumulations of water, surface and underground, natural and artificial, public and private, or parts thereof which are wholly or partially within, which flow through or border upon the state..."

Similarly, waters of the United States are defined at 40 CFR 122.2 to include:

*"... © All other waters such as intra-state lakes, rivers, streams (including intermittent streams), ...
.....(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition ..."*

While the anecdotal information presented in the comment letter are inadequate to conclude whether the upper portions of Wickahoney Creek are intermittent, it is clear that intermittent streams are considered both waters of the U.S. and waters of the State, and therefore Idaho's water quality standards would apply to the upper portion of Wickahoney Creek in question. Since no new information has been presented indicating that the upper portion of Wickahoney Creek meets applicable water quality standards, and since the available BURP data results (IDEQ, 1998d) indicate that Wickahoney Creek does not fully support its uses, we recommend this boundary change be disapproved, and the original boundary of "*Headwaters to Big Jacks Creek*" be reinstated.

Consistent with EPA's position (USEPA, 1997e) of only listing waterbodies impaired by pollutants, we recommend the 2.5 mile upstream segment only be listed for sediment.

b. 17010214 - Pack River.

In the Decision Document for waters de-listed from the 1996 list (Federal Register, 1999), a single BURP site is listed (94NIRO0009). IDEQ indicates that the support status for salmonid spawning is NFS (not full support), the site status is NFS, and the waterbody status is NFS. These findings are consistent with the decision process in the WBAG. The decision process specifies that waters become a:

"...candidate for listing as water quality-limited, as required under Section 303(d) of the CWA, once a beneficial use has been determined to be "Not Full Support"..."

However, in this instance IDEQ did not include Pack River on the 1998 list, nor was any additional data presented in the List Package or Decision Document to support not listing the waterbody. EPA contacted staff in both the IDEQ Regional and Central offices to establish whether other data was available to support the de-listing, but no data or rationale was forthcoming. Therefore, it is recommended that EPA add Pack River to the 1998 Idaho 303(d) list, for the same pollutants it was listed in 1996 (nutrients, sediment, dissolved oxygen, pathogens, pesticides), except habitat alteration. Consistent with EPA's position (USEPA, 1997d) of only listing waterbodies impaired by pollutants, we do not recommend listing the Pack River for habitat alteration.

3. Waters recommended to be added to the Idaho Section 303(d) list.

Based on information and analysis presented in sections 1. and 2. above, it is recommended that EPA propose to add 134 waters for temperature, one water for sediment (Wickahoney Creek), and one water for nutrients, sediment, dissolved oxygen, pathogens and pesticides (Pack River) to the 1998 Idaho Section 303(d) list. These waters are identified in Attachment C, along with data sources used as a basis for their listing.

J. Waters in Indian Country.

The 1998 State of Idaho list includes some but not all waters EPA included in the 1994 list in response to court order. EPA's approval of Idaho'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.

In the particular case of Idaho, the 1994 303(d) EPA listing of Indian Country waters remains in effect. Consistent with the order of the court, these waters are included in the TMDL development schedule developed jointly by IDEQ, the plaintiffs, and EPA. EPA, the Tribes, and State will continue working in partnership to develop TMDLs for waters included on the 1994 list.

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III. ATTACHMENTS:

- A. IDEQ commitment to address WBAG and BURP Issues.
- B. Supporting documentation for Tygee Creek.
- C. Waters proposed to be added to the 1998 list.

ATTACHMENT A

IDEQ commitment to address WBAG and BURP Issues.

Attachment A

The following identifies EPA's specific concerns with the process used for collecting and interpreting biological and habitat data for the Idaho 1998 § 303(d) list. A § 303(d) listing cycle by which each of these areas must be addressed is also identified. Upcoming proposed regulation revisions are expected to consider listing cycles longer than two years, therefore, changes expected by the year 2002 listing cycle are actually expected by the next listing cycle after 2000 which may or may not be 2002.

1. The method of establishing major vs. minor criteria violations.

2000. The criteria for determination of major versus minor exceedances of water quality criteria must be clearly defined in a non-subjective manner. The current approach relies primarily on subjective judgements by regional staff as to whether biota have been impacted. Objective criteria must be established for deciding when a violation is considered a "major" exceedance, and where there is room for discretion (for example, X or greater number of exceedances in Y time frame is a major exceedance, between Q and P number of exceedances there is discretion). The 305(b) guidelines are a starting point for options you may want to consider.

For the 1998 list, objective criteria were established to evaluate temperature violations, i.e., temperatures more than three (3) degrees over the criteria were considered "major" violations. Raising the bar like this amounts to changing the criteria in the regulations by three degrees, and is not an acceptable approach unless the State first completes the regulation revision process.

2. The method of collecting macroinvertebrate, fish, algae and habitat data.

A. Study Design.

2000. The sampling season selection, is primarily July 1 through October 15. However, DEQ does vary from this index period. These deviations from the index period need to be documented and justified. These index periods should be absolutely no longer than three and a half months, the shorter the index period the less inter-annual variability.

2000. Appropriate sample site selection is very important to collect a sample representative of a given stream segment. The existing BURP Workplan write-up is a good start, however, we feel a clearer process would add great value to the quality of BURP data and why specific sites are selected and what they represent. For example, the plan should better describe the available methods commonly used to stratify streams, and how this information will be used to establish what portion of a stream a BURP site can reasonably represent. In addition, the plan should identify the sampling frequency needed to adequately represent the physical, chemical and, biological integrity of a given segment of stream.

2000. **Quality Assurance procedures.** Due to problems with temperature measurements collected during previous BURP monitoring, a more complete and rigorous temperature QA/QC procedure must be developed. We recommend that it not only include calibration of instruments used, but a protocol for selecting appropriate locations and times and duration of monitoring (assuming the use of recording thermographs in the future - see F. below).

B. Physical Habitat.

2000. **Width and Depth.** BURP modifies the Bauer and Burton methodology for this parameter. Measurements (both wetted width and depth and bankfull width and depth) are taken 10m above each of the three macroinvertebrate sampling locations. The problem with this method of selecting a location is that it may be in the same riffle as the macroinvertebrate sample, it may be in a pool above the sample, or it may be in some transition between the two. This has the potential to introduce unnecessary variability into the measurement. For example, one stream might have all its cross sections measured in riffles, another might end up with all of them in pools.

There is value to both riffle cross sections and pool cross sections. Cross section locations should be selected carefully to characterize either a riffle or a pool, but the two should not be mixed. One recommendation would be to distribute cross sections proportionally to the habitat types in the stream which would provide a general description and characterization of the habitats available. The representative riffle cross section (at bankfull) should be used for the width/depth ratio of the reach.

It is important to note that only by accurately estimating bankfull will the width/depth ratio and the pebble count data be useful or comparable (either from one stream to another or from one time to another at the same location). If wetted widths are used, for example, the seasonal variability is likely to mask any other variability and none of the comparisons will be useful or valid. Estimating bankfull generally takes some training and experience, as it is a judgment call that may be based on several different indicators, in combination. If inconsistent and inaccurate bankfull estimates are made, the variability will be random, rather than seasonal, but the comparability problems will remain. This is an area where specific training and field audits of crews is necessary to ensure data quality. It may be helpful to include an area on the BURP field data sheets to record bankfull indicators, such as scour lines, top of point bars, etc.

C. Water Column Measures.

2000. The collection of only one temperature measurement per site as part of the BURP process is clearly insufficient in the absence of other available water column data. Due to the importance of temperature issues it is also recommended that recording thermographs be used instead of single temperature measurements. However, it is recognized that use of thermographs will increase the costs of monitoring, as it is necessary to revisit the sites to retrieve the instrument at the end of the season. We also understand that the State might not have the resources to place them at every site they monitor every year, but they should develop a strategy and a prioritizing mechanism (e.g., higher priority for sites where salmonid spawning uses are present) for collecting such data each year.

2002. At a minimum, IDEQ should measure and record Dissolved Oxygen ($\mu\text{g/L}$), pH, and Conductivity (μohms) at each sample site. These measures are simple and inexpensive, and they provide important information about aquatic resource.

3. The method of interpreting macroinvertebrate, fish, algae and habitat data.

A. MBI data analysis.

2000. The current method of using slope breaks on a curve and a constructed reference condition is acceptable on an interim basis only. The MBI, as it is currently constructed, is based on data that was available as of 1995. For the next listing cycle we strongly encourage DEQ to consider a more established approach whereby *a priori* selected reference sites are identified and data from these and known impacted sites are used to establish decision points for aquatic life status determinations. DEQ has a much richer dataset than was available in 1995. We

suggest DEQ follow the procedure outlined in Fore et al (1996) to independently identify and test a series of metrics (those in the MBI plus others) and evaluate the MBI index. This type of analysis, while possibly modifying the MBI, can only strengthen the bioassessment process.

The continued use of a constructed reference and slope break point approach may be acceptable if the process is updated by incorporating new data collected since 1995, and additional sites are monitored at random to establish a database more representative of the true distribution of biologic conditions in the state. We continue to recommend, though, that Idaho pursue using a reference condition approach, since existing data could be used to establish decision points, and it is a more accepted approach in the literature.

B. RIBI data analysis.

2002. The questions in the RIBI align with many of the metrics one could calculate. BURP monitoring builds sufficient data to develop and use a quantitative fish assemblage index. BURP taxonomic and quality assurance procedures for fish are quite good, but this data is not used to its full potential in the RIBI. Each of the RIBI questions could be quantified into a metric and compared to a reference condition. There are complicating factors that will make this task more difficult for fish than it is for macroinvertebrates. The primary factors are the significant stocking of game fish in Idaho waters and the migratory nature of salmonids. However, these and other complications are not insurmountable barriers. There has been work in some regions of Idaho that DEQ could use as a basis for the development of a quantitative fish assemblage index. There has certainly been less fish assemblage work conducted in depauperate western streams than in mid-western or eastern streams.

Although it is not an easy task, DEQ must develop a quantitative fish assemblage index. This index should have a suite of tested metrics and a set of scoring criteria based on regional reference sites. This index should be based on BURP data as well as on other studies that have been conducted in Idaho DEQ and other parts of the western U.S.. The index should be peer reviewed by experts both within the state of Idaho and others in the western U.S.

C. AI data analysis.

2002. DEQ analyzes available periphyton data using the ABI which is based on the work in Kentucky and Montana. DEQ has also worked with Dr. Pete Koetsier at Boise State University to review the ABI and analyze the BURP periphyton data. DEQ should continue to improve the field, lab and analysis techniques for the use of periphyton, as it is a promising indicator.

D. HI data analysis.

2000. In the BURP protocol, both bankfull and wetted width and depth are measured. In the habitat assessment, only wetted width and depth are used. The inevitability of seasonal-variability is cause for concern. Depending on the time of year it is sampled, the shape of the channel and whether or not it was a wet or dry year, the width/depth ratio of the wetted channel could change significantly without any change in the channel itself. For upcoming listing cycles, bankfull width must be used to calculate width to depth ratios, or we expect a more thorough explanation as to why wetted width is appropriate given its inherent variability.

2002. The increased scrutiny on state environmental agencies due to widespread habitat degradation, declines in salmonid stocks, and Endangered Species Act listings will likely move habitat assessment toward more quantitative analysis. To DEQ's credit, the HI is a first step toward quantitative assessment of physical integrity. DEQ has set reference conditions by ecoregion using a partial set of quantitative measures. DEQ possesses the data to continue the development of a broader set of quantitative habitat indicators, and it is recommended that DEQ continue to draw upon research to provide a strong foundation for this effort.

For future listing cycles greater documentation of methods and increased training is needed, both of which should greatly decrease the variation and inconsistency in field work performance, including variability in parameter

selection, parameter measurements, and rating or evaluation of qualitative parameters. In addition, unless their repeatability and ability to evaluate human influence can be well documented, qualitative (or "measured ocularly") habitat parameters should be eliminated. It should be noted, that many experts feel that qualitative measures should be discarded entirely.

E. Sequential nature of data analysis.

2000. Currently indices are used in a sequential manner to make coldwater use support decisions. For example, fish, habitat and algae data are only considered if results from preceding indices are indeterminate. In order to provide a complete assessment of biological conditions, for the next listing cycle indices must be used simultaneously rather than sequentially, but the indices may have different weights for decision making. For example, MBI could have more weight than the habitat index or fish index since the latter indices are not as quantitative or well established in the literature.

F. Boundary Changes.

2000. In some instances DEQ uses BURP and other data to change the boundary of a listed waterbody. We agree that this may be appropriate, but it is extremely important to document and explain the rationale supporting these boundary changes. Such documentation was provided after the final list was submitted. In future list cycles, improvements in the documentation of these changes are needed, and such documentation must be provided as part of the draft and final list packages. It may help to provide more specific guidance and examples to Regional office staff involved in making and documenting these decisions.

4. The method and data used to evaluate salmonid spawning use support status.

2000. For the 1998 list, IDEQ revised the salmonid spawning status decision rule to reflect that salmonid spawning is full support if 3 age classes of salmonids including juveniles are present, or if 2 age classes including juveniles are present and the habitat score exceeds 73. We can support the use of 3 age classes to establish that a water fully supports salmonid spawning, but at this time we cannot support the use of 2 age classes and a habitat score of 73 or higher. The HI cut-off for salmonid spawning is lower than the cut-off used to evaluate coldwater biota. The logic behind this is not clear, as many of the HI parameters are based on the habitat preferences of salmonid species. In addition, coldwater biota cut-off points vary depending upon ecoregion, ranging from 81 to 100, whereas a single cut-off point is used to evaluate salmonid spawning. We support developing cut-off points by ecoregion to address the different habitat expectations that occur with different soils, geology, vegetation and hydrology (some of the major factors that go into defining ecoregions).

In the longer term we believe it may be acceptable to use the 2 age class plus habitat approach once the habitat index is based on quantitative habitat measures (see 3.D. above), ecoregion specific scores are used, and cutoffs are at least as protective as those established for coldwater biota uses.

In responding to comments on the draft 1998 list, DEQ indicated that in circumstances where salmonid spawning uses exist or are designated but fish data are not available to evaluate use support status, macroinvertebrate data (and presumably coldwater biota cut-off points) would be used to evaluate use status. Use of MBI alone to evaluate salmonid spawning is inconsistent with DEQ's decision process. As indicated in our May 6, 1999, letter, these decisions, particularly de-listings, must be revisited in future list cycles which should allow the state time to survey fish populations to adequately evaluate these uses. Where salmonid spawning is not supported we would expect these waters to be re-listed and that TMDLs be written. In addition, in all future list cycles, waters which are impaired by pollutants which may affect salmonid spawning should remain on the list until fish information is available to evaluate the use.

5. Interpretation methods for intermittent streams, springs, and lake outlets.

2002. In the 1998 list submittal package, DEQ indicates that it is not appropriate to use the WBAG decision process for intermittent streams, springs, and lake outlets because biota in these waters are much different than in perennial streams, on which the decision process is based. EPA agrees that it is not appropriate to apply the current decision rules to these streams. However, this leaves a gap in the State's decision process that should be filled, and having such procedures for evaluating these waters for the 2000 listing cycle would be desirable.

We recognize it will be resource intensive to develop these procedures, and many other revisions must be made by 2000. We believe it is reasonable to establish such methods by the next listing cycle, provided none of these waters are removed from the 303(d) list in the interim without an adequate basis to conclude that water quality standards are met.

References:

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ATTACHMENT B

Supporting documentation for Tygee Creek



SHILL@deq.state.id.u

s

05/01/2000 11:22 AM

To: Leigh Woodruff/R10/USEPA/US@EPA

cc:

Subject: Locations of BURP Sites on Tygee

Leigh,

I'm FAXing two maps that show the locations of the BURP samples collected on Tygee Creek.

The upstream BURP site (96EIROY033) is located on the Targhee National Forest near the continental divide and had an MBI of 3.7. The fisheries of this segment of Tygee Creek is isolated by a waterfall at approximately the Forest boundary. The population of Yellowstone cutthroat trout in the upper Tygee is an important source of cutthroat for reintroduction to other streams in the Upper Henry's subbasin. The Big Springs 7.5 minute quadrangle map shows Tygee Creek as perennial above section 18, and intermittent below. The water in the stream begins to infiltrate into the subsurface at this point, so flows reach Henry's Lake only during runoff.

The downstream BURP site (96EIROY036) is about 1/8th mile below the Forest boundary and had an MBI of 1.8. This site is dry except during runoff and conditions of unusually wet weather. Flow is diverted to Henry's Lake in Section 24, and the stream channel that is shown continuing south on the topographic map has essentially been obliterated by rechannelization of Tygee Creek along the highway.

1000m E 412 WEST YELLOWSTONE, MONT. 15 MI. 0.9 MI. TO IDAHO 287 20' 91 R. 43 E 3773 31 NE GARGHEE PASS R. 44 E 176 1730' 47 73

Jord Creek

14

Glacier Pt

18

21

176

1730' 47

73

Henry

6575

6575

6575

6575

6575

6575

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RUPP Sid
96 SIRDY 36
WBS 11.8



23 Division

TRAIL

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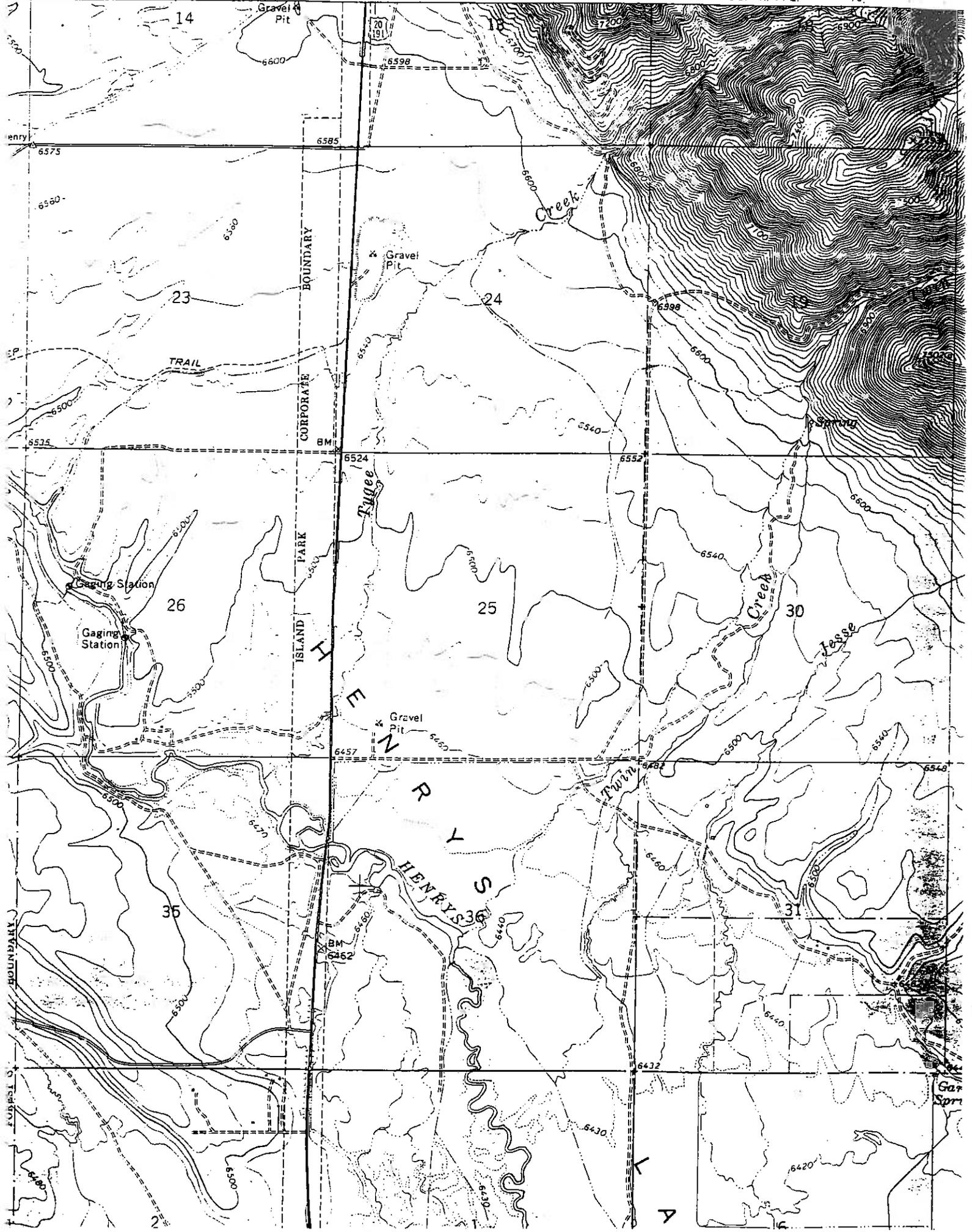
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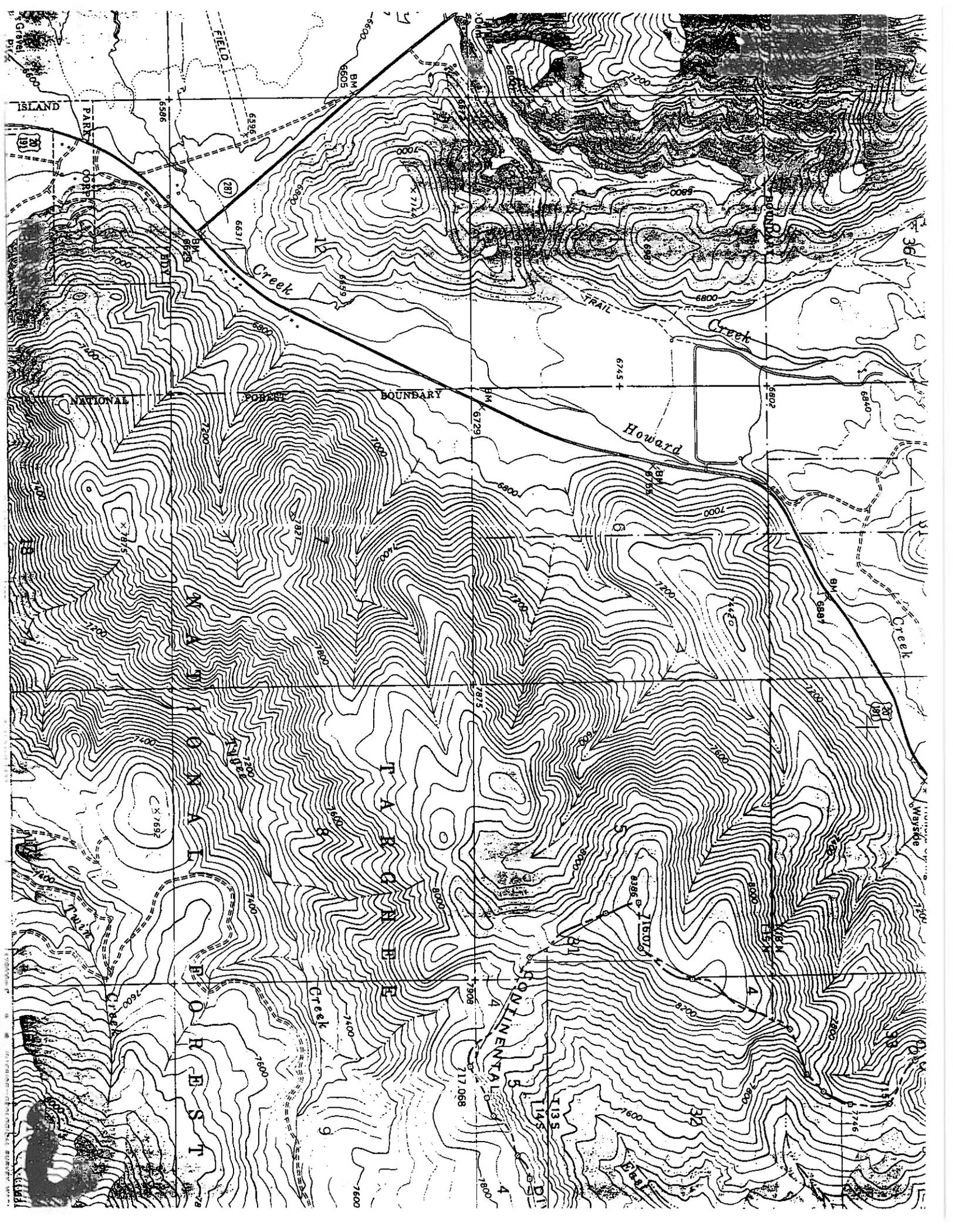
Garland Station

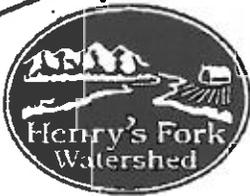
CORPORATE BOUNDARY

Henry

Henry</







Henry's Fork Watershed Council

P.O. Box 852 • 604 Main Street • Ashton, ID 83420

TEL 208-652-3567

FAX 208-652-3568

E-mail: henrys@srv.net

July 13, 1998

Mr. Larry Koenig
Division of Environmental Quality
1410 North Hilton
Boise, ID 83706

Dear Mr. Koenig:

The Henry's Fork Watershed Council, in its role as Watershed Advisory Group for the Upper Henry's Fork subbasin assessment and TMDL, submits the following recommendations regarding the draft 1998 § 303(d) list of water quality-limited water bodies for Idaho. All recommendations refer to water bodies located in hydrologic cataloging unit 17040202.

1. Remove four water bodies (Henry's Fork, Henry's Lake, Tygee Creek, and Meadow Creek) from the list. The Council believes that these water bodies currently support all beneficial uses, cannot be expected to support some beneficial uses under natural conditions, or support the beneficial use of cold water biota despite macroinvertebrate biotic index (MBI) scores of less than 3.5.
2. Change the name of Garner Canyon to Garner Springs, and change the water quality limited segment (WQLSEG) number accordingly.
3. Add the segment of Sheridan Creek from the Yale-Kilgore Road crossing to Island Park Reservoir. This segment does not support the beneficial use of salmonid spawning according to temperature criteria exceedances and fish population surveys.

These recommendations are explained in greater detail in Attachments A through F, which also contain supporting documentation and data.

Sincerely,

Janice M. Brown, Co-facilitator

Dale L. Swensen, Co-facilitator

copy: Upper Snake Basin Advisory Group
attachments

Cofacilitators:

Henry's Fork Foundation Janice Brown. 208-558-9041 Fax 208-558-9042
Fremont-Madison Irrigation District Dale Swensen. 208-624-3381 Fax 208-624-3990

Attachment C

Water body: Tygee Creek
Boundaries: Forest Service boundary to Henrys Fork
WQLSEG: 5260
Pollutant: Unknown
Recommendation: Remove from list

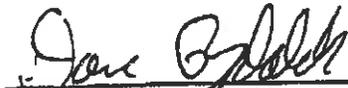
This segment of Tygee Creek, also known as Dry Creek, is not protected for beneficial uses under IDAPA 16.01.02. As shown by the following affidavit and adjudication claim, the North Fork Reservoir Company has the right to divert 4000 acre-feet from lower Tygee Creek to Henry's Lake annually from April 1 to November 1. This volume exceeds the normal average volume of water discharged by this stream segment.

Cheryl Hill
Dept. Of Environmental Quality
900 N. Skyline Drive
Idaho Falls, ID 83402

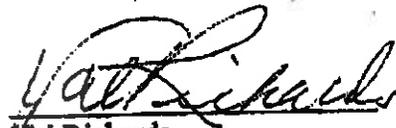
Dear Ms. Hill:

Enclosed please find the requested documentation in the form of a water right decree that allows North Fork Reservoir Company to divert 4,000 acre feet of water from Dry Creek otherwise known as Tygee Creek into Henry's Lake.

Sincerely,



Dave Rydalch, President
North Fork Reservoir Company
Deputy Watermaster Water District 01



Val Richards
Henry's Fork Hydrographer
Water District 01

AJ5809NP
No. A21-02154

IDAHO DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM PROFILE REPORT

DATE: 06/25/98
PAGE: 1

OWNER CODE	NAME & ADDRESS	PRIORITY DATE	WATER USE	USE PERIOD FROM TO	DIVERSION RATE	DIVERSION VOLUME
C	NORTH FORK RESERVOIR COMPANY PO BOX 250 REXBURG ID 83440 (208) 356-3633	09/04/1923	IRRIGATION	04-01 11-01		4000.00 AFA
				TOTAL DIVERSION:		4000.00 AFA

Water Source: TYGEE CREEK

Tributary to: HENRY'S FORK OF SNAKE RIVER

Stage: LICENSE

Point(s) of Diversion:

T15N R43E S24

MMNMM

FREMONT County

POJ County:

Other Rights: 21-02161, 21-02152, 21-02074, 21-04100, 21-04101, 21-04102

Remarks: GEN LAND IS WITHIN SERVICE AREA OF RESERVOIR COMPANY
FOR LAND LIST SEE A21-00110Z CLAIMS

Dates: Exam Made Date:

Verified Date:

Objection Filed Date:

Misc: Water District Numbers:

Field Inspection Flag:
Presumption Flag:

ATTACHMENT C

Waters proposed to be added to the 1998 list

1998 Idaho 303(d) List

Waters Proposed to be Added

U.S. Environmental Protection Agency
April 2000

	HUC	WQLSEG	Waterbody	Boundaries	Pollutant	Data Source	Currently listed for other pollutants		Boundary for other pollutants
							Yes	No	
1	16010202	5254	Worm Creek	Headwaters to Utah line	Temperature	3	x		Glendale Reservoir to Utah line
2	17010104		Boundary Creek	Headwaters to mouth	Temperature	4		x	
3	17010104	3368	Deep Creek	Headwaters to Kootenai River	Temperature	3	x		McArthur Lake to Kootenai River
4	17010213		Cascade Creek	Headwaters to mouth	Temperature	4		x	
5	17010213		Lightning Creek	Headwaters to mouth	Temperature	4		x	
6	17010213		Mosquito Creek	Headwaters to mouth	Temperature	4		x	
7	17010213		Porcupine Creek	Headwaters to mouth	Temperature	4		x	
8	17010213		Rattle Creek	Headwaters to mouth	Temperature	4		x	
9	17010213	3476	Wellington Creek	Headwaters to mouth	Temperature	4	x		Falls to Lightning Creek
10	17010214	3465	Granite Creek	Headwaters to Pend Oreille Lake	Temperature	2,4,5	x		Headwaters to Pend Oreille Lake
11	17010214		Grouse Creek	Headwaters to mouth	Temperature	4		x	
12	17010214		Pack River	HWY 95 to Pend Oreille Lake	nutrients, sediment, dissolved oxygen, pathogens, pesticides	1		x	
13	17010214	3462	Trestle Creek	Headwaters to Pend Oreille Lake	Temperature	2		x	
14	17010214		Upper Cocolalla Creek	Headwaters to mouth	Temperature	5		x	
15	17010215	5622	Gold Creek	Washington line to Hughes Fork	Temperature	1,2,5		x	
16	17010215	5616	Granite Creek	Headwaters to mouth	Temperature	1,2,4,5		x	
17	17010215	5615	Lion Creek	Headwaters to Priest Lake	Temperature	1,2,4,5		x	
18	17010215		Soldier Creek	headwaters to mouth	Temperature	2,5		x	
19	17010215	3427	Two Mouth Creek	Headwaters to Priest Lake	Temperature	1		x	
20	17010301	3495	Steamboat Creek	Headwaters to CdA River	Temperature	2,5	x		Conflu of Barrymore & Steamboat to N FK CdA River
21	17010303	3543	Fernan Creek	Headwaters to CdA Lake	Temperature	3	x		Fernan Lake to CdA Lake
22	17010303	3585	Santa Creek	Headwaters to St. Maries River	Temperature	3	x		Headwaters to St. Maries River
23	17010304	5619	Beaver Creek	Headwaters to St. Joe River	Temperature	1,2,4,5		x	
24	17010304	5022	Bluff Creek	Headwaters to St. Joe River	Temperature	2,4,5		x	
25	17010304	3593	Emerald Creek, EF	Headwaters to mouth	Temperature	2		x	
26	17010304		Fishhook Creek	headwaters to mouth	Temperature	4		x	
27	17010304		Fly Creek	headwaters to mouth	Temperature	4		x	
28	17010304		Heller Creek	Headwaters to mouth	Temperature	4		x	
29	17010304		Loop Creek	Headwaters to mouth	Temperature	2,5		x	

	HUC	WQLSEG	Waterbody	Boundaries	Pollutant	Data Source	Currently listed for other pollutants		Boundary for other pollutants
							Yes	No	
30	17010304		Mosquito Creek	Headwaters to mouth	Temperature	4		x	
31	17010304		Simmons Creek	Headwaters to mouth	Temperature	4		x	
32	17010304	3579, 3580	St. Maries River	headwaters to mouth	Temperature	5	x		Clarkia to Mashburn (town), Mashburn (town) to St. Joe River
33	17010304	3594	St. Maries River, MF	Headwaters to St. Maries River	Temperature	2		x	
34	17040202		Duck Creek	Headwaters to mouth	Temperature	2		x	
35	17040202		Howard Creek	Headwaters to mouth	Temperature	2		x	
36	17040202		Targhee Creek	Headwaters to mouth	Temperature	2		x	
37	17040202		Timber Creek	Headwaters to mouth	Temperature	2		x	
38	17040202		Warm River	Headwaters to mouth	Temperature	3		x	
39	17040203	5231	Dry Creek	Headwaters to mouth	Temperature	3		x	
40	17040205	2044	Grays Lake Outlet	Grays Lake to Willow Creek	Temperature	7	x		Grays Lake Outlet to Above Falls
41	17040205		Rock Creek	Headwaters to mouth	Temperature	3		x	
42	17040205	35, 2037, 20	Willow Creek	Grays Lake Outlet to mouth	Temperature	3,7	x		Headwaters to Sellers Creek, Grays Lake Outlet to Ririe Reservoir, Ririe Dam to HUC boundary
43	17040207	5267	Brush Creek	Headwaters to Blackfoot River	Temperature	3	x		
44	17040209		Calf Creek	Headwaters to mouth	Temperature	3		x	
45	17040209		Holloway Canyon Creek	Headwaters to mouth	Temperature	3		x	
46	17040209	5273	South Fork Rock Creek	Headwaters to Rock Creek	Temperature	3	x		Headwaters to Rock Creek
47	17040209		Water Canyon Spring	Headwaters to mouth	Temperature	3		x	
48	17040211	5274	Mill Creek	Headwaters to mouth	Temperature	3		x	
49	17040212	5646	Cedar Draw Creek	Headwaters to Snake River	Temperature	3	x		Headwaters to Snake River
50	17040212	2379	Clover Creek	Pioneer Res. to Snake River	Temperature	3	x		Pioneer Res. to Snake River
51	17040212	5286	Deep Creek	Headwaters to Snake River	Temperature	4	x		High Line Canal to Snake River
52	17040212	5647	Mud Creek	Headwaters to Snake River	Temperature	3	x		Low Line Canal to Snake River
53	17040213		Hot Creek	Headwaters to mouth	Temperature	3		x	
54	17040217		Badger Creek	BLMFS Boundary to mouth	Temperature	10		x	
55	17040217		Barney Creek	Headwaters to mouth	Temperature	3		x	
56	17040217		Basin Creek	Headwaters to mouth	Temperature	10		x	
57	17040217		Big Creek	Headwaters to mouth	Temperature	1		x	
58	17040217		Big Creek	Headwaters to mouth	Temperature	10		x	
59	17040217		Big Springs Creek	Headwaters to mouth	Temperature	10		x	
60	17040217		Coal Creek	Headwaters to mouth	Temperature	10		x	
61	17040217		Deer Creek	Headwaters to mouth	Temperature	10		x	
62	17040217		Dry Creek	Headwaters to mouth	Temperature	10		x	
63	17040217		Fallert Springs Creek	Headwaters to mouth	Temperature	10		x	
64	17040217		Iron Creek	Headwaters to mouth	Temperature	10		x	
65	17040217	5660	Little Lost River	Headwaters to Big Springs Creek	Temperature	1,10	x		Headwaters to Big Springs Creek
66	17040217		Mill Creek	Headwaters to mouth	Temperature	10		x	
67	17040217		Smithie Creek	Headwaters to mouth	Temperature	10		x	
68	17040217		Squaw Creek	Headwaters to mouth	Temperature	10		x	

	HUC	WQLSEG	Waterbody	Boundaries	Pollutant	Data Source	Currently listed for other pollutants		Boundary for other pollutants
							Yes	No	
69	17040217		Summerhouse Canyon Creek	Headwaters to mouth	Temperature	10		x	
70	17040217		Summit Creek	Headwaters to mouth	Temperature	10		x	
71	17040217	5654	Summit Creek	Headwaters to Little Lost River	Temperature	1		x	
72	17040217		Timber Creek	Headwaters to mouth	Temperature	10		x	
73	17040217		Williams Creek	Headwaters to mouth	Temperature	10		x	
74	17040218		Leadbelt Creek	Headwaters to mouth	Temperature	3		x	
75	17040219		Big Wood River	Headwaters to mouth	Temperature	3	x		Little Wood River to Interstate, Highway 75 to Little Wood River, Magic Reservoir to Highway 75, Glendale Diversion to T1R18E35S, Trail Creek to Glendale Diversion
76	17040221	11, 2512, 25	Little Wood River	Headwaters to Big Wood River	Temperature	3	x		East Canal Diversion to Silver Cr., Silver Creek to Richfield (town), Richfield (town) to Big Wood River
77	17040221	5288	Muldoon Creek	Headwaters to Little Wood River	Temperature	3	x		S.Fk. Muldoon Creek to Little Wood River
78	17050101	2423	Alkali Creek	Headwaters to Snake River	Temperature	3	x		Headwaters to Snake River
79	17050101	2424	Little Canyon Creek	Headwaters to Snake River	Temperature	3	x		Headwaters to Snake River
80	17050101	2422	Ryegrass Creek	Headwaters to Cold Springs Creek	Temperature	3	x		Headwaters to Cold Springs Creek
81	17050102	2558	Clover Creek	Headwaters to Bruneau River	Temperature	3	x		71 Draw to Bruneau River
82	17050102		Jarbridge Creek	Headwaters to mouth	Temperature	3		x	
83	17050102	2555	Wickahoney Creek	Headwaters to 2.5 miles below headwaters	Sediment	1	x		2.5 miles below headwaters to Big Jacks Creek
84	17050103	2682	Brown Creek	Headwaters to Catherine Creek	Temperature	3	x		Headwaters to Catherine Creek
85	17050103		Cottonwood Creek	Headwaters to Succor Creek	Temperature	2		x	
86	17050103	2680	N.F. Castle Creek	Headwaters to Castle Creek	Temperature	1		x	
87	17050103	2674	Squaw Creek	Headwaters to Snake River	Temperature	3	x		Unnamed trib 3.9 km upstream to Snake River
88	17050107	6641	Cabin Creek	Headwaters to mouth	Temperature	1		x	
89	17050107		Corral Creek	Headwaters to mouth	Temperature	6		x	
90	17050107	2641	N.F. Owyhee River	Headwaters to Oregon Line	Temperature	1	x		Headwaters to Oregon Line
91	17050108	2648, 2649	Jordan Creek	Headwaters to Oregon Line	Temperature	1	x		Headwaters to Williams Creek, Williams Creek to Oregon Line
92	17050108	2662	Soda Creek	Headwaters to Cow Creek	Temperature	3	x		Headwaters to Cow Creek
93	17050112		Mores Creek	Headwaters to Arrowrock Res.	Temperature	3		x	
94	17050113	2588	Lime Creek	Headwaters to Anderson Ranch Reserv	Temperature	2		x	
95	17050113	2578	Smith Creek	Headwaters to S Fk Boise River	Temperature	2	x		Tiger Creek to S.Fk. Boise River
96	17050114	2728	Boise River	Barber Diversion to Star	Temperature	2	x		Barber Diversion to Star
97	17050114		Dixie Drain	Headwaters to mouth	Temperature	2		x	
98	17050114	2731, 2732	Indian Creek	Headwaters to Boise River	Temperature	3	x		Headwaters to New York Canal, New York Canal to Boise River
99	17050114	5637	Willow Creek	Headwaters to Boise River	Temperature	2,3	x		Headwaters to Boise River
100	17050121	2703	MF Payette River	Headwaters to South Fk Payette River	Temperature	3	x		Big Bulldog Creek to South Fk Payette River
101	17050122	5635	Big Willow Creek	Headwaters to Payette River	Temperature	3	x		Rock Creek to Payette River
102	17050123		Box Creek	Headwaters to mouth	Temperature	2		x	
103	17050123		Fall Creek	Headwaters to mouth	Temperature	2		x	

	HUC	WQLSEG	Waterbody	Boundaries	Pollutant	Data Source	Currently listed for other pollutants		Boundary for other pollutants
							Yes	No	
104	17050124	2840	Crane Creek	Headwaters to Weiser River	Temperature	3	x		Crane Creek Res. to Weiser River
105	17050124	2845	Little Weiser River	Headwaters to Weiser River	Temperature	3	x		Indian Valley to Weiser River
106	17050201		Wildhorse River	Headwaters to mouth	Temperature	2		x	
107	17060101		Snake River	Hells Canyon Dam to Salmon River	Temperature	8		x	
108	17060103		Snake River	Salmon River to Wash. State line	Temperature	8		x	
109	17060201		Squaw Creek	Headwaters to mouth	Temperature	3		x	
110	17060204	3065	Bohannon Creek	Headwaters to Lemhi River	Temperature	2		x	
111	17060204	3093	Eighteenmile Creek	Headwaters to Lemhi River	Temperature	2		x	
112	17060204	3072	Kerney Creek	Headwaters to Lemhi River	Temperature	2		x	
113	17060204	3061	Kirtley Creek	Headwaters to Lemhi River	Temperature	2		x	
114	17060204	7811	Lemhi River	Headwaters to Salmon River	Temperature	3	x		Conflu Texas & 18-mile Creeks to Salmon River
115	17060204	3084	Little Eightmile Creek	Headwaters to Lemhi River	Temperature	2		x	
116	17060204	3070	Sandy Creek	Headwaters to Lemhi River	Temperature	2		x	
117	17060204	3067	Wimpey Creek	Headwaters to Lemhi River	Temperature	2	x		BLM boundary to Lemhi River
118	17060209	3323	Deer Creek	Headwaters to Salmon River	Temperature	3	x		
119	17060209		Rock Creek	Headwaters to Salmon River	Temperature	3		x	
120	17060210		Big Creek	Headwaters to mouth	Temperature	3	x		Headwaters to Little Salmon River
121	17060210	2863	Little Salmon River	Headwaters to Salmon River	Temperature	3	x		Round Valley Creek to Salmon River
122	17060303	3257	Boulder Creek	Headwaters to Lochsa River	Temperature	1		x	
123	17060303	5037	Canyon Creek	Headwaters to mouth	Temperature	1		x	
124	17060303		Fish Creek	Headwaters to mouth	Temperature	1		x	
125	17060303	5080	Glade Creek	Headwaters to mouth	Temperature	1		x	
126	17060303	5137	Nut Creek	Headwaters to mouth	Temperature	1		x	
127	17060303		Placer Creek	Headwaters to mouth	Temperature	1		x	
128	17060303		Polar Creek	Headwaters to mouth	Temperature	1		x	
129	17060303	5183	S.F. Canyon Creek	Headwaters to mouth	Temperature	1		x	
130	17060303		Storm Creek	Headwaters to mouth	Temperature	1		x	
131	17060303	5068	W.F. Deadman Creek	Headwaters to mouth	Temperature	1		x	
132	17060303	5265	Walde Creek	Headwaters to mouth	Temperature	1		x	
133	17060305		Big Elk Creek	Headwaters to mouth	Temperature	9		x	
134	17060305		Little Elk Creek	Headwaters to mouth	Temperature	9		x	
135	17060306	5225	Big Bear Creek	W. Fk. Big Bear to Pollatch River	Temperature	1		x	
136	17060308	3193	Reeds Creek	Headwaters to Dworshak Reservoir	Temperature	3	x		Headwaters to Dworshak Reservoir

Total: 44 92

Data Sources:	# Listed by source
1. 1998 Idaho 303(d) List Package. IDEQ. January 4, 1999.	21
2. IDEQ thermograph data (1994 - 1997)	22
3. IDEQ BURP data (1996 - 1997)	43
4. Public Comment: Liz Sedler; Jan. 4, 1998; Panhandle Bull Trout TAT data	14
5. Public Comment: Liz Sedler; Jan. 4, 1998; IDEQ thermograph data (1997)	2
6. Public Comment: Idaho Conservation League; July 15, 1998; IDEQ thermograph data (1997)	1
7. Public Comment: Jay Kraayenbrink; Dec. 30, 1997; BLM thermograph data (1996)	1
8. Pottatch, 1998. 1997 Receiving Water Monitoring Report. Pottatch Corporation - Lewiston Co	2
U.S. Geological Survey, Water Resources Data for Idaho. Volume 2. http://www.streamnet.org/subbasin/crbtdata.html	
9. IDEQ continuous recordings, Grangeville office, 1992.	2
10 Little Lost River Subbasin Assessment. Idaho Division of Environmental Quality. August, 1998.	16
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