

**National Pollutant Discharge Elimination System Permit for  
South Fork Coeur d'Alene River Sewer District  
Mullan Wastewater Treatment Plant  
NPDES Permit No. ID-002129-6**

**Response to Comments**

**June 2004**

**U.S. Environmental Protection Agency, Region 10  
1200 Sixth Avenue  
Seattle, WA 98101**

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**RESPONSE TO COMMENTS**  
**for**  
**South Fork Coeur d'Alene River Sewer District**  
**Mullan Wastewater Treatment Plant**  
**(ID-002129-6)**

**I. INTRODUCTION**

A draft National Pollutant Discharge Elimination System (NPDES) permit to the South Fork Coeur d'Alene River Sewer District (hereafter referred to as 'the District') for the Mullan Wastewater Treatment Plant (WWTP) was issued for public notice on August 28, 2002. Draft NPDES permits for the Page WWTP and the City of Smelterville's WWTP were public noticed at the same time. The public notice was announced in the Shoshone News Press, Coeur d'Alene News and Idaho News Observer from August 28, 2002 to October 15, 2002 (45+ days). On October 1, 2002, the Environmental Protection Agency (EPA) held a public hearing for the draft NPDES permit and draft variances for the Page, Mullan and Smelterville WWTPs. On October 15, 2002 and November 29, 2002 the public notice period was extended in the same three newspapers and eventually expired on January 13, 2003.

This Response To Comments document is a summary of the federal and state actions that have influenced the final permit, significant comments related to the Mullan WWTP draft permit and EPA's responses to those comments. Actions by EPA and the State of Idaho have resulted in changes to the final cadmium, lead, zinc, ammonia, and total suspended solids effluent limits. In addition, public comments have also led to a number of changes to the Mullan WWTP final permit.

**II. FEDERAL AND STATE ACTIONS AFTER THE PUBLIC COMMENT PERIOD**

**A. Actions by EPA**

Since the public noticing of the draft permit, the EPA Region 10 Water Quality Standards Unit has approved state adopted site specific criteria for cadmium, lead and zinc and granted variances from those criteria where limits were developed. The EPA Region 10 has also approved state adopted criteria for ammonia. In addition, the Idaho Department of Environmental Quality (IDEQ) has submitted and EPA Region 10 has approved a Suspended Solids Total Maximum Daily Load (TMDL) for the Coeur d'Alene River. These federal actions have effected the conditions in the final permit as follows.

**1. Approval of Site Specific Criteria**

Two sets of (daily and monthly) water quality-based effluent limits for cadmium and zinc were included in the draft permit. One set was based upon Idaho's federally approved water quality criteria at the time and one set was based upon site-specific criteria (SSC)

for the South Fork Coeur d'Alene (SFCdA or South Fork) River provided by the state of Idaho. Two sets of limits were proposed in the draft permit, because at the time that the permits were drafted, EPA had not yet reviewed the proposed SSC and it was uncertain whether or not the SSC would be approved and thus become the basis for the final limits. Only one set of water quality-based limits for lead were proposed in the draft permit. These limits were based on Idaho's federally approved water quality criteria at the time. A second set of limits, based on the SSC, were not necessary because the reasonable potential to violate the proposed SSC for lead was not found.

After the public notice expired (February 28, 2003), EPA's Water Quality Standards Unit approved the SSC for the SFCdA River. EPA's approval of the SSC made them effective under the Clean Water Act (CWA) and therefore, the SSC are the criteria upon which the water quality-based effluent limits for cadmium and zinc in the final permit are calculated. The Fact Sheet for the draft permit described how the effluent limits based on the SSC were developed. Although the water quality-based effluent limits for cadmium and zinc are included in the final permit, they are not in effect until the variance expires (as explained below).

## **2. Granting of Variances**

The draft permit incorporated a proposed variance from the cadmium, lead, and zinc water quality standards that were the basis for the water quality-based effluent limits in the draft permit. The proposed variance was public noticed at the same time as the draft permit. The basis for the variance and limits that were to apply during the term of the variance were described in a Public Information document. On June 24, 2004 EPA granted the Mullan WWTP a five year variance from the cadmium and zinc water quality standards (i.e. SSC). As described previously, a variance was not needed from the lead SSC because effluent limits were not necessary. EPA determined that attaining the water quality standards upon permit reissuance was not feasible since it would result in "substantial and widespread economic and social impact." The variance, therefore, was retained in the final permit for the Mullan WWTP.

The average monthly zinc alternate limit that apply during the five year variance period has been corrected (See I.A.3 of this Response to Comments). Some of the variance requirements (e.g., specific infiltration/inflow reduction requirements) have also changed as a result of comments. The issuance of a cadmium and zinc variance to the District is a separate action than the reissuance of the NPDES permits. Therefore, the comments and responses related to approval/denial of variances have been provided in a separate response to comments document within the administrative record for the variances.

## **3. Correction Made to Alternate Zinc Limit**

As explained in Section VII.a of the Fact Sheet, alternate variance limits have been included in the permit based on the existing effluent water quality to prevent any worsening of current effluent quality. However, incorrect average monthly alternate zinc limits (concentration and mass-based) were mistakenly included in the Fact Sheet and

draft permit. The final average monthly alternate limit for zinc is 1610 µg/L (7.4 lbs/day). The corrected limits were calculated from the alternate maximum daily limit (of 3682 µg/L) using Table 5.3 of EPA's Technical Support Document (TSD). Slightly greater average monthly limits of 1832 µg/L (8.4 lbs/day) were in the draft permit, however because the alternate limits are based on Mullan's maximum discharge concentrations the corrected limits should also be easily achieved during the five year variance period.

**4. Approval of Suspended Solids TMDL**

The draft permit included two sets of mass-based (lbs/day) limits for total suspended solids (TSS). The first set was calculated using the technology-based concentration limits and the second set was calculated from the wasteload allocation (WLA) provided in a draft South Fork Coeur d'Alene River Sediment Subbasin Assessment and TMDL. At the time the permit was drafted, the IDEQ had not submitted the TMDL to EPA for approval. However, on June 19, 2003 IDEQ submitted the May 17, 2002 TMDL to EPA and on August 21, 2003 EPA approved the TMDL. Therefore, the final TSS mass-based limits (average weekly limit of 176 lbs/day and average monthly limit of 67.4 lbs/day) are based on the federally approved TMDL.

**5. Approval of Ammonia Criteria**

Two sets of (daily and monthly) water quality-based effluent limits for ammonia were included in the draft permit. One set was based upon Idaho's federally approved water quality criteria at the time and one set was based upon proposed criteria. Two sets of limits were proposed in the draft permit, because at the time that the permits were drafted, EPA had not yet reviewed the proposed criteria and it was uncertain whether or not it would be approved and thus used as the basis for the final limits. On November 12, 2002 (after the public notice expired), EPA approved the new ammonia criteria for the state of Idaho. EPA's approval of the SSC made them effective under the Clean Water Act (CWA) and therefore, the final effluent limits are based on the new criteria. Section IV.A of the Fact Sheet for the draft permit described the two sets of limits.

**B. Actions by the State**

After the public notice period for the draft permit ended and EPA reviewed and made changes to the draft permit, the proposed final permit was submitted to IDEQ for final 401 certification. Section 401 of the CWA requires EPA to seek certification from the State that the permit is adequate to meet State water quality standards before issuing or reissuing the final permit. The NPDES regulations (40 CFR 124.53) allow for the State to stipulate more stringent conditions in the permit, if the certification cites the CWA or State law references upon which that condition is based. In addition, the regulations require a certification to include statements of the extent to which each condition of the permit can be made less stringent without violating the requirements of State law.

The IDEQ issued a CWA final 401 certification of the Mullan NPDES permit dated March 30, 2004. The following summarizes the 401 certification requirements.

***Mixing Zones***

*The DEQ authorizes, pursuant to the Water Quality Standards IDAPA 58.01.02.060, the use of a 25% mixing zone for ammonia and chlorine.*

***Compliance Schedule***

*The DEQ authorizes a compliance schedule for meeting the new chlorine limits in this permit. Compliance with the limits will be required 4 years and 364 days after the issuance of the permit. Interim milestones will be established to track the District's progress but these milestones will not be part of the permit.*

EPA did in fact include annual reporting requirements in accordance with 40 CFR 122.47.

**III. RESPONSE TO COMMENTS ON THE DRAFT PERMIT**

Following are the significant comments received on the draft permit for the Mullan WWTP and EPA's responses. Comments received on the Fact Sheet have been addressed in this document to the extent they relate to the permit language/conditions because the Fact Sheet is a final document. Due to the volume and similar nature of the comments received, they have been organized according to subject matter. An individual commenter can be identified by the assigned number that is provided in parentheses before the summarized comment. All citizens that have commented either by letter, email or through oral testimony have been listed and assigned a number in Appendix A of this Document based on the date they were received by EPA.

**A. Economics**

1. Comment (5, 6, 7, 8, 9, 10, 11, 12, 15, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 40, 41, 43, 45, 46, 47) - The Silver Valley is an economically depressed area. Residents of the Silver Valley have already had a sewer rate increase and cannot afford another rate increase that would be needed to comply with the conditions in the draft NPDES permit. EPA must find another solution to the WWTP problems or seek money to pay for compliance with the permit elsewhere.

Response: EPA recognizes that the cost of complying with the conditions in the permit could impact the local community. It is not our intent to reissue permits that will result in widespread economic hardship. The CWA requires that limits in permits be stringent enough to meet federally approved state water quality standards and in some cases this can result in water quality-based effluent limits that can only be met through advanced wastewater treatment. Where achievement of a water quality-based limit will result in widespread economic and social impact, a facility may request and receive a variance from the limit.

EPA has approved the District's requested variance from the cadmium, and zinc water quality-based limits. This variance permits the Mullan WWTP to discharge at its current levels of these metals until permit expiration. During the five year variance period and as a condition of any variance renewal, the District must demonstrate that they have made reasonable further progress toward achieving the water quality-based limits. The draft permit included a number of conditions that would result in reasonable further progress being achieved. Comments were received about the cost of implementing these conditions, particularly the infiltration/inflow (I/I) reduction requirements. Many of the conditions have been revised based on comments from the District (see responses to comment #'s 49, 50, 51, 52). EPA believes that the variance conditions included in the final permit will allow for reasonable further progress without resulting in undue economic impact to the community.

To assist the facility in meeting the final permit requirements, mixing zones for chlorine and ammonia have been provided. In addition, some of the monitoring requirements have also been reduced (see response to comment #s 37, 40). See also response to comment #3.

2. Comment (21, 37) - We cannot afford another unfunded mandate that is defined as more than the 2.5% allowed for this under the National Affordability Standard. Your agency is obligated to comply with this standard. A reasonable solution would be for EPA to allow the sewer district to comply with "interim levels" (demonstrated capability) of performance until they can afford the necessary technology to be in compliance with the proposed permit levels.

EPA did not bring up the currently ongoing national conversation about water-related affordability and reasonable and just costs. The creation of a new national standard for arsenic in drinking water appears to have launched a serious debate on affordability issues, particularly in relation to small systems and populations (commenter 37 then cites five documents). These and other documents suggest that affordability ranks high on the agenda of nation water-related issues. Although most of the national conversation has focused on drinking water, the drinking water affordability debate raises the same issues as are raised regarding wastewater: of need, cost-keyed technology, and civic ethics. The implication, is that our national disposition toward water-related issues is up for debate and subject to reshaping over the next few years. Important issues are on the national agenda, and it can be anticipated that some of these issues will bring changes in national policy and perspective at EPA. What is the significance of these facts with respect to the NPDES process currently ongoing in the Silver Valley? EPA did not distance themselves from an ironclad rendering of water-related standards in light of still unresolved national affordability issues. In making us aware of this national conversation, EPA would have taken the role of a partner in the problems posed by

wastewater needs, technology, and costs.

Response: The Mullan NPDES permit includes alternate levels of performance for cadmium and zinc because the WWTP cannot currently comply with the final water quality-based limits. The alternate limits for cadmium and zinc were provided as a condition of the variance and are based on current performance. The Public Information Document on the variance proposals for Page, Smeltonville, and Mullan discussed in detail how the alternate limits were developed. The alternate limits expire five years (minus one day) from the reissuance date of the permit.

As a point of clarification, the Unfunded Mandates Reform Act (UMRA) of 1995 only requires economic assessments for the development of new regulations (such as water quality standards). The water quality standards for Idaho were already subject to economic analysis prior to their adoption. Reissuance of the Mullan WWTP NPDES permit is not however a rulemaking action. Therefore, the CWA and NPDES regulations still require that effluent limits be based on state water quality standards. When new regulations are developed, such as new technology-based limits for publically owned treatment works, the UMRA requires that Federal agencies assess their effects on State, local, and tribal governments and the private sector. In particular, the UMRA requires that agencies prepare a written statement to accompany any rulemaking that “includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100,000,000 or more (annually adjusted for inflation) in any one year” (Section 202(a)). Additional information can be found in the following EPA document:

U.S. Environmental Protection Agency. March 1995b. *Interim Guidance on the Unfunded Mandates Reform Act of 1995*. Washington, DC: Office of General Counsel.

Economics can come into play if a variance is requested. The District requested a variance from the cadmium and zinc water quality standards based on “substantial and widespread economic and social impact.” The request included supporting information so that EPA could perform an economic analysis for those standards. See also the responses to comments 5 and 6 below.

3. Comment (24) - We do not see evidence of a water quality crises. We do support a continuing effort to improve the water quality. Five year permits should be affordable, and considerate to individual site specific characteristics.



Response: The South Fork Coeur d'Alene River is impaired (i.e., does not meet water quality criteria for the protection of cold water aquatic life) for metals and sediment. Therefore, EPA is particularly concerned about the discharge of those pollutants.

Reissuance of a new permit to the Mullan WWTP is part of a continuing effort to improve water quality in the Coeur d'Alene basin. The effluent limits in the permit were developed to achieve water quality standards, as required by the CWA. As discussed in response to comment #1 above, EPA included flexibility in the permit where we were legally able to (e.g., granting the variance and use of mixing zones) which took into account the specific circumstances of the Mullan facility and receiving water. In addition, EPA approved site specific criteria for cadmium, lead and zinc because testing conducted on local aquatic life demonstrated that greater concentrations of these metals can be tolerated. At the same time, EPA must ensure that the permit requirements for the Mullan WWTP are consistent with those required of similar facilities in Idaho. EPA believes that the final permit appropriately balanced these three needs; 1) it is compliant with the CWA and therefore protective of water quality; 2) it is consistent with what is required of similar facilities; and, 3) it incorporates facility-specific characteristics and accounts for the local economic situation.

4. Comment (42) - What is the projected capital and operating cost per pound of metal removed as a result of imposition of the permit limits?

Response: Cost information was provided in the Public Information Document associated with the variance. The District indicated in their variance request that if sulfide precipitation was used to treat metals to water quality-based concentrations then the capital cost for Mullan would be approximately \$7,236,000 and the annual operating cost would be approximately \$50,000. In addition, the EPA estimates that the capital cost of alternate pollution control processes would be approximately \$4,897,588 and the annual operating cost would be approximately \$70,187.

However, these cost estimates are not related to the final permit conditions because five year variances were provided from the water quality-based limits for cadmium and zinc. During the next five years, the District is expected to make progress toward achieving the water quality-based limits by limiting the source of the metals through infiltration of groundwater to the collection system. Because there are no industrial sources of metals to

the WWTP, the District surmises that metals are entering the collection system through leaky pipes that are located underground. The repair of these pipes is expected to dramatically decrease the amount of metals found in the WWTPs effluent.

5. Comment (37) - EPA did not provide a wider regional, state, and national context for projected costs and affordability for meeting prospective NPDES wastewater standards. I have seen nothing in EPA's discussion of the financial burdens that would place our situation in a wider regional, state, or national comparative context. Hence, we do not know, for example, where on the bell-curve of variation in wastewater costs the projected new costs for Silver Valley residents would place our communities – would we be near the norm, out one standard deviation, two, or more (taking into consideration median household income)? This contextual knowledge is important because such knowledge would allow us to gauge, in effect, “how extraordinary” our projected cost circumstances would be. In light of that knowledge, moreover, we would be better able to assess how extraordinary our funding and community response to these new challenges will have to be.

Response: The EPA does not require facilities to submit information regarding how much it costs to meet water quality standards. In fact, some facilities would consider this information confidential. Therefore, EPA does not have access to such cost information in order to compare costs between facilities in different states or regions.

When granting a variance however, the EPA does consider the prospective adverse impact facing the communities should they have to comply with water quality-based effluent limits. To assist in this effort, EPA does have guidance that allows assessment of how the cost of meeting standards will impact the affected community. This guidance is called *Interim Economic Guidance for Water Quality Standards Workbook* (EPA-823-B-95-002, March 1995). EPA uses this guidance when a permittee requests a variance from water quality standards to determine whether or not compliance with water quality standards will result in substantial and widespread economic and social impacts.

The District requested a variance from the cadmium and zinc water quality standards and provided EPA with cost information. EPA reviewed the cost information consistent with the above guidance and determined that a variance from these standards is appropriate. EPA's economic evaluation is discussed in detail in the Public Information Document on the variance proposals that was issued for public comment at the same time as the draft permits. In the socio-economic analysis, comparisons were made using certain community information and similar state information. So even though EPA did not compare the Mullan WWTP's costs with those for other facilities, EPA did evaluate how it would affect the local community within the state context. Since variances based on economic and other factors are rarely issued, one can correctly assume that the situation in the South Fork is indeed extraordinary as postulated by the commenter.

6. Comment (37) - EPA did not conduct a review aimed at framing new NPDES financial burdens in the entire aggregate of regulatory and Superfund-related financial costs being imposed on this community. EPA is well aware that the potential financial burdens imposed by the new permits represent just one of a considerable array of new financial burdens EPA has brought to the Silver Valley. Any assessment of the reasonableness or fairness of the new NPDES burdens should also include an awareness of other financial burdens EPA has recently imposed on our communities.

Response: EPA's economic evaluation of Mullan's variance request did take into consideration the current economically depressed state of the community, which indirectly takes into consideration preexisting Superfund-related costs. Based on the information already provided by the communities, EPA concurs with the communities that a variance should be granted and therefore, no additional information is necessary for considering the variance request.

7. Comment (13, 29, 32, 45) - If any part of the sewer contamination is due to historic mining practices, then EPA should help fund the solution. The Sewer Districts do not produce metals and their customers do not contribute them to the system. The reduction of metals is a much larger problem than the Sewer Districts should be expected to solve. The responsibility for cleanup work should be accomplished by the Record of Decision (ROD).

Response: The EPA assumes that most of the cadmium, lead, and zinc being discharged by the Mullan WWTP is a result of historical contamination from mining because much of the 25 year old collection system was constructed on tailings. The District is not required to remediate this

contamination (eg., remove the tailings or remove metals from ambient groundwater). The District is responsible however for properly operating and maintaining their sewer systems which includes reducing I/I from the collection system.

8. Comment (16) - We should adhere to higher standards. If you want us to do it now, then EPA should pay for it. Otherwise, give our people the time to line up the money to do the job.

Response: The EPA has provided the District with ample time to find funding sources to repair an overtaxed collection system and treatment plant. The NPDES permits program is not organized to provide funding for municipalities or industry to address compliance needs. The EPA suggests that the District contact the state of Idaho about funding sources, including the state revolving loan funds (SRF), state community block grants and US Rural Development grants. Other possible sources of funding might be other Federal agencies, such as the United States Department of Agricultural, Rural Development grant and loans.

**B. EPA should work with the States and Communities**

9. Comment (14) - EPA officials should allow the state and local officials the time to come up with the money and a solution that “fits” the South Fork and the Silver Valley communities that will be affected by unattainable standards.

Response: EPA provided the public and local officials an extensive amount of time to comment on the draft permit (138 days). The state had an additional 30+ days. The comment period was extended twice to accommodate requests for extensions. The EPA communicated with the state and permittees regarding the new permit conditions and options for requesting variances. The district has been provided ample time to find solutions (also see response to comment #8 above) .

10. Comment (18, 28) - EPA should work with the sewer districts to address the problems.

Response: The sewer districts provided comments on the draft permits, many of which were incorporated into the final permits. EPA met with the sewer districts before, during, and after the comment period to discuss their concerns. Lack of resources make it difficult for EPA to work with the sewer districts on a face-to-face basis, therefore much of the communication regarding the permit was by phone, email or letter.

Although less than 20 people in EPA are directly responsible for permit issuance and compliance for thousands of facilities in Idaho, Alaska, Washington, and Oregon EPA personnel are available to discuss permit issues and problems over the phone.

11. Comment (35) - Relative to TMDLs and the NPDES permits, EPA has had no partnership with the people in our communities and is severely damaging our way of life.

Response: The NPDES permits for the Page, Mullan and Smeltonville WWTPs do not contain conditions related to the Coeur d'Alene basin TMDL for metals. However, the EPA has made every effort to keep the Silver Valley citizens apprised of the NPDES permits. Legal notices and display ads were published in the three local papers (Shoshone News, Coeur d'Alene Press and Idaho News Observer) notifying people of the draft permits, their contents, any extensions to the comment period, and requesting comments. Draft permits, public notices and notification postcards were mailed to thousands of interested parties letting them know of the draft permits. Press releases were provided to the local communication media to inform them of the draft permits. A public hearing was conducted at the Silver Hills Middle School in Osburn where testimony was heard, the permits were explained, and questions were answered. A document was developed and made available at the hearing and on EPA's permits website at [www.epa.gov/r10earth/water.htm](http://www.epa.gov/r10earth/water.htm) that contained frequently asked questions and answers regarding the NPDES permits. The NPDES permits program is designed to protect and repair degraded waters for their intended use (in this case secondary recreation (boating and fishing), cold water aquatic life, agricultural and industrial water supply, habitat and aesthetics).

12. Comment (29, 44) - There are numerous agencies or entities currently working on projects that will impact or be impacted by the permits. Collectively, the amount of money that will be spent is staggering. It is extremely important that the local community as well as the various, State and federal agencies get the most they can from what will be invested. Coordination must occur amongst EPA Superfund; the IDEQ Sewer, Water, and Superfund Divisions; local cities and Shoshone County; local water districts; those communities associated with the Consolidated Bunker Hill Infrastructure and Revitalization Plan; Panhandle Health District and the Institutional Controls Program (ICP); and local residents. This coordination must occur such that economic development occur. The ICP administrator for the Panhandle Health District would like to be contacted to work on an inter-governmental group to help coordinate activities.

Response: The EPA agrees that a significant amount of money is and will continue to

be spent in the Silver Valley. EPA agrees that excellent coordination and communication is needed in order to make the most of all of the activities underway in the Basin and EPA will provide whatever information is requested by those affected parties. The permits unit is aware of an existing inter-governmental coordinating group; the “Basin Environmental Improvement Project Commission.” This cross governmental partnership consists of representatives from the State of Idaho, the State of Washington, the Coeur d'Alene Tribe, the federal government, and three Idaho Counties (Benewah, Shoshone and Kootenai). The Commission was created by the Idaho legislature to address heavy metal contamination in the Coeur d'Alene Basin and is tasked to apply the clean up plan, set priorities, and create a forum for community and technical input. The EPA continues to value the permitting and inspection procedures, monitoring, educational efforts and records maintenance conducted by the ICP in the Bunker Hill area.

13. Comment (45) - It would seem, once again, that the communities most impacted by the enforcement of these permits were never consulted by the agencies imposing them. When the Sewer Districts were told that they would be included in the process of formulating the permits, they rightly thought their experience and expertise would be used. Yet, they were not asked for information and/or input. In fact, they were all but ignored. We insist that the comments of the Districts officials, Mr. Ross Stout and Mr. Lee Haynes, are respected and applied.

Response: The municipalities were requested to provide information and input prior to and during the comment period and the comment period was extended twice at the municipality's request. The municipality's comments were incorporated into the final Page, Mullan and Smeltonville permits, where this could be done in a manner that was consistent with the CWA, Idaho's water quality standards, and NPDES regulations. Also see response to comment #10 above.

### **C. More Time Needed**

14. Comment (28) - I believe that there should be at least a two year moratorium on the new proposals. The real need for any new standards must be reevaluated with open dialogue between EPA and the districts impacted before putting an additional financial burden on the citizens.

Response: The cadmium and zinc variance allows time (approximately five years) for the treatment plant to come into compliance with the final water quality-based effluent limits for these pollutants. While this is not a moratorium,

it does allow the facility the time to determine the most cost effective way to meet the effluent limits, or reapply for an additional variance.

15. Comment (30) - Although I support your efforts to phase in the new standards for the permits and variance, the wastewater treatment plants should be offered the opportunity to apply for financial grants for implementation, and a realistic phased schedule of improvement should be considered for implementation of these standards. At present, any additional taxation could be devastating to our economic development. Given time to bolster our tax base and create jobs, I am sure we can be proactive concerning the mandates of the Clean Water Act.

Response: Many of the permit variance requirements have been revised according to comments provided by the District to allow for I/I reduction efforts that are already planned and funded and more time provided for those efforts that are not yet funded (see response to comment # 49, 50, 51, 52). The variance requirements need to be included in the permit so that the permittee can demonstrate reasonable and further progress toward achieving water quality standards. It is important to include requirements in the permit to provide incentive for obtaining funding since there is a greater chance that funding will be obtained if it is a permit requirement.

#### **D. Contribution of Municipal Treatment Plant Discharges**

16. Comment (9) - The sewage treatment plants are not hurting anything. We are polluted by hundreds of years of mining. The permit does not resolve the problems. The problems lay upstream and are environmental as well as residential.

Response: EPA agrees that historic mining practices such as tailings disposal contribute significantly to metal contamination in the River. However, permitted point sources, including the municipal WWTPs, discharge metals at levels that exceed state water quality standards. These metals standards were adopted in order to protect aquatic life in the River. Therefore, even if the historic sources of contamination were removed, the discharge from the WWTPs would still need to be limited to maintain water quality standards. The CWA requires that point sources that discharge to waters of the United States obtain NPDES permits that include limits stringent enough to maintain water quality standards. This requirement is irrelative of the contribution of the permitted discharge to the pollution in the river. EPA believes that reductions in metals loading from the permitted point sources and from historic sources should proceed on a parallel path. The NPDES permit for the Mullan WWTP expired in October 1990 and therefore, is overdue for reissuance.

17. Comment (33) - So many of the contaminants in our water are naturally occurring and will be here even if no people lived in this area.

Response: Some of the pollutants of concern in the permit and South Fork Coeur d'Alene River are naturally occurring. However, background (i.e., natural) levels of those pollutants are much lower than the existing water quality in the River and are lower than the water quality standards that were adopted by the state (and approved by EPA) to protect aquatic life. Both the Coeur d'Alene River Basin TMDL and Superfund Remedial Investigation/Feasibility Study (RI/FS) estimated natural background conditions for the South Fork Coeur d'Alene River. The TMDL estimated natural background levels as 0.06 µg/L for cadmium, 0.18 µg/L for lead and 5 µg/L for zinc. These natural background values demonstrate that the current levels of pollutants in the water are not substantially due to natural background, but instead are due to historical contamination and current discharges to the system.

18. Comment (35) - There is no “bang for the buck” for saddling residents with millions of dollars of costs to control levels of metals that are averaging less than 0.5% of the total immediately downstream of the Bunker Hill box. There will be “bang for the buck” if EPA controls its own metals contribution within the “Box”. The “Box” cleanup is by far the largest source of dissolved metals to the South Fork River.

Response: The EPA is not sure where the commentor came up with the percentage of contribution downstream of the Bunker Hill Box but the EPA agrees that the “Box” is a larger source of metals to the South Fork Coeur d'Alene River than the municipal WWTPs. However, the discharge from the Mullan WWTP is also a source of metals to the River and the CWA requires that NPDES permits include effluent limits to meet state water quality standards. See also response to comment #16.

19. Comment (35) - EPA has placed an inordinate amount of weight to these NPDES permits relative to the newly and radically expanded Bunker Hill Basin Superfund Site.

Response: EPA believes that the Superfund actions and NPDES permitting are both important factors in improving water quality in the Coeur d'Alene basin and that Superfund and NPDES actions should occur on a parallel path. The Superfund cleanup plan is focused on addressing contamination from historic mining practices. Superfund cleanup actions will not address currently operating facilities, nor does the presence of a Superfund action negate the NPDES regulatory requirements. It is hoped that the Superfund



cleanup, which includes remedial actions at a cost of \$349 million over the next 30 years, will provide significant improvements in water quality in the Basin.

20. Comment (42) - What is the projected reduction of metals load to the river that would result because of the imposition of the more stringent chronic aquatic standards to these discharge permits?

Response: EPA granted a variance from the water quality standards for cadmium and zinc for the Mullan WWTP. That means that discharges from the facility will not have to meet the acute or chronic water quality standards (i.e., site specific criteria) while the variances are in effect. Instead the facility must ensure that the discharge of these metals do not increase and must work to reduce I/I. It is not possible to predict what metals reductions will result from I/I activities throughout the five year permit cycle. However, the effluent monitoring for metals that is included in the permit will allow EPA to determine how I/I activities impact metals

#### **E. South Fork Coeur D'Alene River Water Quality**

21. Comment (14, 28) - I have seen a huge change for the better in the water quality of the South Fork from Pinehurst to Enaville since 1978.

Response: Comment noted. While water quality may have improved, the South Fork Coeur d'Alene River still exceeds the cadmium, lead, and zinc water quality criteria that were adopted by the State of Idaho to be protective of cold water aquatic life.

22. Comment (45) - What is wrong with the South Fork Coeur d'Alene River as it exists now? Over the last 30 to 40 years we have witnessed an incredible reversal of the previously undesirable characteristics of the stream. Much of this reversal has occurred naturally, long before the presence of the regulatory agencies. Contrary to EPA publications, those of us who live here can testify to the fact that much of the river supports a very healthy fishery and it continues to improve. The current impact of the sewage treatment plants to the river continues to allow for an improving river condition.

Response: The South Fork Coeur d'Alene River above Mullan supports a generally healthy fish community dominated by native species. However, the fish community is impacted in the South Fork below Mullan. The South Fork below Mullan exceeds water quality standards (i.e., the site specific criteria) for cadmium, lead, and zinc. These standards were determined to

have both a lethal (acute) and reproductive (chronic) effect on locally found aquatic life. The Record of Decision (ROD) for The Bunker Hill Mining and Metallurgical Complex Operable Unit 3 (September 2002) estimates the average concentrations in the South Fork at Pinehurst to be 9.1 µg/L cadmium, 56 µg/L lead, and 1,430 µg/L zinc using data from 1991 to 1999. More details regarding ecological risk can be found in Section 5 and 7 of the decision summary in the ROD.

## **F. Water Quality Standards**

23. Comment (13, 32) - Economic difficulty is not a sufficient reason to waive clean water standards. I would like to urge you to maintain clean water standards for the entire valley. Are the proposed standards applied nationally? Are all communities expected to comply or are a larger percentage of communities receiving waivers? If the discharge limits required by the proposed permits are safe, reasonable, universal, and technically achievable then it should be applied to the South Fork Coeur d'Alene Sewer District just as it would be to any other geographical area.

Response: The water quality-based effluent limits and other permit conditions included in the permit for the Mullan WWTP are consistent with requirements for other similar sized municipal dischargers permitted under the NPDES program in Idaho. However, conditions specific to the Mullan WWTP and the economic situation of communities served by the Mullan WWTP, warranted the need for a variance from the water quality-based effluent limits for cadmium and zinc. The Mullan WWTP will not be receiving a variance from any of the other limits and permit conditions. The cadmium and zinc variance was warranted since compliance with the effluent limits would have resulted in substantial and widespread economic and social impact. Federal regulations allow for such a variance in this specific situation. The source of the metals is due to extensive historic contamination of the soils and groundwater which enters the sewer collection system via infiltration and inflow (I/I). This problem is not easily corrected. While the permit does not require that the Mullan WWTP meet water quality-based limits for the discharge of cadmium and zinc immediately, it does require progress toward reducing I/I.

Variations from water quality standards have not been granted for other municipal WWTPs in Region 10 (Alaska, Idaho, Washington, and Oregon) because no other WWTPs have applied for variances. Other municipal WWTPs do not face the combination of extensive groundwater contamination entering the sewer systems and the substantial economic hardship in the communities served.

24. Comment (35) - There has been no public comment on the basis documentation for determining the site-specific criteria. EPA needs to provide for public comment basis and decision documents for the implementation of Gold Book or SSC limits.

Response: The State of Idaho adopted the SSC on November 9, 2001 and was effective upon the adjournment of the 2002 Idaho Legislative Session. Prior to their adoption, the State held a public comment period from August 1, 2001 to September 24, 2001. This was published in the August 1, 2001 Idaho Administrative Bulletin. The State responded to comments received during the comment period. The EPA directs the commenter to the administrative record for the SSC which sets forth the basis for the SSC. EPA approved the SSC on February 28, 2003. EPA is not required to take public comment on approval of Idaho's criteria, since the criteria has already been subject to comment during the State adoption process.

#### **G. Wastewater Treatment Plant Chemicals**

25. Comment (14) - I'm sure the EPA is concerned about the high levels of some elements that are probably utilized in wastewater treatment. The chemicals or by-products end up in the river ecosystem and may be harmful to fish and aquatic life; however, if there's a choice between the elements and the fecal coliform contamination downstream...that's not a choice.

Response: The EPA is equally concerned about those pollutants that effect human health (i.e., recreation, drinking water and fish consumption) as well as those that effect aquatic life. Therefore, EPA has included effluent limits on both total residual chlorine as well as E. coli.

## H. Flow Used to Calculate Limits

26. Comment (17): The draft permit uses the lowest recorded flow in the South Fork River for both dry weather and wet weather as the basis for the permit. However, this is excessively conservative. Instead, the 7Q10 flow should be used. This increases the low flow to approximately 11 cfs and the wet weather low flow to 22 cfs.

Response: In order to develop water quality-based effluent limits where a mixing zone is or will be provided by the state, worst case low flow conditions need to be utilized. This ensures that the permit limits are protective of the use of the receiving water during nearly most flow conditions. Low receiving water flows (1Q10s<sup>1</sup> and 7Q10s<sup>2</sup>) are generally calculated using a minimum of 20 years of flow data since this is the minimum number of years to determine accurate values. However, the closest and most representative upstream United States Geological Survey station (#12413040, South Fork Coeur d'Alene River above Deadman Gulch near Mullan) only has one and one-half years of flow data (from October 1998 through April 2000). When EPA has less than 20 years of data, critical low flows are estimated using the lowest available daily flow. Therefore a critical low flow of 9.2 cfs has been estimated using the lowest available daily flow. This flow was used to develop the effluent limits for chlorine and ammonia, since a mixing zone was certified for these parameters.

## I. Total Residual Chlorine

27. Comment (17): The District has historically had a technology-based limit of 0.5 mg/L of total residual chlorine. Since the draft permit places new much stricter limits on chlorine levels of the wastewater based on water quality criteria, a compliance schedule is needed. Since I/I reduction is critical for meeting the permit, any compliance schedule will need to be tied to reduction of I/I.

Response: The EPA agrees that the Mullan WWTP can not immediately meet the draft and final chlorine limits using their current operations. This statement is based on previous discharge monitoring reports for the Mullan WWTP from December 1994

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<sup>1</sup> A 1Q10 is the 1-day, 10-year low flow that is used for the protection of aquatic life from acute effects. It represents the lowest daily flow that is expected to occur once in 10 years.

<sup>2</sup> A 7Q10 is the 10-year low flow that is used for protection of aquatic life from chronic effects. It represents the lowest 7-day average flow expected to occur once in 10 years.

through February 2000. A compliance schedule has been provided by the state of Idaho through their 401 certification and incorporated into the final permit. See Section II.B above.

28. Comment (17): The proposed chlorine levels for the Mullan plant are lower than the sensitivity of field test equipment. This results in potentially erroneous readings without very sensitive testing equipment and specialized testing protocols.

Response: The EPA agrees that the average monthly and daily maximum total residual chlorine limits that are found in the fact sheet and draft permit are not quantifiable (i.e., detected) using EPA approved test methods. However, EPA is required (See 40 CFR 122.44(d)) to include limits in NPDES permits that are the more stringent of technology-based and water quality-based limits. Therefore, because the water quality-based chlorine limits are more stringent they must remain in the final permit.

The inability to monitor to the necessary level of detection has been addressed in the Fact Sheet and draft and final permit by establishing a minimum level (ML). The ML has been set as the compliance evaluation level. Therefore discharges at or below the ML would be considered in compliance with the effluent limit. Footnote 9 in the draft permit states that “the EPA will use the minimum level (ML) of 0.1 mg/L as the compliance evaluation level.” Therefore, if effluent monitoring for chlorine indicates a value less than 0.1 mg/L, then EPA assumes the facility is in compliance with its concentration limits for chlorine. Similarly, the EPA assumes the facility is in compliance with its average monthly and maximum daily mass-based limits if the calculated mass-based limits are less than 0.46 lbs/day when the effluent monitoring measures less than 0.1 mg/L.

29. Comment (17) - The proposed limits mean that the Mullan WWTP will have to either dechlorinate or switch to UV disinfection at a cost of \$560,000.

Response: Although the EPA is sympathetic to the challenges faced by the District, the CWA was developed such that NPDES permits are protective of the designated uses of the receiving waters. Therefore the total residual chlorine limits in the final permit are necessary to protect aquatic life. Municipal permits in Idaho always contain total residual chlorine limits if chlorine is used for disinfection and past data demonstrates the reasonable potential to violate state water quality criteria.

30. Comment (17) - The chlorine limit is based on the lowest recorded flow in the receiving water. Peak discharges from the WWTP correspond to peak flows in the river, therefore the limits should be based on plant flow tiers.

Response: The closest upstream United States Geological Survey (USGS) station (#12413040, South Fork Coeur d'Alene River above Deadman Gulch near Mullan) was operational from October 1998 through April 2000 and is not expected to resume activity. If flow tiered effluent limits were developed based both on the effluent flow as well as the river flow, then flow monitoring would be required at the Mullan station. The District has not expressed an interest in taking on the responsibility of this additional monitoring.

Therefore, in response to the comment EPA calculated effluent flow tiered limits based on two different seasons. The seasons were determined by analyzing the existing flow data in the SFCDA River and choosing a high flow season and a low flow season (see appendix B for details). Limits were then calculated using the two seasons and two different effluent flow tiers (based on half of the design flow of the WWTP). The limits are as follows:

<b>Effluent Limitations for Chlorine</b>			
<b>Parameter</b>	<b>Effluent Limitations</b>		
	<b>Maximum Daily</b>	<b>Average Weekly</b>	<b>Average Monthly</b>
Total Residual Chlorine <u>March 1 - August 30</u> ≤ 0.25 mgd	0.177 mg/L 0.37 lbs/day	---	0.106 mg/L <sup>1</sup> 0.22 lbs/day
> 0.25 mgd and ≤0.55 mgd	0.089 mg/L <sup>1</sup> 0.18 lbs/day		0.0529 mg/L <sup>1</sup> 0.24 lbs/day
<u>September 1 - February 30</u> ≤ 0.25 mgd	0.102 mg/L <sup>1</sup> 0.21 lbs/day		0.0609 mg/L <sup>1</sup> 0.13 lbs/day
> 0.25 mgd and ≤0.55 mgd	0.0544 mg/L <sup>1</sup> 0.25 lbs/day		0.0325 mg/L <sup>1</sup> 0.15 lbs/day
Footnote: 1 The effluent limit for total residual chlorine is not quantifiable using EPA approved test methods. Therefore, the EPA will use the minimum level (ML) of 0.1 mg/L as the compliance evaluation level.			

Because the newly calculated flow-tiered limits are also not quantifiable using EPA approved test methods (see comment #29), and therefore pose no benefit to the permittee, the EPA has retained the limits contained in the draft permit. The final limits are as follows:

<b>Final Effluent Limitations for Chlorine</b>			
<b>Parameter</b>	<b>Effluent Limitations</b>		
	<b>Maximum Daily</b>	<b>Average Weekly</b>	<b>Average Monthly</b>
Total Residual Chlorine	0.055 mg/L <sup>1</sup> 0.25 lbs/day	---	0.033 µg/L <sup>1</sup> 0.15 lbs/day
Footnote: 1 The effluent limit for total residual chlorine is not quantifiable using EPA approved test methods. Therefore, the EPA will use the minimum level (ML) of 100 µg/L as the compliance evaluation level. If the test method indicates a value less than the ML, then the compliance evaluation level for the average monthly and maximum daily limits are 0.46 lbs/day.			

## **J. Metals Limits**

31. Comment (17): Proposed metals limits are based on Gold Book criteria that are more stringent than even the proposed TMDL limits. Very few technologies are able to remove metals to this level and those cannot function under the high peak flows that the District experiences. These permit levels were initially higher based on the TMDL. However, the TMDL was thrown out due to a legal challenge. Until the TMDL issue is resolved, metals should not be a part of the District's permit.

Response: The August 18, 2000 Coeur d'Alene River Basin Total Maximum Daily Load (TMDL) included wasteload allocations for cadmium, lead and zinc and was developed because the South Fork River is listed under Section 303(d) of the CWA as not attaining Idaho's water quality standards for heavy metals. However, on September 6, 2001 the Coeur d'Alene River Basin TMDL (for state waters only) was declared null and void in Idaho 1<sup>st</sup> District Court. The State Supreme Court upheld this decision in April 2003 following an appeal by the state.

Although the TMDL is not in effect in state waters, the South Fork Coeur d'Alene River is still impaired for metals. Because the permittee's discharge contains metals it has the potential to cause or contribute to the impairment. In February 2003, EPA approved the SSC for cadmium, lead,

and zinc. The effluent limits based on the SSC will, therefore, be the final limits included in the final permit. SSC limits for lead and zinc are higher than those based on Idaho's previous water quality criteria (i.e., Gold Book). Even though the SSC limits are higher, EPA recognizes that achieving the SSC-based limits could result in substantial and widespread economic impacts. EPA, therefore, has granted a variance as to these metals. The alternate limits that the Mullan WWTP will have to meet during the effective term of the variance are based on their current performance.

32. Comment (24) - We question your identifying limits based on Gold Book standards which, in our judgement, exceed the proposed TMDL limits and documented background levels. A facility plan conducted in 1999, identified metal treatment alternatives. Unfortunately, none of the available technologies that met the standards are considered an economic feasible cost to the rate payers.

Response: The water quality based-limits in the final permit for cadmium and zinc are based on the SSC. The first set of limits found in the draft permit that were based on Idaho's previous metals criteria were replaced when the State and EPA approved the SSC. As discussed in Section II.A above and in response to previous comments, EPA has granted a variance for cadmium and zinc, so the facility will not have to meet the water quality-based limits upon permit issuance, but instead will have to maintain their current performance. EPA granted the variance because we agreed that the metal treatment technologies to meet the standards would cause widespread economic and social impact.

#### **K. Percent Reduction Limits**

33. Comment (17); The peak flow rates make compliance with the minimum 85% removal criteria difficult. During these peak flows, the influent wastewater is very dilute so it is difficult to remove 85% of the influent solids and biological material. Ultimately the District intends to reduce I/I. This reduction will improve compliance with the percent removal criterion. In the interim, the percent removal should be eliminated as a permit condition in flows exceeding 0.6 mgd. Above this flow, the District will discharge fully treated wastewater and be significantly under the BOD and TSS effluent limits, but cannot meet the 85% removal criterion.

Response: The 85% removal requirements for BOD and TSS are based on effluent limitations guidelines found in 40 CFR 133.102. These technology-based requirements are for all secondary treatment plants. Because technology-based requirements are determined achievable by common wastewater



treatment technology, they identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD<sub>5</sub> and TSS. Section 301 of the CWA established these effluent guidelines, referred to as “secondary treatment,” and require that all Publically Owned Treatment Works meet them by July 1, 1977.

The regulations found at 40 CFR 133.103(d) allow a lower TSS percent removal requirement if the permittee satisfactorily demonstrates that 1) the treatment works is consistently meeting its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater 2) to meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations that would otherwise be required by the concentration-based standards and 3) the less concentrated influent wastewater is not the result of excessive I/I. Unfortunately, the Mullan WWTP has not consistently met its BOD or TSS concentration limits nor does it meet the definition of non-excessive I/I. Non-excessive I/I requires that the wastewater plus inflow plus infiltration be less than 275 gallons per capita per day. Therefore, the 85% TSS and BOD percent removal requirements have been retained in the final permit.

## **L. Monitoring Requirements**

34. Comment (17, 33): At the required metals levels (non-variance), CLEAN sampling technologies will need to be implemented. This will increase the cost of the testing significantly. Testing at the more stringent non-variance levels increases the testing cost from \$25 to approximately \$150 per sample (commenter 17 presented individual and total costs for the metals sampling requirements). Since the goal of this testing is to develop an understanding of the magnitude of metals in the existing discharge, the actual testing methodology should be inductively coupled plasma (ICP) with an accuracy of 10 µg/l for zinc and cadmium and an accuracy of 100 µg/l for lead.

Response: The permit (Part I.A.7. and Table 1) requires that the effluent monitoring for metals meet certain method detection levels (MDLs). The MDLs ensure that the effluent be monitored at levels sensitive enough to indicate compliance with the water quality-based effluent limits. The final water quality effluent limits for cadmium and zinc are based on SSC. The SSC is greater than the previous water quality criteria for lead and zinc. This increase in lead had eliminated the need for an lead effluent limit. Therefore the MDL for lead has been increased to from 0.7 µg/L to 10 µg/L. A MDL must be specified below the SSC in order to determine the

need for a limit during the next permit reissuance. The MDL for zinc remains at the proposed MDL of 20 µg/L (greater than requested). The MDL for cadmium was not changed from the proposed MDL of 0.1 µg/L because a level of detection below the effluent limit is necessary to ensure compliance.

As specified in III.C of the final permit, “monitoring must be conducted according to test procedures approved under 40 CFR 136...” Under this regulation (40 CFR 136.4) the permittee may apply for approval to use an alternate test procedures with a different MDL than specified in the permit as long as that MDL is below the effluent limit (or water quality criteria alternately).

The permit does not specify that “clean” sampling is necessary. However, in order for the laboratories to achieve levels that are from one to two digits µg/L it is necessary to prevent metals contamination in the field (when collecting samples) and in the lab (when testing the samples). “Clean” is not a regulatory term that has been defined within the test methods but can include; wearing a nylon rain suit, containing your hair under a hair net, utilizing laminar flow hoods in the lab, utilizing air filters in the lab, soaking bottles before use to prevent dust contamination, using plastic bottles instead of glass, double bagging your samples, and/or using higher grade reagent acid. You might contact your lab to determine what professional practices are needed to achieve the minimum levels required in the final permit.

35. Comment (49): Metals sampling (Cd, Pb, and Zn) should be reduced to twice per year.

Response: The draft permit requires monthly monitoring for metals and has been retained in the final permit. This monitoring frequency for metals is consistent with that required of other municipalities such as for the Cities of Caldwell; Boise, West Boise; Ketchum; Nampa; Puyallup; Hayden; Post Falls; and Coeur d’Alene.

36. Comment (49): The level of ammonia testing should be reduced to 1/month. If one year of testing does not result in permit violations, ammonia sampling should be discontinued.

Response: Similar to total residual chlorine, low concentrations of ammonia can be toxic to freshwater fish, particularly salmonids. The South Fork River is protected for aquatic life. The relative percentages of ammonia in the river varies with temperature and pH. As the pH and temperature decrease, the percentage of ammonia that is in the un-ionized form increases, causing increased toxicity. Therefore, the monitoring frequency has been retained as 1/week in the final permit.

The EPA does not agree that the sampling requirements and effluent limits should be automatically removed after one year if compliance is met that year. Ammonia limits are regularly required of municipalities. The District can request a permit modification if compliance is demonstrated for a substantial period of time and the reasonable potential no longer exists to violate state criteria.

37. Comment (17): Testing is required for the effluent and the receiving water for phosphorous and nitrates. The intent is to determine the actual load from the Mullan WWTP to lake Coeur d'Alene. A significant amount of nitrogen and phosphorus data already exists from sampling conducted by USGS. Although collecting upstream and waste stream data is important, a good data history can be obtained in a far shorter period of time than the 5 year permit cycle. One 12-month cycle should provide an adequate data history.

Response: The comment appears to request 12 months of effluent and ambient data. The draft permit required monthly effluent monitoring for total phosphorus, nitrate/nitrites as N and total Kjeldahl nitrogen and monthly receiving water monitoring upstream of outfall 001 for total phosphorous from June through November.

The EPA agrees that nutrient monitoring is important given the 1996 Lake Management Plan's finding that dissolved oxygen is depleted in the deep bottom waters during late summer. The Plan further states that nearshore areas of the lake contain excessive growth of attached algae and that sewage treatment plants in the Basin still contribute a significant portion of the Lake's nutrient load. Table 39 of the Nutrient and Trace-Element Enrichment of Coeur d'Alene Lake, Idaho study paper includes information that the Mullan WWTP contributes 3.8% of the total phosphorus annual load to the Lake. Notes from Table 26 of the Lake Management Plan recommend that a special committee be developed with representatives of DEQ, the municipalities and interested citizens to determine what action, if any, is necessary.

The EPA disagrees that 12 months of monitoring provide adequate data for the Lake Management Planning committee to determine which phosphorus reduction activities are necessary for the Mullan WWTP. The final NPDES permit includes I/I reduction activities that, in addition to metals reductions, are expected to reduce the amount of phosphorus in Mullan's effluent. The success of these activities can be quantified through the nutrient monitoring. The existing effluent nutrient data for the Mullan WWTP is very minimal because the USGS does not conduct effluent sampling and the previous NPDES permit did not require nutrient monitoring. In addition, the EPA is unaware of existing USGS nutrient data in the South Fork upstream of the Mullan WWTP outfall. Therefore effluent and ambient nutrient monitoring remains in the final permit. The frequency for ambient monitoring of phosphorus has been reduced to twice per year. See also response to comment #41 below for more discussion on nutrients.

38. Comment (49) - Phosphorus and nitrates monitoring should be reduced to once per quarter.

Response: See response to comment #37.

39. Comment (17) - Total testing costs are estimated to increase by \$7,000 if the metals testing is based on variance levels and \$9,000 if metals testing is based on the TMDL levels.

Response: Sufficient monitoring of cadmium, lead and zinc is necessary to determine what reductions are being achieved due to the variance requirements. In addition, if the variance is not renewed then the final water quality-based limits apply and a determination of compliance is necessary. As described in the response to comment #34, the ML for lead has increased which may decrease the cost of monitoring.

40. Comment (17) - Over the years the South Fork River has been studied extensively by the USGS, IDEQ, and EPA Superfund to name a few. There are already volumes of data available on this stream. An example of this would be the data used by EPA to establish flow. In a 2-19-99 request for information response letter from Patty McGrath, Item 4, Chemical and physical characteristics of the receiving water, she states, "based on the information submitted in your letter and discussions with IDEQ regarding the extent of available receiving water quality analyses, the receiving water monitoring specified in the "request for information" letter is no longer required." I am requesting that the receiving water testing be eliminated.

Response: The December 18, 1998 request for information letter that EPA referred to in the February 19, 1999 letter was limited in scope and did not discuss total ammonia, temperature, phosphorus or total residual chlorine. Receiving water monitoring is necessary to determine if effluent limits need to be retained in any future reissued permit and is necessary when developing effluent limits. To ensure that effluent limits are accurate and protective of Idaho's water quality standards, it is important that recent receiving water data be used. EPA cannot rely on past data, particularly in the South Fork where Superfund actions and other activities may result in changes to the receiving water characteristics. The inclusion of ambient monitoring in municipal permits is consistent with EPA's policy.

The draft permit required receiving water monitoring for temperature and pH downstream of the discharge on a monthly basis, June through November for two years (approximately 12 samples total). This monitoring frequency has been changed to twice per year (one sample between June and August and the other between September and November). This monitoring information will be used to calculate the water quality criteria that is applicable in future permit limit determinations. The temperature and pH data is used to calculate the ammonia criteria.

The draft permit also required monthly (for two years, June through November) receiving water monitoring for ammonia, phosphorus and chlorine upstream of the outfall. This data is needed in order to determine background concentrations that will be used to determine the need for and establishing effluent limits for these pollutants in the future. However, in order to balance the cost of this monitoring over the life of the permit, the frequency has also been changed to twice per year (one sample taken between the months of June and August and one taken between September and November).

41. Comment (49) - All receiving water monitoring tests should be reduced to 1 per quarter for a maximum duration of 2 years.

Response: See response to comment #40.

## **M. Limits on Phosphorus and Other Nutrients**

42. Comment (34) - We are concerned by the lack of effluent limitations on nutrients; particularly total phosphorus. Municipal wastewater treatment discharges, and in particular the Page Wastewater Treatment Plan, have been identified as major contributors of nutrients to Coeur d'Alene Lake. In 1991 and 1992, the Page effluent represented a quarter to over half of the annual load of total phosphorus for the Coeur d'Alene River at its mouth (Woods and Beckwith 1997). Table 26 of the Coeur d'Alene Lake Management Plan identifies, under Action 1, reduction of phosphorus loads from the Page facility as a priority, and the recent Draft Coeur d'Alene Lake Management Plan Addendum retains this priority.

Woods and Beckwith (1997) performed modeling of the lake's water quality, and simulations involving various scenarios such as increases in nutrient loads, reduction of nutrient loadings due to BMPs for forestry and agriculture, etc. They concluded that of the three nutrient-reduction simulations explored, nutrient reduction from wastewater treatment systems produced the largest improvements in phosphorus concentration.

The Page Fact Sheet seems to assume that the proposed permit requirements will be compatible with the Lake Management Plan if the effluent does not result in anoxic conditions in the hypolimnion (Appendix D of the Fact Sheet). We do not agree; this is clearly not the intent of the Plan or its recent draft addendum. The goal of the Plan is "slow improvement in water quality." Moreover, other sources of phosphorous may appear or increase in the Basin as a result of phosphate-based treatment methods for metal-contaminated sites. Thus, reduction of existing sources becomes even more important to improvement of water quality in the Lake. Mullan and Smeltonville nutrient loads are negligible, adding up to about one tenth of the load from the Page discharge for both phosphorus and nitrogen.

Response: Table 26 of the Coeur d'Alene Lake Management Plan includes the goal to eliminate and/or reduce the discharge of nutrients in wastewater. Action 1 of the Table (from the proposed Addendum) further requires that the impacts be evaluated, and a financial evaluation of alternatives be conducted and that implementation strategies be recommended, if needed. The Note to the Table states that "it was determined that evaluation and selection of specific phosphorus reducing actions for the South Fork Sewer District's Page facility and other waste water treatment plants were beyond the scope of the planning committee. They recommend that a special committee be developed with representatives of DEQ, the sewer districts and interested citizens. It was also recommended that an economist, be consulted during the evaluation process."

The EPA understands that this special committee has not yet been formed

and thus has not yet determined what actions, permit limits included, are necessary for the Mullan WWTP. The EPA will take any such recommendations into consideration when they are presented. Although effluent limits were not included in the final permit for nutrients, it is expected that Mullan's variance activities to reduce I/I will also decrease phosphorus contributions to the Lake. See response to comment #37 also.

## **N. Superfund**

The following comments are related to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program, otherwise referred to as Superfund. The appropriate time to comment on Superfund actions is during the comment periods applicable to the Superfund work, since changes to Superfund decisions cannot be made in the context of an NPDES permit action. Therefore, EPA will not respond in detail to the following comments and directs the commenters to the administrative record for the Superfund decisions, particularly the Response to Comments on the Coeur d'Alene basin and Bunker Hill Record of Decisions (RODs) and the corresponding Remedial Investigation/Feasibility Study (RI/FS) Reports. This information can be found in local information repositories and on EPA's website at [www.epa.gov/r10earth/bh.htm](http://www.epa.gov/r10earth/bh.htm).

43. Comment (42) - It appears that the dischargers are being punished for only removing part of the metals. It also appears that the chronic aquatic standard as administered by the EPA Water Quality Division is the major impediment to substantially reducing the river metal load. I believe that substantial reductions in river zinc and cadmium loading will only be achieved by treating contaminated groundwater with lime precipitation. Biologically based systems need too much space and both they and the apatite-based passive treatment, contemplated in the ROD, discharge substantial amounts of nutrients as a byproduct and are not feasible to achieve major reductions in the river metal loading. I do not know of any other affordable treatment systems, which might be used to achieve substantial metals load reductions except lime precipitation. However, simple lime treatment systems (without filtration) will not remove enough metals to meet the chronic aquatic standard based discharge limits so EPA's Water Quality Division will not allow such treated water to be discharged. The net result is that the untreated water will continue to drain into the river and no substantial improvements are possible.

Response: The comment period on the municipal WWTP NPDES permits does not extend to Superfund actions (such as the treatment of groundwater). EPA directs the commenter to the administrative record for the Superfund decisions, particularly the Response to Comments on the ROD for the Coeur d'Alene Basin. It should be noted that in general, while Superfund actions must meet applicable water quality standards, considerations can be made for not meeting the standards due to technical impracticability considerations (contact EPA's Superfund office for a copy of the technical

impracticability guidance). In such a situation, the treatment goal would be based upon what is technically achievable. Such an exemption to the standard would be justified in the Superfund ROD and would not be subject to approval from EPA's Office of Water, as assumed in the comment. It should also be noted that the ROD that was recently issued by EPA's Superfund program was an interim ROD and did not establish the water quality standards as the final goal of the actions in the interim ROD.

44. Comment (42) - Under the CWA, EPA and the State could issue an "Interim Water Quality Standard" as was done at the Upper Blackfoot Mining Complex near Lincoln, MT. It should be set to allow for discharge from simple lime treatment plants. There are problems with this. The first is that issuing such a standard requires an associated plan to achieve improvements in the river. It also requires an implementation schedule. Simple lime treatment of contaminated groundwater would have to be funded. At present both EPA and the State of Idaho each say that the other should pay for such treatment. Both have a vested financial interest in continuing the impasse and not doing anything. In the real world most of the funding will have to come from the Federal Government if it comes at all. The second problem with the interim standard is that EPA would no longer be able to punish the people of the Silver Valley for living in a historically impacted area.

Response: EPA does not believe that its actions are punishing the people of the Silver Valley. The EPA recognizes the impact that issuance of the NPDES permits has on the community and is therefore issuing water quality standards variances for cadmium, lead, and zinc. (See response to comment #1). Therefore, an interim water quality standard would not be needed for surface discharges, since a variance from the water quality standard is being issued to the municipal WWTPs. It appears that the commenter is recommending interim water quality standards for groundwater however, and NPDES permits are only for surface discharges.

A temporary or interim water quality standard can be developed for use in the Superfund program ROD if allowed under the state water quality standards. The State of Montana has provisions in its water quality standards for such temporary water quality standards. Under the provision, Montana adopted temporary water quality standards for the Upper Blackfoot Complex. However, the State of Idaho does not have similar provisions in its water quality standards to allow for temporary water quality standards. Therefore, temporary standards cannot be adopted for the South Fork Coeur d'Alene River. As discussed in response to the previous comment #43, Superfund could use a technical impracticability argument to not meet a standard, but this would be a



Superfund action and not subject to the approval under the CWA.

45. Comment (42) - The Superfund ROD only pretends to address a small part of the zinc load since the ROD talks about natural recovery (The commenter submitted a graph showing that natural recovery should deliver +600 pounds per day reduction over the next 30 years). I believe that EPA's real plan is to let natural recovery take care of the problem. Natural recovery is a euphemism for letting the metals be flushed down the river to settle in Coeur d'Alene Lake or flow down to the Spokane River.

Response: As discussed above, the comment period on the municipal WWTP NPDES permits does not extend to Superfund actions. EPA directs the commenter to the administrative record for the Superfund decisions, particularly the Response to Comments on the ROD.

46. Comment (42) - The CIA seep discharges more metals than all the WWTPs combined. In the TMDL, EPA and the State of Idaho said a groundwater discharge clearly emanating from a mine waste pile is a point source discharge. Is this still EPA's position? Is there an NPDES permit for the CIA seep? It is possible that no permit is needed because the seep falls under CERCLA, but even there, the discharge still has to meet the substantive requirements of the CWA. Is the CIA a Federal Facility as defined in Section 1323(a) of the CWA? Is the CIA seep discharge a violation of the substantive requirements of Section 1323(a) of the CWA?

Response: It is EPA's position that pollutants discharged from a waste pile to waters of the U.S. (such as the South Fork Coeur d'Alene River) are point source discharges. This position is consistent with the CWA. Irregardless, it is not necessary for EPA to obtain a NPDES permit for the CIA. Pursuant to its CERCLA authority, EPA is performing remedial actions at the Bunker Hill Mining and Metallurgical Complex Superfund Site. Included in these actions are remedial actions that have been performed and are being performed to address seeps from the CIA. The CIA is within the Bunker Hill Mining and Metallurgical Superfund Site. CERCLA section 121e requires EPA to comply with the substantive requirements of applicable or relevant and appropriate requirements (ARARs) when it conducts response actions within a superfund site. Because the remedial actions being conducted at the CIA are within the Bunker Hill Mining and Metallurgical Complex Superfund Site, there is no need to obtain a NPDES permit. However, remedial actions performed at the CIA must attain the substantive requirements of the CWA and the NPDES regulations. Since EPA began performing remedial actions at the CIA, metals discharges from the CIA seeps have decreased dramatically. EPA ceased the historical industry practice of storing acid mine drainage on top

of the CIA and has placed a liner on top of the CIA. Currently there is approximately 37 lbs/day of zinc coming from the seeps. The selected remedy for the CIA also includes collection and treatment of seeps. EPA is using a phased approach to implement remedial actions at the CIA. As it implements these remedial, EPA is evaluating their effectiveness. EPA anticipates that the performance of these or other actions will substantially reduce CIA metals loading and result in compliance with CWA ARARs. The goals of any treatment would have to meet the substantive requirements of the CWA and NPDES regulations. EPA is currently evaluating the effectiveness of the remedial action it has implemented and is evaluating whether it is necessary to implement the seep collection and treatment system. Ultimately, EPA will have to attain or waive CWA ARARs.

## **O. Variances**

The draft permit incorporated alternate limits based on the proposed variances from the cadmium and zinc water quality criteria. On June 24, 2004 EPA granted the WWTP a five year variance from the cadmium and zinc water quality criteria. EPA determined that the facility demonstrated that treatment necessary for attaining the water quality criteria for cadmium and zinc upon permit reissuance would result in substantial and widespread economic and social impact.

Although, the public notice and comment process for the variances and NPDES permits were conducted jointly, the granting of variances for cadmium, lead (Page and Smeltonville only) and zinc to the WWTPs and the reissuance of the NPDES permits are two distinct legal actions. The granting of a variance from State water quality standards is an action authorized under CWA section 303(c) and the issuance of NPDES permits is authorized under CWA section 402(a). Consequently, there are separate administrative records supporting these two legal actions. Therefore, this Response To Comments document is a summary of the significant comments related to the NPDES permit action. The responses to comments regarding the granting of the variances from Idaho water quality standards and EPA's responses to those comments, are addressed in a separate document as part of the administrative record for the water quality standards variance action.

The variance authorized alternate limits for cadmium and zinc for the term of the variance, Additionally, a condition of the variance requires that reasonable further progress be made towards achieving the final water quality-based limits. Specific requirements have been

developed in the NPDES permit which are designed to implement this condition. These specific requirements include 1) conditions related to infiltration and inflow 2) interagency agreements, and 3) elimination of sanitary sewer overflows.

47. Comment (24) - We believe that the NPDES permits should include variance conditions that consider receiving water quality, background and natural levels of metals, peak river flow events, and goals that are achievable both technologically and economically. The draft document, as we understand it, does not satisfactorily address any of these criteria.

Response: Alternate effluent limits for cadmium and zinc that apply during the term of the variance are based on the current performance (current discharge levels) of the Mullan WWTP. See the Public Information Document for detailed information on how the alternate limits were developed. These limits, therefore, do not depend upon the receiving water characteristics, but rather on the effluent characteristics. These limits are technologically and economically achievable since they are based on the concentrations that are currently being achieved by the WWTP.

48. Comment (1, 35, 42) - Most of the infiltration is contaminated groundwater entering the sewer systems. The actual situation is that removing I/I sources, will increase the metals loading to the river. Data from the inflow and outflow at the Smeltonville, Page, and Mullan plants in 1999 clearly demonstrate that dissolved cadmium, zinc, and lead are removed by the sewer treatment systems.

Response: Data was not submitted with the comment to determine the amount of removal provided by the WWTPs. However, until the I/I removal actions are implemented, it is unknown whether or not these actions will result in increased metals loadings to the river from the contaminated soils and groundwater.

In any case, the WWTPs are responsible for compliance with the following three items: 1) approved water quality standards, 2) proper operation and management of their systems, including I/I reduction (See Section IV.E of the final permit), and 3) removal of 85% of the BOD<sub>5</sub> and TSS entering the treatment plant (See Section I.A.5 of the final permit). The BOD<sub>5</sub> and TSS removal requirements are currently difficult to achieve with the substantial dilution of the inflow to the treatment plants.

The contaminated soils and groundwater is the responsibility of the CERCLA (i.e., Superfund) program. Superfund has prioritized its actions so that it is currently dealing with higher priority water quality problems. The NPDES program has forwarded this concern to the Superfund program and has encouraged the Superfund program to look at the groundwater issue.

49. Comment (17): The variance requires the District to continue to evaluate metals treatment technologies. The District has already identified metals treatment alternatives in a 1999 Facility Plan. None of the readily available technologies can meet the permit levels at an economically feasible cost. A system which could consistently meet the proposed limits exceeds the financial ability of the District rate-payers. Identifying a metals treatment technology is also dependent on a final TMDL which may reduce the level of treatment required. Only until these levels are defined should the District consider investigating treatment technologies.

Response: Appendix C of the April 2000 I/I Evaluation and Wastewater Treatment Facility Plan (found in the NPDES permits administrative record) took a cursory look at what might be necessary to meet TMDL effluent limits. The Appendix states that precipitation with sulfide at a pH of 8.3 to 8.7 in a covered reactor-clarifier, followed by polishing using multi-media filters would be best to meet TMDL limits but the assessment further states that the limits could not be consistently achieved using this technology. In addition, land application or wetlands discharge is suggested but costs are not provided. Although the information provided in the Plan is useful, it does not adequately weigh the costs and benefits of all available candidate technologies nor does it evaluate compliance with the effluent limits based on the site specific criteria. More comprehensive treatment technology information may be needed in the future. However, at this time EPA feels that it is most cost effective for the District to remove I/I from the collection system before looking at treatment therefore, the requirement to evaluate metals treatment technologies has been removed from the final permit.

50. Comment (17): The variance requires that the District identify and eliminate sources of I/I in the system. The District has done a substantial amount of work identifying the sources of I/I into the satellite collection systems. However, they do not have the legal authority nor the budget to repair these systems. The availability of grant funding will be the key to getting this work completed. The District has obtained an EPA demonstration grant to both reduce I/I in Mullan and to identify whether I/I reduction is the source of metals to the treatment facilities.

Response: The EPA recognizes the work that the District has done to date to identify I/I sources. However, ultimately it is the permittee (District) that is responsible for the quality of the effluent discharge to waters of the U.S.

under the NPDES permit and not the satellite systems. The sewage service agreements between the District and the city of Kellogg requires that the District control the type and volume of wastewater received such that compliance with effluent standards are achieved. The agreement further requires the City to operate and maintain the sewerage system such that compliance with effluent limits is assured. In addition, the City is required to eliminate infiltration of groundwater. The District does have the legal authority through such agreements, or through amended agreements to control I/I. The EPA is willing to assist the District in any way legally available under the CWA. The cities should look into IDEQ's facility planning grants as well as the State Revolving Funds (SRF) for monetary assistance.

51. Comment (17): The variance requires that the District eliminate sanitary sewer overflows (SSOs). The District has increased capacity to reduce the likelihood of SSOs in the system. However, without reduction of flows from the satellite systems, SSOs will continue in the interceptor.

Response: The EPA encourages the District to work with the satellite systems to reduce the amount of non-sewage inflowing to the treatment plant. The EPA recognizes that reducing the I/I entering the collection system is very important to the overall performance of the treatment plant and has therefore granted the metals variances that allow time for I/I reduction activities.

52. Comment (17): The existing interagency agreements are already established. The District will continue to work with its satellite systems to identify and eliminate I/I. The actual form of the interagency agreements should be determined by the District and the contributing entities. Permit conditions establishing what should be included in those agreements unnecessarily limits the negotiations between the satellite systems and the District.

Response: The existing interagency agreements between the District and the satellite communities are old and it appears that there has not been compliance with the agreements. However, the EPA agrees that prescriptive requirements are not necessary in the permit. Therefore the final permit only requires that the interagency agreements be reestablished and include compliance schedules.

Although the draft Mullan permit did not mention interagency agreements, the final permit requires that the interagency agreements be reestablished with the City of Mullan. The following language has been included in Section II.A.3 of the final Mullan permit:

Reestablish the interagency agreement with Mullan by one year from permit issuance date.

53. Comment (17): The requirement for monitoring existing wastewater lift stations is excessive. The District has done substantial work to identify the sources of I&I through lift station monitoring, flow monitoring, smoke testing, dye testing, and video inspection. The permit should not address how the District is to conduct further I&I identification.

Response: The requirement to monitor lift stations has been removed from the final permit. The EPA was not aware that such monitoring was previously conducted.

54. Comment (49): The variance requirements for the Mullan permit should be modified as indicated:

a. Identify whether the likely source of metals to the treatment plant is due to domestic water, groundwater or surface water influences. The first major step toward identifying the source will be through a demonstration project proposed to be conducted in Mullan, ID in 2003/2004. This work will be completed by December 31, 2004.

b. Verify the reduction in excess flows by October 31, 2005.

c. Re-evaluate existing interagency agreements with the City of Mullan. This will include discussing the provisions of the interagency agreement and determining a compliance schedule for each discharger. If the City continues to discharge excessive flows (less than 500 gpcd), a compliance schedule will be in place by July 1, 2006.

d. The interagency agreement and compliance schedule shall commit to correcting the deficiencies in the collections systems to the degree required to reduce excess flows to less than 500 gallons per capita per day. In the event that the discharging entity does not develop a concrete plan for meeting this requirement, the District will institute an excess flow charge to the users served by the facility. The plan will be in effect by July 1, 2006.

e. The District will work with the City of Mullan to eliminate I/I along Earle and River Streets by helping them obtain a grant for the work from the Clean Water Act by May 31, 2003. In the event that grant funds are unavailable, the District will work with the City to

develop a funding and implementation plan by December 31, 2003.

Response: In response to the permittees suggestions Section II.A. of the final permit has been modified and now reads:

1. Identify the source and significant contributors of metals and I/I to the treatment plant. A demonstration project report identifying the source of metals and I/I and how to reduce those sources will be submitted to EPA and DEQ by December 31, 2004.
2. Reestablish the interagency agreement with the City of Mullan by one year from permit issuance date. The interagency agreement shall include a compliance schedule that commits the City to correcting the deficiencies in the collection systems and specific I/I reduction tasks. The compliance schedule will be in place and submitted to EPA and DEQ by July 1, 2006.
3. Submit a report to EPA and DEQ verifying the reduction in excess flows due to the demonstration project by October 31, 2005.
4. Correct significant contributors of I/I that were identified in the collection systems by five years from the issuance date of the permit such that sanitary sewer overflows (SSOs) are eliminated. A detailed report outlining what upgrades were necessary shall be submitted to EPA by add date five years from the issuance date of the permit.

The final permit has not been modified to include the suggestion in c and d. above because the threshold for nonexcessive I/I is 275 gallons per capita per day according to federal regulations found at 40 CFR 133.103.d. The EPA also does not want to prescribe that the District will institute an excessive flow charge to the users by July 1, 2006 if plans are not made to control influent to the treatment plant. The District retains this authority without the requirement being contained in the NPDES permit.

## APPENDIX A - List of Commenters

This appendix assigns a number to each commenter based on the date the comment was received by EPA. The comment number where the comment is summarized and responded to is also provided in the last column.

<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
1	10/1/02	Fred Brackebusch, oral testimony at the Public Hearing regarding the Page, Mullan, and Smelterville draft permits.	48
2	11/11/02	Darren Brandt, conversation on 11/11/02 regarding the Page permit	no comments on Mullan
3	11/22/02	Lee Haynes, Smelterville City Planner, Email dated 11/22/02, regarding the Smelterville draft permit.	no comments on Mullan
4	11/26/02	Lee Haynes, Smelterville City Planner, Email dated 11/26/02, regarding the Smelterville draft permit.	no comments on Mullan
5	11/27/02	David Wyatt, Email dated 11/27/02, regarding Page, Mullan and Smelterville draft permits.	1
6	12/2/02	Wayne C. Willis, letter dated 11/27/02, regarding Page, Mullan and Smelterville draft permits.	1
7	12/4/02	Lois G. Jacobsen, letter dated 11/26/02, regarding Page and Mullan draft permits.	1
8	12/4/02	Jill Gregory, undated letter, regarding Page and Mullan draft permits.	1
9	12/5/02	Jack Friedman, letter dated 12/2/02, regarding Page, Mullan and Smelterville draft permits.	1, 16
10	12/9/02	Steven Saun, letter dated 11/26/02, regarding Page, Mullan and Smelterville draft permits.	1



<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
11	12/9/02	Cathy Slaughter, letter dated 12/1/02, regarding Page, Mullan and Smelterville draft permits.	1
12	12/9/02	David F. Zabel, letter dated 12/6/02, regarding Page, Mullan and Smelterville draft permits.	1
13	12/9/02	Jana McCurdy, letter undated letter, regarding Page, Mullan and Smelterville draft permits.	7, 23
14	12/13/02	Joe Peak to EPA, letter dated 12/11/02, regarding Page and Mullan and Smelterville draft permits.	9, 21, 25
15	12/18/02	Gene Webberding, letter dated 12/15/02, regarding Page and Mullan draft permits.	1
16	12/20/03	Dick Caron, letter dated 12/14/02, regarding Page, Mullan and Smelterville draft permits.	8
17	12/20/02	Ross Stout, SFCDARSD District Manager, letter dated 12/17/03, regarding Page and Mullan draft permits.	26, 27, 28, 29, 30, 31, 33, 34, 37, 39, 40, 49, 50, 51, 52, 53
18	12/23/02	Mac Pooler, Mayor City of Kellogg, letter dated 12/19/03 regarding Page and Mullan draft permits.	1, 10
19	12/26/03	Justin Hayes, Program Director, Idaho Conservation League, letter dated 12/27/02, regarding Page, Mullan and Smelterville draft permits.	See variance response to comments
20	12/26/02	Lee Haynes, chairman, Email dated 12/12/02, regarding the Page draft permit	no comments on Mullan

<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
21	12/30/03	Mayor Jay Huber, Councilman Gary Hoffman, Councilman David Lambert, Councilwoman Nancie Burkhart, Councilman Terry Hutchison, and City Planner Lee Haynes, City of Pinehurst, letter dated 12/26/03, regarding Page and Mullan draft permits.	1, 2
22	1/6/03	Rosalie Peterson, undated letter, regarding the Page, Mullan, and Smelterville draft permits.	1
23	1/9/03	Mayor Michael Dunnigan, Council Person Sam Davis, Council Person Larry Hoven, Council Person Dale Newell, and Council Person Dan White, Town of Mullan, letter dated 1/6/03, regarding the Page and Mullan draft permits.	1
24	1/10/03	Chairman Sherry Krulitz, Commissioner Jim Vergobbi, Commissioner Jon Cantamessa, County of Shoshone, letter dated 1/8/03, regarding the Page, Mullan, and Smelterville draft permits.	1, 3, 32, 47
25	1/12/03	yakky, email dated 1/12/03 regarding the Page, Mullan and Smelterville draft permits.	1
26	1/13/03	Mayor Robert McPhail, City of Osburn, letter dated 1/6/03, regarding the Page and Mullan draft permits.	1
27	1/13/03	Janet Newell, letter dated 1/7/03, regarding the Mullan draft permit.	1
28	1/13/03	Vinetta Ruth Spencer, letter dated 1/8/03, regarding the Page, Mullan, and Smelterville draft permits.	1, 10, 14, 21
29	1/13/03	Kenny Hicks, Planning Administrator, Shoshone County, letter dated 1/9/03, regarding the Page and Mullan draft permits	1, 7, 12

<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
30	1/13/03	Walter Hadley, Planing Administrator, Kellogg Planning and Zoning Commission, letter dated 1/10/03, regarding the Page, Mullan, and Smelterville draft permits.	1, 15
31	1/13/03	Vince Rinaldi, Executive Director, Silver Valley Economic Development Corporation, letter dated 1/10/03, regarding the Page and Mullan draft permits.	1
32	1/13/03	Jana McCurdy, undated letter, regarding Page, Mullan and Smelterville draft permits.	1, 7, 23
33	1/13/03	Robert N. Stovern, undated letter, regarding the Page, Mullan, and Smelterville draft permits.	1, 17, 34
34	1/13/03	Callie Ridolfi and Sophie Lagace', Ridolfi Inc. on behalf of the Coeur d'Alene tribe, facsimile memorandum dated 1/13/03, regarding the Page, Mullan, and Smelterville draft permits.	42
35	1/13/03	Fred Traxler, Email dated 1/13/03, regarding the Page, Mullan, and Smelterville draft permits.	11, 18, 19, 24, 48
36	1/13/03	Larry Burcham, Email dated 1/13/03, regarding the Page draft permit.	no comments on Mullan
37	1/14/03	Ron Roizen, Email dated 1/13/03, regarding the Page, Mullan, and Smelterville draft permits.	1, 2, 5, 6
38	1/15/03	Dennis R. Nanis, Kellogg City Council, letter dated 1/10/03, regarding the Page and Mullan draft permits.	1
39	1/15/03	Dan Waldo, Manager, Kingston-Cataldo Sewer District, letter dated 1/10/03, regarding the Page draft permit.	no comments on Mullan

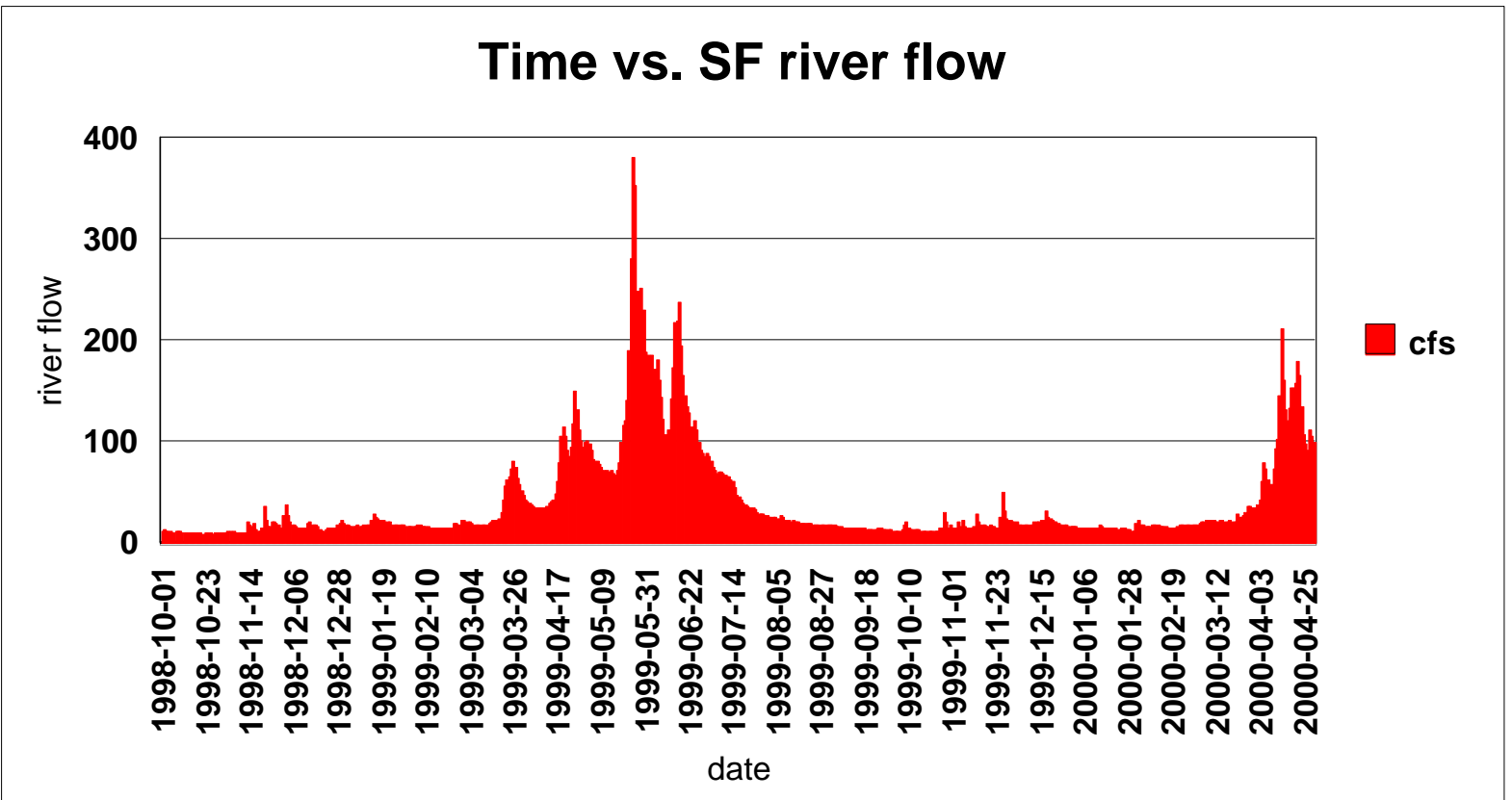
<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
40	1/15/03	Harry and Mary Winkler, letter dated 1/11/03, regarding the Page and Mullan draft permits.	1
41	1/15/03	Don Hofman, letter dated 1/11/03, regarding the Page and Mullan draft permits.	1
42	1/15/03	W.C. Rust, letter dated 1/12/03, regarding the Page, Mullan, and Smelterville draft permits.	4, 20, 43, 44, 45, 46, 48
43	1/16/03	Millie Grant, letter dated 1/9/03, regarding the Page and Mullan draft permits.	1
44	1/16/03	Jerry Cobb, Panhandle Health District, letter dated 1/13/03, regarding the Page, Mullan, and Smelterville draft permits.	12
45	1/16/03	Kathy Zanetti, Shoshone Natural Resources Coalition, letter dated 1/13/03, regarding the Page, Mullan, and Smelterville draft permits.	1, 7, 13, 22
46	1/21/03	Robin Stanley, Mullan School District #392, letter dated 1/10/03, regarding the Page, Mullan, and Smelterville draft permits.	1
47	undated	Virginia Tiitso, undated letter, regarding Page, Mullan and Smelterville draft permits.	1
48	3/28/03	Tom Benson, City of Smelterville Mayor, Dennis Rose, Sewer Commissioner, and Lee Haynes, City Planner, letter dated 2/25/03 regarding the Smelterville draft permit	no comments on Mullan
49	4/3/03	Ross Stout, District Manager, SFCDARSD, letter dated 4/1/03, regarding the Page and Mullan draft permits.	35, 36, 38, 41, 54

<b>Commenter No.</b>	<b>Date Comments Received</b>	<b>Name of Commenter</b>	<b>Response to Comments Comment No.</b>
50	5/22/03	Lee Haynes, City Planner and Dennis Rose, Sewer Commissioner to EPA regarding Smeltonville permit.	no comments on Mullan
51	7/17/03	Ross Stout, District Manager, SFCDARSD, letter dated 7/17/03, regarding Page draft permit.	no comments on Mullan

## APPENDIX B - Effluent-based Tiered Chlorine Limits

This appendix describes how tiered water quality-based effluent limits were calculated for total residual chlorine. The calculations were performed according to procedures outlined in Chapter 3 and 5 of the TSD.

In order to determine the seasons where flow was the greatest and least, the following graph was developed using all available flow data upstream of Mullan's outfall. From this information, the peak season was determined to be March 1 through August 31 and the season with lesser flow was determined as September 1 through February 29th.



In calculating water quality-based limits, EPA used the following assumptions:

1Q10 and 7Q10 = 11 mgd or 17 cfs (March 1 - August 31)

1Q10 and 7Q10 = 5.9 mgd or 9.2 cfs (September 1 - February 29)

Low flows are based on USGS station (#12413040, South Fork Coeur d'Alene River above Deadman Gulch near Mullan station (October 1998 through April 2000)

Mixing zone = 25% of the South Fork Coeur d'Alene River (based on state water quality standards)

Step 1 - Determine the appropriate water quality criteria

The water quality criteria is determined based on the use of the receiving water. The South Fork River is protected, under IDAPA 58.01.02.109.09 (P-1), for secondary contact recreation, cold water biota (by federal rule), and agricultural water supply. Idaho's water quality standards (IDAPA 58.01.02.250.02) require that chlorine be protective of cold water aquatic life.

Acute criteria = 19 µg/L  
Chronic criteria = 11 µg/L

Step 2 - Determine whether there is "reasonable potential" to exceed the criteria

There is reasonable potential to exceed water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the criterion. The maximum projected concentration is calculated using the following mass-based equation:

$$C_d = \frac{(C_e \times Q_e) + (C_u \times (Q_u \times \%MZ))}{Q_d}$$

Where,

$C_d$  = receiving water concentration downstream of the effluent discharge

$C_e$  = maximum projected effluent concentration (3080 µg/L)

= maximum reported effluent concentration (2800 µg/L) X reasonable potential multiplier (1.1)

In calculating the reasonable potential multiplier, EPA assumed a sampling frequency of 20 per month, and used a coefficient of variation of 0.29 based on monthly data reported between December 1994 and February 2000.

$C_u$  = 95<sup>th</sup> percentile upstream concentration (0 mg/L, data was not available)

$Q_e$  = maximum effluent flow (0.25 mgd for first tier and 0.55 mgd for second tier)

$Q_u$  = upstream flow 11mgd for March 1 - August 30 and

5.9 mgd for September 1 - February 29

$Q_d = Q_e + (Q_u \times \%MZ)$ , receiving water flow downstream of the effluent discharge

$C_{d-Acute} =$

March 1 - August 30

≤ 0.25 mgd 250 µg/L > acute criteria of 19 µg/L

> 0.25 mgd and ≤ 0.55 mgd 500 µg/L > acute criteria of 19 µg/L

September 1 - February 29

≤ 0.25 mgd 435 µg/L > acute criteria of 19 µg/L

> 0.25 mgd and ≤ 0.55 mgd 815 µg/L > acute criteria of 19 µg/L

$$C_{d\text{-Chronic}} =$$

<u>March 1 - August 30</u>	
≤ 0.25 mgd	250 μg/L > chronic criteria of 11 μg/L
> 0.25 mgd and ≤ 0.55 mgd	500 μg/L > chronic criteria of 11 μg/L
<u>September 1 - February 29</u>	
≤ 0.25 mgd	435 μg/L > chronic criteria of 11 μg/L
> 0.25 mgd and ≤ 0.55 mgd	815 μg/L > chronic criteria of 11 μg/L

Because the acute and chronic downstream concentrations are greater than the criteria, total residual chlorine limits are needed for all flow tiers/seasons.

### Step 3 - Calculate Wasteload Allocations

Acute and chronic waste load allocations ( $WLA_{\text{acute}}$  or  $WLA_{\text{chronic}}$ ) are calculated using the same mass balance equation used to calculate the concentration of the pollutant at the edge of the mixing zone. However,  $C_d$  becomes the criterion and  $C_e$  is replaced by the  $WLA_{\text{acute}}$  or  $WLA_{\text{chronic}}$ . The WLAs define the appropriate concentration of pollutant allowed in the effluent.

$$WLA = \frac{C_d(Q_u \times \%MZ) + (C_d Q_e)}{Q_e} - \frac{Q_u C_u (\%MZ)}{Q_e}$$

$$WLA_{\text{acute}} =$$

<u>March 1 - August 30</u>	
≤ 0.25 mgd	228 μg/L
> 0.25 mgd and ≤ 0.55 mgd	114 μg/L

<u>September 1 - February 29</u>	
≤ 0.25 mgd	131 μg/L
> 0.25 mgd and ≤ 0.55 mgd	70 μg/L

$$WLA_{\text{chronic}} =$$

<u>March 1 - August 30</u>	
≤ 0.25 mgd	132 μg/L
> 0.25 mgd and ≤ 0.55 mgd	66 μg/L

<u>September 1 - February 29</u>	
≤ 0.25 mgd	75.9 μg/L
> 0.25 mgd and ≤ 0.55 mgd	40.5 μg/L



#### Step 4 - Develop Permit Limits

##### a) Convert the WLAs to Long Term Averages (LTAs)

The acute and chronic WLAs are converted to acute and chronic LTA concentrations ( $LTA_{acute}$  and  $LTA_{chronic}$ ) using the following equations from Section 5.4 of EPA's TSD:

$$LTA_{acute} = WLA_{acute} \times e^{[0.5\sigma^2 - z\sigma]} \text{ where,}$$

CV = coefficient of variation of the effluent concentration, standard deviation/mean = 0.29

$$\sigma^2 = \ln(CV^2 + 1) = 0.08$$

z = 2.326 for 99<sup>th</sup> percentile probability basis

$$LTA_{acute} =$$

March 1 - August 30

≤ 0.25 mgd                      123 µg/L

> 0.25 mgd and ≤ 0.55 mgd    61.3 µg/L

September 1 - February 29

≤ 0.25 mgd                      70.5 µg/L

> 0.25 mgd and ≤ 0.55 mgd    37.6 µg/L

$$LTA_{chronic} = WLA_{chronic} \times e^{[0.5\sigma^2 - z\sigma]} \text{ where,}$$

CV = coefficient of variation of the effluent concentration = 0.8

$$\sigma^2 = \ln(CV^2/4 + 1) = 0.15$$

z = 2.326 for 99<sup>th</sup> percentile probability basis

$$LTA_{chronic} =$$

March 1 - August 30

≤ 0.25 mgd                      95.4 µg/L

> 0.25 mgd and ≤ 0.55 mgd    47.7 µg/L

September 1 - February 29

≤ 0.25 mgd                      54.8 µg/L

> 0.25 mgd and ≤ 0.55 mgd    29.3 µg/L

##### b) Calculate Average Monthly and Maximum Daily Permit Limits

To protect a water body from both acute and chronic effects, the more limiting of the calculated  $LTA_{acute}$  and  $LTA_{chronic}$  is used to derive the effluent limitations. The TSD recommends using the 95<sup>th</sup> percentile for the Average Monthly Limit (AML) and the 99<sup>th</sup>

percentile for the Maximum Daily Limit (MDL).

To derive the MDL and the AML for chlorine the calculations would be as follows:

$$\text{MDL} = \text{LTA}_{\text{acute}} \times e^{(z\sigma - 0.5\sigma^2)} \text{ where,}$$

CV = coefficient of variation = 0.29  
 $\sigma^2 = \ln(\text{CV}^2 + 1) =$   
z = 2.326 for 99<sup>th</sup> percentile probability basis

**MDL =**

<u>March 1 - August 30</u>	
≤ 0.25 mgd	177 µg/L
> 0.25 mgd and ≤ 0.55 mgd	88.7 µg/L
<u>September 1 - February 29</u>	
≤ 0.25 mgd	102 µg/L
> 0.25 mgd and ≤ 0.55 mgd	54.4 µg/L

$$\text{AML} = \text{LTA}_{\text{chronic}} \times e^{(z\sigma - 0.5\sigma^2)} \text{ where,}$$

CV = coefficient of variation = 0.29  
 $\sigma^2 = \ln(\text{CV}^2/n + 1) =$   
z = 1.645 for 95<sup>th</sup> percentile probability basis  
n = number of sampling events required per month = 20

**AML =**

<u>March 1 - August 30</u>	
≤ 0.25 mgd	106 µg/L
> 0.25 mgd and ≤ 0.55 mgd	52.9 µg/L
<u>September 1 - February 29</u>	
≤ 0.25 mgd	60.9 µg/L
> 0.25 mgd and ≤ 0.55 mgd	32.5 µg/L

Mass based concentration limits were calculated by multiplying the concentration limit by the largest flow (2 mgd for the first tier and 3.5 mgd for the second tier and the design flow of 4.3 mgd for the third tier) and the 8.34 conversion factor.

**MDL=**

<u>March 1 - August 30</u>	
≤ 0.25 mgd	0.37 lbs/day
> 0.25 mgd and ≤ 0.55 mgd	0.18 lbs/day
<u>September 1 - February 29</u>	
≤ 0.25 mgd	0.21 lbs/day
> 0.25 mgd and ≤ 0.55 mgd	0.25 lbs/day

**AML=**

<u>March 1 - August 30</u>	
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$\leq 0.25$ mgd	0.22 lbs/day
$> 0.25$ mgd and $\leq 0.55$ mgd	0.24 lbs/day

September 1 - February 29

$\leq 0.25$ mgd	0.13 lbs/day
$> 0.25$ mgd and $\leq 0.55$ mgd	0.15 lbs/day

**APPENDIX C - Summary of Changes from the Draft Permit  
to the Final Permit**

The following tables summarize the changes between the draft and final permit.

<b>Changes From the Draft Permit to the Final Permit</b>		
<b>Cause for Change in the Permit</b>	<b>Final Permit Part</b>	<b>Summary of Change from the Draft Permit to the Final Permit</b>
State adoption and EPA approval of the SSC	Table 2 of Section I.A	The final effluent limits for cadmium and zinc are based on the SSC.
EPA approval of new ammonia criteria	Table 2 of Section I.A	Two set of effluent limits for ammonia were proposed. Upon EPA approval of the new ammonia criteria, only the second set is in the final permit.
Mistake made in alternate variance limits	Table 2 of Section I.A	The average monthly alternate limits for zinc were corrected.
TSS TMDL submitted and approved	Table 2 of Section I.A	The loading limits for TSS based upon the suspended solids TMDL were retained in the final permit
Comment #34	Table 1 of Section I.A	The MDL for lead was increased from 0.7 µg/L to 10.0 µg/L due to the approval of the SSC for lead.
Comment #37, 40 and 41	Table 3 of Section I.B.3	The ambient monitoring for total ammonia, temperature, pH, phosphorus and chlorine was reduced from 1/month (for two years from June through November) to 2/year for the life of the permit.
Comment #49	Section II.A	The requirement to study the alternatives and costs for treatment system modification to improve metals removal has been removed from the final permit.
Comment #50	Section II.A.3	The requirement to reestablish an interagency agreement with the City of Mullan has been added.
Comment #51	Section II.A	The requirement to monitor lift stations has been removed from the final permit.

**Changes From the Draft Permit to the Final Permit**

<b>Cause for Change in the Permit</b>	<b>Final Permit Part</b>	<b>Summary of Change from the Draft Permit to the Final Permit</b>
Comment #52	Section II.A	<p>Many of the permittee's requested modifications to the variance conditions have been added to the final permit including:</p> <ol style="list-style-type: none"> <li>1. Identify the source and significant contributors of metals and I/I to the treatment plant. A demonstration project report identifying the source of metals and I/I and how to reduce those sources will be submitted to EPA and DEQ by December 31, 2004.</li> <li>2. Reestablish the interagency agreement with the City of Mullan by one year from permit issuance date. The interagency agreement shall include a compliance schedule that commits the City to correcting the deficiencies in the collection systems and specific I/I reduction tasks. The compliance schedule will be in place and submitted to EPA and DEQ by July 1, 2006.</li> <li>3. Submit a report to EPA and DEQ verifying the reduction in excess flows due to the demonstration project by October 31, 2005.</li> <li>4. Correct significant contributors of I/I that were identified in the collection systems by five years from the issuance date of the permit such that sanitary sewer overflows (SSOs) are eliminated. A detailed report outlining what upgrades were necessary shall be submitted to EPA by five years from the issuance date of the permit.</li> </ol>

## APPENDIX D - References

- EPA 1979 U.S. Environmental Protection Agency (EPA). *Estimating Water Treatment Costs. Volume 2: Cost Curves Applicable to 1 to 200 mgd Treatment Plants*. August 1979.
- EPA 1991 U.S. Environmental Protection Agency (EPA). Technical Support Document for Water Quality-based Toxics Control. Office of Water Enforcement and Permits, Office of Water Regulations and Standards. Washington, D.C. March 1991. EPA/505/2-90-001.
- EPA 1993 U.S. Environmental Protection Agency (EPA). *Water Quality Standards Handbook*. Second Edition. September 1993
- EPA 1995 U.S. Environmental Protection Agency (EPA). *Interim Economic Guidance for Water Quality Standards Workbook*. March 1995. EPA-823-B-95-002.
- EPA Region 10 1996 U.S. Environmental Protection Agency (EPA) Region 10. Guidance for WQBELs Below Analytical Detection Quantization Level. Effective date March 22, 1996.
- EPA Region 10 2001 U.S. Environmental Protection Agency (EPA) Region 10. Coeur d'Alene Basin Final Remedial Investigation/Feasibility Study, Remedial Investigation Report. EPA Region 10. September 2001.
- EPA Region 10 2001 U.S. Environmental Protection Agency (EPA) Region 10. Coeur d'Alene Basin RI/FS, Final Feasibility Study Report. October 2001.
- IDEQ 2003 Idaho Department of Environmental Quality (IDEQ). Letter from Gwen P. Fransen, IDEQ, to Robert R. Robichaud, EPA, Section 401 Certification regarding NPDES Permit No. ID-0021296 South Fork Coeur d'Alene River Sewer District - Mullan Wastewater Treatment Plant. 2004.