

CHAPTER 7 – PUBLIC COMMENTS AND AGENCY RESPONSES

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7.0. PUBLIC COMMENTS AND AGENCY RESPONSES

7.1. Public Comments

7.1.1. Introduction

The NOA for the DEIS/DRMPA was published in the Federal Register on March 21, 2014 initiating a 90 day comment period that ended on June 18, 2014. In addition, the BLM held two public comment meetings for the DEIS/DRMPA: one on May 13, 2014 in Challis and one on May 14, 2014 in Boise. A total of 716¹ parties provided comments on the DEIS/DRMPA via personal delivery to the BLM Challis Field Office, postal mail, and email. All of the comments were cataloged and carefully evaluated with a response provided to each comment and the DEIS revised accordingly (Appendix E, Section 7.2., and Section 7.3).

7.1.2. Demographics

The comments were demographically coded to help provide an overall picture of the respondents such as where they live, their general affiliation with various organizations or government agencies, and the manner in which they responded. The coding allowed agency managers to identify specific areas of concern linked to respondent categories, geographic areas, and response types. However, full consideration was given to every comment, regardless of the address related to the comment or whether a comment was expressed by one or many respondents; all input was considered and all relevant public concerns were captured in the analysis process.

All of the respondents were from the US with the majority of the respondents from Idaho (81 %). The counties in Idaho with the most respondents were Custer County (38 %), Lemhi County (10 %), and Bannock County (4 %). The respondents from the remaining counties in Idaho comprised 25 percent of the total respondents (716). The respondents represented many businesses; Federal, State and local government agencies; mining industry representatives; as well as unaffiliated individuals and other organizations (Appendix E).

7.1.3. Content Analysis

The comments were processed by content analysis, a systematic method of compiling and categorizing the full range of public viewpoints and concerns regarding a plan or project. Content analysis is intended to facilitate good decision-making by helping the planning team clarify, adjust, or incorporate information into the preparation of the EIS for a project. The process does not treat comments as votes or attempt to sway decision makers toward the will of any majority or particular viewpoints. Content analysis provides the means to ensure that every original comment is considered at some point in the decision process. All written responses (e.g., letters, emails, facsimiles, etc.) are included in the analysis.

¹ A number of respondents provided comments on the DEIS/DRMPA via e-mail generated by a private website (<http://bipac.net/page.asp?content=startpage&g=idahomining>). However, due to a technical problem with the website, some of the e-mails were not forwarded to the BLM. All of the missing e-mails contained "Please Support the Mine Expansion" in the subject line. The company managing the website was not able to locate the missing e-mails, but in August 2014 the company provided the BLM with the names and addresses of the respondents with missing e-mails. These respondents were all added to the project mailing list and will receive notification of the availability of the FEIS and RODs for the project.

In the content analysis, each respondent was given a unique identifying number, which allows specific comments to be linked to their sources. The names and addresses of the respondents were then entered into a database, as well as the relevant demographic codes. The project mailing list was updated accordingly. The comments from each respondent were then cataloged (Appendix E) and evaluated by topic so that a comment or similar comments could be summarized as a specific public concern statement.

The breadth, depth, and rationale of each comment are especially important. In addition to capturing relevant factual input, the content analysis process attempts to capture the relative emotion and strength of public sentiment behind particular viewpoints to represent the public's values and concerns as fairly as possible. The public concern statements formulated from the comments are used to facilitate systematic review and response by the decision makers. Each public concern statement is a succinct summary of one or more comments expressing similar viewpoints (Section 7.2).

7.2. Public Concern Statements – MMPO

7.2.1. General Comments (GEN)

GEN 1:

The use of the term “public land” versus “Federal land” in the EIS is confusing.

Response:

The two terms are synonymous. However, the BLM commonly refers to BLM-administered lands as *public lands* whereas the Forest Service commonly refers to Forest Service-administered lands as *National Forest System lands*. Therefore, *Federal land* is used in the EIS to refer to both types of government-administered lands. A footnote was added to the FEIS to clarify the situation.

GEN 2:

The BLM needs to make sure they consider this project carefully because the BLM decision will affect us all.

Response:

The FLPMA directs the BLM to manage public lands for multiple use (Section 1.9.2.) defined as “management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.” The FLPMA addresses topics such as land use planning, land acquisition, fees and payments, administration of Federal land, range management, and rights-of-ways on Federal land. The NEPA requires Federal agencies to integrate environmental values into their decision making processes by considering the environmental effects of proposed actions and reasonable alternatives to those actions.

GEN 3:

I support the MMPO and want the BLM to approve it.

Response:

Each of the MMPO alternatives represents a course of action that addresses issues and concerns to a varying degree. The BLM and Forest Service will select an MMPO alternative based on an overall analysis of environmental effects, other relevant factors (i.e., economic and technical considerations), and agency statutory missions. The basis for the selection of the alternative will be specified in the RODs. The EIS discloses the agency-preferred alternative as Alternative M2 – MMPO as Submitted by TCMC (Section 2.0).

GEN 4:

Our country’s greatest resources are our natural ones. Allowing for the responsible harvest of our natural resources benefits all our country’s citizens especially those who are the closest to its source.

Response:

The BLM mission is to allow for land productivity, including mining, while sustaining the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

GEN 5:

TCMC is a safe operator with an excellent environmental record. They use best practices to protect resources.

Response:

Past performance or the environmental record of a proponent is not considered in the NEPA analysis per se, but the ability of a proponent to successfully complete a project, including monitoring and mitigation, is considered during the consideration of an application.

GEN 6:

Reclamation should be done in such a way that the land is put back in its native state.

Response:

Reclamation would not be able to achieve exactly the same “pre-mine” conditions. The overall goal of the reclamation plan is to reclaim the mine site to support wildlife habitats similar to those which occur adjacent to the site. Related objectives include hydrologic function, soil productivity, and aesthetics. The reclamation of the site would produce landforms which provide habitat features and increase the amount of habitat edge. The open pit would not be backfilled, but instead would remain as a water storage facility (Section 2.1.1.8).

GEN 7:

The MMPO will pollute our resources.

Response:

The EIS discloses environmental effects related to the alternatives in Chapter 4 and Chapter 5. The intent of the NEPA is to disclose environmental effects to allow informed decisions to be made by the agency conducting the analysis, not to eliminate all environmental effects.

GEN 8:

The mine is a major contributor to the global supply of molybdenum which is an important modern metal and an important component of many products we rely on.

Response:

Molybdenum is an important component of high-strength steel alloys and industrial lubricants, and has high-temperature applications as catalysts. The TCM is the second largest producer of molybdenum in the US, and the fourth largest producer in the world. Additional information related to molybdenum economics is provided in the FEIS (Section 3.13.1).

GEN 9:

The BLM and TCMC have a responsibility to protect our environment.

Response:

The protection of natural resources has been incorporated into the project with environmental controls and monitoring (Section 2.1.1.7. and Section 2.1.3.5.) and mitigation if necessary (Section 4.21). Also, long-term water management (Section 2.1.1.8.) and adaptive management (Section 2.1.1.9.) has been incorporated into the project.

GEN 10:

A mine should not be on public land.

Response:

The BLM is directed by the FLPMA to manage lands “in a manner which recognizes the Nation’s need for domestic sources of minerals, food, timber, and fiber from the public lands including implementation of the Mining and Minerals Policy Act of 1970 (84 Stat. 1876, 30 USC 21a).” Furthermore, the Mining and Minerals Policy Act directs Federal agencies to “foster and encourage private enterprise in (among other goals) the development of domestic mineral resources and the reclamation of mined land.” This applies to both the BLM and Forest Service.

GEN 11:

People should be able to make a living off of our public lands.

Response:

The expansion of the facilities would occur on a mix of private and public lands (Section 2.1.3).

GEN 12:

The BLM should choose Alternative M1 so the mine shuts down in 2015. I do not want any more waste rock put in the WRSFs (M2) or in a new WRSF (M3).

Response:

Please see responses to GEN 7 and GEN 10.

GEN 13:

The BLM should ensure that mine plans, reclamation plans, and the final restoration configuration are adapted for wildfires. Fires can damage important infrastructure such as piping, valves, liners, caps, and culverts and remove vegetation relied upon for removal of water from waste rock and tailings facilities. The EIS needs to describe how the site will be fire resilient.

Response:

The site is in a forested area with a probability of wildfire similar to that of any facility in the locality. However, unlike most facilities in the locality, the core area of the site is inherently fire resistant due to a lack of vegetation and the nonflammable surface of the surrounding areas of the WFSFs, open pit, and TSF. TCMC also maintains a substantial fire suppression program including ample water, pipelines, a dedicated fire truck, and wildland fire-fighting equipment, as well as a variety of heavy mine equipment that could be utilized in wildfire suppression. The probability of wildfire at the mine is discussed in the EIS (Section 4.4.1.2., Section 4.10.1.1., Section 4.10.1.2.), but the details of such are too speculative to provide additional meaningful NEPA analysis – depending on the nature and results of a wildfire, the appropriate agencies and private parties would coordinate in an emergency manner to suppress the wildfire and perform appropriate post-wildfire management. For example, TCMC would repair damaged buildings and equipment which are insured against fire, as occurred when a portion of the conveyor belt caught fire and was damaged in the early 2000s.

GEN 14:

With the number of land-managing agencies being reduced from three to two (IDL and Forest Service), the number of annual inspections would decrease by four. This reduction could have real impacts on the detection and response to situations needing attention. The mine is regularly inspected by an interagency taskforce consisting of the BLM, Forest Service, IDWR, IDEQ, IDL, and the IDFG. The level of inspections should remain the same or be increased in the future. TCMC should keep the provision that tours be offered to the public upon request.

Response:

The change, if any, in the number of annual inspections of the mine is unknown and are administrative matters, not NEPA issues. That is, the agencies inspect the mine as deemed appropriate considering a wide variety of factors. The NEPA analysis is made based on what an operator proposes; the agencies do not assume that an operator would violate laws and regulations, and thus the frequency of inspections is not a NEPA issue. If the selected land were to be owned by TCMC, the BLM would no longer have jurisdiction and inspect the mining

operations on the selected land pursuant to 43 CFR 3809. However, the small portion of the mine that would remain on BLM land would be subject to inspections pursuant to 43 CFR 3809 or the FLMPTA in the case of a special use permit (Section 2.2.10). TCMC may offer public tours at its discretion in the future. However, the EIS was revised to note that there would probably not be the option of public tours sponsored by the BLM pursuant to 43 CFR 3809.900 in the case of the land disposal action alternatives (Section 4.16.2.2).

GEN 15:

The DEIS states that sewage from the mill is disposed of in the TSF but it is unclear if the sewage is treated at all and to what degree. The EIS needs to ensure that waste material is properly treated and disposed of.

Response:

Sewage generated at the mine site is treated using a conventional septic tank and drain field system south of the mine change house. Sewage from the mill is piped to a holding tank and then pumped by the sewage lift station to the tailings pipeline for disposal in the TSF (Section 2.1.1.6). The TSF is an approved waste storage facility, which includes the disposal of sewage generated at the mine (Doughty 2014).

GEN 16:

Even if the BLM was unable to indicate with any great degree of certainty the results of the project, because the cumulative effects analysis requires an agency to predict future conditions, uncertainty is an inherent part of the process. Therefore, a general statement about uncertainty does not satisfy the procedural requirement that an agency take a hard look at the environmental effects of an action. The BLM can certainly explain specific projections with reference to uncertainty; however, it may not rely on a statement of uncertainty to avoid even attempting the requisite analysis. This was upheld by the Ninth Circuit (Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1134 [9th Cir. 2007]).

Response:

The comment does not identify any specific item(s) in the cumulative effects analysis (Chapter 5) for which the concerns about uncertainty would apply. However, the EIS was revised to include more cumulative effects analysis, particularly with changes in land tenure. Regardless, cumulative effects analysis is necessarily less detailed than site-specific project analysis, which introduces uncertainty in the analysis. However, the agencies have still taken a hard look at the environmental effects with the available information and the BLM believes the cumulative effects analysis in the FEIS identifies the effects that may occur given other reasonably foreseeable actions in the CESAs. Through internal and external scoping, the supporting scientific studies, and the public comment period for the DEIS, the BLM is not aware of any cumulative effects missing from the FEIS that could reasonably be expected to cause the decision makers to reach different decisions.

GEN 17:

The Three Rivers Quarry and Idaho Cobalt Project are both currently on hold, in care and maintenance or closed. The EIS should clarify this.

Response:

The EIS has been revised to reflect the most current status of the Three Rivers Stone Quarry and Idaho Cobalt Project (Chapter 5).

GEN 18:

The NEPA process is taking too long and the BLM and Forest Service need to move it along faster.

Response:

The BLM is the lead agency for the EIS. The Forest Service is a cooperating agency. The NEPA process is proceeding as quickly as possible while still meeting project needs under the NEPA process. The agencies expect to issue RODs for the project during 2015.

GEN 19:

On an issue of objectivity regarding different resources, the only time the term “adversely affect” is utilized in Section 1.13 is with reference to local, State and national economies and social conditions in local communities from decreased production or closure of the mine. However, with regard to other extremely important issues, including water quality, fisheries, wildlife, etc., the DEIS refers to “effects” of expanded and continued mining with no such qualifier, although the impacts would certainly be adverse in most cases. This use of language represents a potential bias in the document favoring economic considerations over environmental and human-safety related issues and should be rectified.

Response:

The EIS was revised to remove “adverse” from Section 1.13. for consistency. That is, because an effect may be adverse or beneficial, depending on the perspective of the individual, the EIS tries to limit the use of “adverse” to when required by laws or regulations such as the ESA (Section 4.8.), Tribal treaty rights and interests (Section 4.14.), cultural resources (Section 4.15.), or unavoidable potentially significant adverse effects (Section 4.18) (for which “adverse” is defined as being from the perspective of the majority of individuals).

GEN 20:

The maximum duration of care and maintenance before reclamation is triggered needs to be described. The Idaho Cobalt Project on the SCNF is in a “care and maintenance” phase, although the mine was only partially developed. The agencies and TCMC may well have different opinions on when to “pull the plug” and have the disturbed areas reclaimed and soil productivity restored.

Response:

There is no maximum duration of care and maintenance (interim management plan) under a plan of operations per 43 CFR 3809.401, just as there is no maximum duration for a plan of operations. An operator may keep a mine in care and maintenance as long as the requirements of the applicable laws and regulations are met.

GEN 21:

IDWR does not approve reclamation design plans until the actual time of final reclamation, but we believe the BLM has an obligation to present its version of the reclamation plan to the public as part of this EIS as public resources downstream of the TSF area are managed by the BLM.

Response:

A summary of the consolidated reclamation plan is provided as Section 2.1.1.8. The entire consolidated reclamation plan document (EnviroNet 1999) is available for public review in the administrative record but it is not practical (due to its size) to include the document in the EIS. The situation is the same for other supporting documents such as the plan of operations and the modified plan of operations (which include the reclamation plan) as the documents are too numerous and large to include in the EIS, even as appendices. However, these documents are part of the administrative record and available to the public upon request. The BLM will also typically make such documents available on the project website when there is relatively high demand for such documents.

GEN 22:

Because many of these facilities are effectively permanent features on the landscape, they should be designed to withstand more than the estimated 500 year/24 hour storm event. We propose looking at the 5,000 year event. The BLM should assess the potential impacts to the facility during particularly large events.

Response:

The TSF is designed to safely manage the probable maximum flood (Section 2.1.1.6). Less critical facilities (e.g., no loss of life from hydrologic failure) such as diversion ditches are designed for reclamation for less severe precipitation events, typically the 100 year/24 hour storm. For example, the BLM requires cyanide leaching facilities to safely manage the 100 year/24 hour storm (43 CFR 3809.420), and the IDWR requires certain sedimentation ponds to safely manage the 500 year/24 hour storm (IDAPA 37.03.06). The Nuclear Regulatory Commission requires radioactive tailings storage to be designed to provide reasonable assurance of control of radioactive hazards for 1,000 years, to the extent reasonable (10 CFR 40, Appendix A). Therefore, designing nearly all of the post-closure facilities at the mine to safely manage a 500 year/24 hour storm (and the TSF to safely manage the probable maximum flood) is extremely conservative. In addition, water impounding structures designed for a 5,000 year/24 hour storm would generally be enormous in size and inconsistent with natural streams and topography (i.e., in conflict with reclamation objectives), as well as raising issues such as how would such large structures effectively convey the water from more typical storms such as the 10 year/24 hour storm. Moreover, estimates of the magnitude of a 5,000 year storm

would be extremely unreliable due to the lack of historic data for the recurrence interval (5,000 years).

GEN 23:

Why is Type 1 waste rock separated from Type 2 waste rock?

Response:

This is standard practice in modern mining to segregate a potentially acid-generating material from a material without acid generation potential. In that way distinct reclamation and water management actions can be utilized for the different material types.

GEN 24:

What if the mine closes sooner than expected? It will leave a contaminated mess.

Response:

TCMC already assumes the cost of long-term water management, monitoring, and reclamation under the terms of their current MPO. Regardless of whether the mine is mining or temporarily shut down, TCMC has assumed responsibility for these actions. In addition to administration of funding, the agencies administer implementation of reclamation within their jurisdictions (Section 1.7).

7.2.2. Alternatives (ALT)

ALT 1:

As one of the driving issues, the BLM should show how water quality issues such as acid mine drainage and exceedances of metals can be better addressed through additional alternatives. A reinvestigation of caps, covers, liners, water diversions and interception/pumpback stations is warranted.

Response:

No exceedances of State WQSs are reasonably foreseeable for any of the MMPO alternatives (Section 4.6). The exceedances noted in the EIS would be only for the highly conservative water quality analysis scenario under Alternative M2 or Alternative M3, and would not be expected to persist. The highly conservative (upper estimate) scenario is provided to fully disclose the risks to water resources, rather than present only the reasonably foreseeable effects of the best estimate scenario. The EIS was revised to provide more details about the adaptive management for water resources (Section 2.1.1.9.), which would include corrective actions as appropriate. The TSF and portions of the WRSFs would be capped/covered to minimize the infiltration of water (e.g., Section 2.1.1.8.), and the effects to water quality and quantity are evaluated accordingly in the EIS. No new information was provided to the BLM during the NEPA process to generate new alternatives or mitigation/effects related to the caps/covers/liners, water diversions, or SRD/pumpback station. Artificial liners for the WRSFs were considered in the administrative record but not evaluated in detail because such source mitigation would not be appropriate given the proposed long-term water management plan, i.e., active water treatment. The EIS was revised to include such information (Section 2.1.7).

ALT 2:

There is a lack of alternatives in the DEIS with respect to primary issues. This is an extremely complex project with many complicated and interacting variables. Additional alternatives are required because the modeling provided in the EIS predicts spikes of a variety of COCs in Thompson Creek, Squaw² Creek, or the Salmon River under a range of flow conditions and for prolonged periods of time that would result in numerous violations of Idaho's antidegradation and/or CWA regulations (CWA Section 313 and 228). The BLM needs to develop additional alternatives that are more protective of water quality in both near and long term and that will further minimize the need for post-closure water treatment.

Response:

The project involves an existing mine with supporting infrastructure and a fixed ore body with a specified rate of production. These factors, coupled with the current worldwide economic environment, do not allow alternatives such as relocating the existing mine facilities to another location out of the S. Creek drainage (Section 2.1.7). In general, the agency-preferred alternative would allow mine operations to continue (at the same production rate) for longer than originally anticipated, with essentially the same environmental effects as currently exist and are permitted.

In addition, most of the mine is on private land. Consequently, the Federal decision space (Section 1.6) is rather limited for the project, e.g., where to place some additional waste rock and tailings, whether a 404 permit should be issued for additional fill in several acres of wetlands, and where to relocate a power line. A wide range of action alternatives were considered early in the NEPA process (Section 2.1.7). No reasonable alternatives to those in the EIS were identified through internal and external scoping (JBR 2011), the supporting scientific studies, or the public comment period for the DEIS (Section 7.2.2. and Appendix E). The minimum number of alternatives required for NEPA analysis is a proposed action and a no action alternative. For example, the recent EIS for the Hycroft Mine expansion evaluated two alternatives: no action and proposed action. The TCM EIS also evaluates not a new mine but a mine expansion with a similar time frame as the Hycroft Mine expansion. However, the TCM expansion would not increase the workforce and would have only 1/3 of the additional surface disturbance of the Hycroft Mine expansion. There is otherwise no minimum number of alternatives, the more of which greatly increase the size of a NEPA document typically without allowing for better decisions.

The EIS summarizes the reasonable alternatives that were considered but not fully analyzed. Throughout the project the agencies have encouraged the public to suggest specific, reasonable alternatives.

² *Squaw Creek* is an official place name in Custer County, and appears in numerous published documents including US Geological Survey topographic maps. The name was established by the US Board of Geographic Names to maintain uniform geographic name usage throughout the Federal Government. However, the word *squaw* is offensive to some people including the Shoshone-Bannock Tribes. Therefore, *Squaw Creek* is hereafter referred to in the main text as *S. Creek*.

ALT 3:

The failure of the EIS to consider a reasonable alternative of pit lake prevention/remediation is a violation of NEPA's mandate that the agency fully consider all reasonable alternatives.

Response:

The backfilling of the open pit under reclamation and closure was evaluated as an alternative considered but eliminated from additional analysis in Section 2.1.7.; however, no other reasonable alternatives or mitigation related to the pit were identified through internal and external scoping (JBR 2011), the supporting scientific studies (KP 2011b) (CNI 2011), or the public comment period for the DEIS (Section 7.2.2. and Appendix E). The fact that the pit lake would not function ecologically as a natural lake is identified as an Unavoidable Potentially Significant Adverse Effect in Section 4.18. However, the water pumped into the pit would be treated to prevent any substantial concentrations of contaminants from developing, e.g., all of the concentrations of COCs in the pit lake would be at least two orders of magnitude below the screening concentrations for wildlife drinking from the pit lake (Section 4.7.1.1). The treatment of the water pumped to the pit is part of the long-term water management and is an accepted treatment method.

ALT 4:

The No Action Alternative, M1, refers to the completion of Phase 7, which was analyzed and selected in the previous EISs (1980 and 1999). The BLM also states that M1/Phase 7 will be modified in order to address the need to treat mine-affected water in perpetuity. These are conflicting mandates. Phase 7 specifically calls for the reclamation of infrastructure and lands, some of it related to water capture and treatment. However, both the BLM and the company realize the need to adjust the plan to facilitate post-closure water treatment and call for the retention of water management and treatment infrastructure. The current reclamation plan does not address the issue of active water treatment and this factor was not evaluated in the 1980 or 1999 EISs. The changed conditions (mine-affected water) and the revision of the EIS/reclamation plan are still not adequately described in the current EIS, in violation of NEPA. NEPA requires the agencies to carefully consider detailed information concerning significant environmental impacts. An additional alternative (M1-B, for example) is needed to describe how M1 will be adapted to the new, changed circumstance of dealing with mine-affected water.

Response:

The modification of Phase 7 to include long-term water treatment is a necessary, common-sense approach to forward-looking NEPA analysis. Active water treatment is not described in the approved reclamation plan for Alternative M1, but would have to be incorporated into the current reclamation plan even if TCMC were to withdraw the proposed MMPO. That is, the approved reclamation plan requires any discharged water to meet all applicable laws and regulations, and active water treatment would be required. Therefore, active water treatment (Section 2.1.3.6.) is implicitly required. All of the MMPO alternatives thus describe and evaluate how the mine will manage water in the long-term, and an Alternative M1-B would evaluate the same effects to water resources as Alternative M1.

ALT 5:

The 40 CFR 230.10[a] states the following: “No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.” Some additional exploration of ways to reduce fill material is warranted. For example, using sand to backfill the waste rock buttress of the TSF may result in fewer impacts to upper Bruno Creek.

Response:

The administrative record for the project documents attempts by the agencies and the proponent to minimize the amount of waste rock and tailings that would need to be stored at the mine. Several of these methods are noted in the EIS (Section 2.1.7). Through internal and external scoping (JBR 2011), the supporting scientific studies, and the public comment period for the DEIS (Section 7.2.2. and Appendix E), no feasible alternatives that would meaningfully reduce the amount of waste rock or tailings were identified including hauling sand or waste rock to the toe of the TSF.

ALT 6:

The BLM dismissed an alternative which would have used Type 1 (non-reactive) waste rock to buttress the TSF embankment. This alternative would help decrease the steepness of the face of the “sand dam” tailings impoundment and help stabilize the structure. However, this alternative was dismissed because the Type 1 waste rock that would be used is in limited supply and is needed to reclaim the Pat Hughes and Buckskin WRSFs. The BLM has not considered alternative covers and caps for the waste dumps that may reduce the amount of Type 1 waste rock needed to provide a relatively impermeable cover. In disregarding a buttress alternative, the BLM also mentions the lack of sand to fill the area behind the buttress. The proposed action would increase the final reclaimed height of tailings impoundment by 96 feet, implying that there is no shortage of material. The BLM also mentions the higher capital and operation costs for this alternative. Again, while practicality and short-term cost need to be considered, so do long-term costs in the event of a catastrophic failure in the tailings facility. The BLM also dismisses this alternative because it would entail disturbing substantial new area, but this did not prevent the BLM from developing Alternative M3 which would also disturb a substantial new area. The area that would be disturbed is already impacted by the SRD and is not a high priority for stream restoration.

Response:

The lack of suitable material to buttress the TSF was only one of a number of reasons why the alternative was not further analyzed (Section 2.1.7). The main reason is that the best available science (e.g., KP 2012) demonstrates the TSF would be stable for perpetuity (e.g., considering the maximum credible earthquake and maximum probable storm [de minimis risk of such events]) when reclaimed according to the proposed reclamation plan. Thus, there is no reason to place additional material in the embankment at enormous cost and additional surface disturbance (of the areas that would be excavated to provide the Type 1 rock, as well as below the TSF where the Type 1 rock where the SRD and pumpback station would need to be relocated farther

downstream in the Bruno Creek drainage). In addition, the long-term water management at the mine (i.e., active water treatment) negates the usefulness of artificial liners on the WRSFs (i.e., the expense of reducing a small amount of infiltrated water would not be justified by a meaningful cost savings in water treatment). The tailings impoundment would be raised by clay and silt, whereas the tailings embankment would be raised by cycloned sand, all of which is needed to raise the embankment to the final design height (Section 2.1.7).

ALT 7:

The proper closure and subsequent management of WRSFs covers several issues, including water quality, fisheries, wildlife, wetlands, water treatment needs, water treatment costs, adequacy of bonding, and Tribal treaty rights. The quantity and quality of water seeping from the WRSFs and affecting the above issues can be directly related to the amount of meteoric water allowed to infiltrate the dumps and exit via the toe of the dump or seep into the groundwater. Technologies regarding cover and cap designs have improved greatly in the last several years. For example, geosynthetic clay laminate liners appear to provide substantial benefits over previous designs. Each project is unique and technologies that work for one project may not be directly applicable to others, but we think this is a relevant issue in this case. The BLM needs to develop alternative(s) concerning caps, covers, and impermeable layers for WRSFs and examine the need to further stabilize the TSF so that it can withstand significant seismic events beyond the foreseeable future.

Response:

Net infiltration into the WRSFs is not the main driver for the active, long-term water treatment for this project. It is assumed the recommendation for a geosynthetic clay laminate liner alternative would be to provide added control of net infiltration from precipitation and increase the reliability of the effects analysis. In fact, although the EIS describes the plans for constructing an earthen cover for the WRSFs which would significantly reduce net infiltration into the waste rock, the effects analysis conducted for the EIS ignored any beneficial effect from the cover to reduce net infiltration of precipitation (Section 4.6). This is one way the effects analysis is conservative. Analyzing the effects incorporating the full effects of the earthen cover, or a geosynthetic clay laminate liner, would reduce the predicted effects from those described in the EIS (Section 4.6.1).

ALT 8:

Alternative M3 anticipates increased flow from the Pat Hughes WRSF into the shallow aquifer. This is largely due to the fact that the layer of relatively impermeable Challis volcanics which is beneath the existing WRSF does not extend out underneath the expanded waste rock boundary. Without this geologic liner, meteoric water and groundwater traveling through the waste rock can more easily enter the metasediment layer and the aquifer, bringing with it mine contaminants. Although the planned cutoff walls are expected to capture much of the water, some water will still seep around these intercept points. Long term predictions for Alternative M3 show the possibility of spikes of copper concentrations that exceed CCC values and these intermittent exceedances are expected to occur in perpetuity with potentially detrimental effects to listed fish species at some scale. The EIS states that capping is not expected to alter the behavior of the affected seepage or performance of cutoff walls within the groundwater systems below these

facilities but provides no analysis of this reasoning. The BLM should analyze additional alternatives to address this issue. Possibilities include reengineering the waste rock facilities so that their boundaries are constrained by the ability to contact the volcanics, moving some of the volcanics underneath the Phase 8 expansion, placing an impermeable clay-based liner underneath the footprint of the waste rock in advance of WRSF construction, or placing an array of groundwater-intercept pumps (in addition to PW13, PW14, and PW15) beyond the toe to capture this contaminated seepage.

Response:

The exceedances of State WQSs are predicted to occur under the rare conditions of low flow in the receiving streams along with the highest potential chemical loadings from the WRSFs. These conditions are not expected to persist and were provided to fully disclose the risks to water resources (Section 4.6). Modifying the caps, revegetation, or installing artificial liners at the WRSFs or the TSF would not alter the effects to water resources as such modifications would not affect the quantity of water captured by the water management system at the mine. Adaptive management (Lorax 2012b, Section 2.1.1.9.) would allow the capture and treatment of more groundwater in the improbable event that such would be necessary.

ALT 9:

An alternative should be developed in which the tailings and/or waste rock are relocated back into the main pit (or other geologically stable area). While rehandling this material would require additional expense, the BLM should compare this with the cost of dealing with a catastrophic dam failure, renewed acid generation, and effects of downstream public health and fisheries issues. The BLM initially dismissed this alternative because of cost issues but did not analyze the potential cost-savings benefits and reduced environmental risks.

Response:

A pit backfill analysis is required by 43 CFR 3809.401, and the results of such clearly demonstrate that backfilling the pit is not feasible, either concurrently or after mining (Section 2.1.7).

ALT 10:

The BLM should develop alternatives regarding the design and engineering of the waste rock and tailings facilities to see if the quantity of water contacting mine waste and needing treatment can be further minimized.

Response:

Through the extensive background studies and the public involvement process, no reasonable methods to further reduce the amount of water infiltrating the WRSFs and TSF were identified. For example, the cost of installing a clay liner and maintaining the liner in perpetuity would not be justified by the relatively small reduction in the amount of water that would need to be treated. Furthermore, the cap for the TSF is designed to correspond to the estimated infiltration to maintain some water in the TSF to minimize ARD.

ALT 11:

This facility is going to need to be fully functional for centuries in order to protect public resources, and, even, then, failures are likely. The current two action alternatives offer the public no difference between the end results of a treatment failure in the future, as there are material differences in the probability of consequence of these risks. As such, the EIS has failed to develop meaningful alternatives regarding the most significant environmental risk. We appreciate the commitment from TCMC “to implement and maintain, in perpetuity, whatever types of treatments are needed to maintain ambient water quality in the Salmon River” but the BLM needs to design alternatives so that the need for these treatments are minimized and that water quality is also protected in tributaries such as Thompson Creek and S. Creek. The public deserves an opportunity to review and compare alternatives for the probability and consequence of future water contamination. The selected alternative should do the best job of protect public resources far into the future.

Response:

The (permanent) failure of the facility is not reasonably foreseeable and would be a worst-case scenario for which the NEPA does not require analysis, i.e., an alternative analyzing permanent treatment failure is not required (however see exposure to risk, Section 2.1.5). The current conditions in the Pat Hughes drainage already require collection and treatment of mine-affected water, and no alternatives have been identified to date which would eliminate or materially reduce the need for such activities. The proposed treatment is quite conventional and is currently utilized successfully at the mine (to enhance the mill recovery rather than for environmental concerns). The comment is correct in that the two action alternatives (as well as the no action alternative) do not substantively differ in regards to water treatment. Please see also the responses to ALT12, WTR 18, and WTR 34.

ALT 12:

To address acid-mine drainage issues, waste rock and ore need to be more carefully evaluated, segregated, and handled. The BLM anticipates increasing acid generation in the face of the TSF and at Pat Hughes WRSF. The sulfate levels in the tailings impoundment, MW10, and the main drain all exceed the Idaho groundwater standard. Additional design features need to be developed to reduce or reverse this trend rather than simply relying on the water capture and treatment system. A limited number of samples were collected (only one sample was collected from MW10 in 2010) and the BLM needs to provide a diversity of samples at different flow rates or times of year. Redundant water capture systems need to be in place in the event that water contamination continues to be an issue. Waste rock pits need to be covered (we suggest geosynthetic clay laminate liner as one option) and double-lined with water capture, pumping, and treatment capabilities. In addition, redundant downgradient water capture systems should be developed.

Response:

No reasonable improvements to material handling at the mine or methods to reduce the trends of development of ARD in the WRSFs and the TSF were identified from internal and external scoping (JBR 2011), the supporting scientific studies, or the public comment period for the DEIS

(Section 7.2.2. and Appendix E) (apart from not creating pods of potentially acid-generating material within the Buckskin WRSF – a modification already approved by the IDL). The reasonably foreseeable effects to water quality are fully disclosed in the EIS (Section 4.6), and are summarized from an extensive hard look at both the surface water and groundwater at the mine, including the development of a pit lake. The conclusions were derived from the best available science. Extensive analysis of the water management plan (Lorax 2012a) and adoption of adaptive management related to the water management (Lorax 2012b, Section 2.1.1.9.) indicates that failure (without corrective actions) of part or all of a water collection system is not a reasonably foreseeable scenario. Redundant systems (with concomitant expense, surface disturbance, consumption of raw materials, etc.) would not be justified due to the relatively low concentrations of metals in even the untreated water. Furthermore, the adaptive groundwater management plan (Lorax 2012b) offers three mitigation contingencies in the event that “specified Performance Metrics” are exceeded. These include a slurry wall, a permeable reactive barrier, and additional pumping wells within the vicinity of the existing pump-back system. Please see also the responses to ALT 11, WTR 18, and WTR 34.

7.2.3. Geologic Resources and Geotechnical Issues (GEO)

GEO 1:

Molybdenum deposits are rare on public lands. The occurrence of metals cannot be moved or re-routed like other potential uses of public lands.

Response:

Comment noted. Some alternatives were considered but dismissed for this reason (Section 2.1.7).

GEO 2:

It makes more sense to expand operations where there is already a known and exposed molybdenum deposit rather than find a new deposit in a pristine area.

Response:

Comment noted. Several alternatives were considered but dismissed for this reason (Section 2.1.7).

GEO 3:

The agencies should choose Alternative M1 since there is already the potential for serious irreparable harm to Thompson Creek if the WRSFs collapse in an earthquake or storm.

Response:

Extensive and detailed site-specific geotechnical analyses demonstrate stability under both static and dynamic conditions (i.e., seismic shaking) for the pit walls, the WRSFs, and the TSF (CNI 2011; Golder 2007, 2010; KP 2011a, 2011b, 2013; URS 2000; VTN 1980b) (Sections 4.2.1.1. and 4.2.1.2). The facilities would be stable during even the maximum credible earthquake (de minimis risk of such an event) during both mining and post-reclamation. The No Name WRSF (Alternative M3) would be developed using the same fundamental design as that of

the Pat Hughes and Buckskin WRSFs; therefore, the geotechnical issues (i.e., stability) of the No Name WRSF would be the same as those under Alternative M1 and Alternative M2.

GEO 4:

The BLM states that the stability of the sand dam is not an issue. While the likelihood of a catastrophic failure may be relatively low, the environmental costs of a collapse would be extremely high and are not covered financially under any proposed scenario. We are concerned about the potential liquefaction of the sand dam during large-scale seismic events. This area is seismically active and the sand dam will be a feature on the landscape for millennia.

Response:

The administrative record documents that the best available science demonstrates that the TSF would be stable, both for static and dynamic (seismic) conditions, including that of the site-specific, maximum credible earthquake (de minimis risk of such an event) (Golder 2007, KP 2013, URS 2000). Such is summarized in the EIS (Section 4.2.1.1. and Section 4.2.2.2). TCMC has retained internationally recognized geotechnical experts to design and analyze the stability of the TSF. The results of this work indicate the facility should be stable in the long-term. These studies and designs have been reviewed and approved by the IDWR. The Federal agencies in preparing this EIS also retained world-class geotechnical experts to conduct a completely independent review of the design and stability of the TSF and have determined that they do not disagree with the stability conclusions of the engineers who designed the facility. With all of this expert engineering analysis, the agencies have concluded that the long-term stability of the TSF is the reasonably foreseeable scenario and the EIS analysis is based on such.

GEO 5:

The BLM refers to the term acid rock drainage instead of acid mine drainage. Acid rock drainage usually refers to natural situations where naturally exposed sulfides lead to decreased pH; whereas acid mine drainage usually refers to manmade situations where mining activities have increased the exposure and/or surface area of ore, waste rock or tailings resulting in acid-generating conditions. The EIS does not contain information on how this phenomenon was related to the TCM.

Response:

The terms ARD (acid rock drainage) and acid mine drainage are commonly used interchangeably even related to mining activity. The term ARD is thus an appropriate term for the EIS, and the term is explained in the context of the mine in the EIS (Section 3.6.1.1., p. 50).

7.2.4. Soil Resources (SOIL)

SOIL 1:

The BLM should look for other ways to reduce the final area of total soil resource commitment.

Response:

Reclamation would replace soil resources in disturbed areas, except for the open pit which would not be reclaimed (Section 2.1.1.8).

SOIL 2:

It is unclear from the EIS if there will be sufficient topsoil salvaged for adequate soil recovery during reclamation.

Response:

The EIS describes the reclamation that would occur (Section 2.1.1.8). The information summarized in the EIS is based on numerous technical studies and reports, which for topsoil include the volumes and locations of all required sources.

7.2.5. Vegetation, Forest Resources, and Invasive and Non-native Plants (VEG)

VEG 1

Whitebark pine seedlings should be planted in the higher elevations as part of restoration efforts. Aspen stands should also be prioritized for restoration. Noxious weed monitoring and treatment will have to be conducted for extended periods of time as part of the long term reclamation of the site. To help guide these plantings, the closure and reclamation plan needs to include additional information on the vegetation type, pattern, and projected ecological succession on all reclaimed areas.

Response:

The plantings would match, to the extent possible recognizing limitations in slope and soil type, the vegetation of the surrounding areas (Section 2.1.1.8). The seed mixture would be approved by the BLM and Forest Service and would include species that are appropriate for the elevation, topography, soil types, and ecological zone; this could include whitebark pine. The seed mixture, shrub, and tree plantings would also be chosen to reflect the same projected ecological succession as the surrounding area. For example, aspen and blue spruce are species that will be used in areas reclaimed to provide wetland and meadow habitat. Weeds would be managed under the adaptive management strategies for the project (Section 2.1.1.9).

VEG 2:

The final vegetation goals for the TSF should be described. Healthy vegetative cover can help address water infiltration concerns, but vegetation can change due to noxious weeds or wildfires.

Response:

These vegetation goals are described in Section 2.1.1.8. The general goal is to establish a healthy, perennial vegetation cover on the reclaimed surfaces. Weed control would be practiced during reclamation activities.

VEG 3:

The DEIS states that forests are expected to regenerate in this area in 150 to 200 years. Trees, including lodgepole pine, will likely recolonize the reclaimed surface of the tailings facility and will present a risk to the integrity of the cap.

Response:

The reclaimed TSF includes a soil cover that would permit water to infiltrate through the surface, i.e., the natural development of trees on the surface of the TSF would not compromise the water balance for the TSF. The surfaces of the benches on the TSF embankment would be covered with riprap, which would not be materially affected by tree growth. In any case, there would be relatively slow growth of trees in the locality and relatively shallow tree root systems of lodgepole pine and Douglas-fir.

VEG 4:

The MMPO would entail the harvest of approximately 3 million board feet of timber from about 400 acres. Although these lands would ultimately be converted for mine development, the logging methods can determine the short-term impacts of sedimentation in the watershed and may affect the future quality of the soils for growth media. TCMC and BLM should develop specific design features for the harvest program that minimizes erosion and maximizes retention of nutrients and soils for future reclamation purposes. These design features should be described in the EIS.

Response:

Timber harvest would follow BLM and Forest Service BMPs for timber harvest, which are designed specifically to reduce sedimentation and protect soil qualities (Section 4.4.1.2).

7.2.6. Range Resources (RNG)

RNG 1:

Grazing should not be allowed in areas under active reclamation/restoration until the vegetation reaches predetermined, sustainable targets.

Response:

There would be no authorized livestock grazing on BLM land at the mine for the foreseeable future (the Bruno Creek Grazing Allotment is closed in the Challis RMP). Livestock (and wildlife) grazing in cases may cause problems with revegetation as part of mine reclamation. However, for any of the land disposal action alternatives it would be TCMC's decision on how to meet the State reclamation standards for vegetation (IDAPA 20.03.02.140.11.b).

RNG 2:

The grazing forage could be contaminated by selenium.

Response:

No meaningful risk of selenium contamination of terrestrial vegetation at the mine site has been identified.

RNG 3:

Bank erosion is occurring along S. Creek due to current grazing in the riparian area. Steps need to be taken to address this. A timeline for this to occur needs to be provided.

Response:

Mitigation related to wetland and stream effects includes bank restoration and fencing on S. Creek (HDR 2014b, Appendix B). The mitigation on S. Creek would be initiated after the MMPO ROD is issued and the appeal period has expired.

7.2.7. Water Resources (WTR)

WTR 1:

Who is going to make sure the TSF is covered with water in perpetuity?

Response:

The IDWR has the authority over the reclamation of the TSF but would not approve a final plan until the time of reclamation; however, the most likely scenario is that the TSF would be capped with 7 feet of pyrite-reduced tailings solids followed by 2 feet of inert, Type 1 volcanic material. There would not be any water left in the impoundment (Section 2.1.1.8).

WTR 2:

Placing overburden into a drainage will pollute the water. The BLM should not choose an alternative that allows this.

Response:

The effects to water resources related to the WRSFs are provided in the EIS (Section 4.6). The construction of the WRSFs (and TSF) in (headwater) drainages was authorized as the only reasonable alternatives due to the rugged topography at the mine site and feasible transport distances. The WRSFs would be able to pollute water even if the facilities were somehow placed on ridge tops. Enlarging the facilities would not materially affect water quality due to the water management that would occur (e.g., active water treatment). The BLM was not able to identify reasonable alternatives to placing waste rock in drainages proximal to the open pit.

WTR 3:

Erosion control would protect against runoff and maintain stream water quality.

Response:

Comment noted. As presented in Section 2.1.1.6., Section 2.1.1.9., and Section 3.6., TCMC has a water management system that is directed by the IDEQ WQSs, designed to be protective of the environment, and includes erosion and sediment control measures.

WTR 4:

TCMC's water management strategy is sound and will be protective of long-term water quality.

Response:

Comment noted. Please see response to WTR 3.

WTR 5:

The water quality protection measures currently present at the mine are working as intended.

Response:

Comment noted. Please see response to WTR 3.

WTR 6:

Radical environmentalists say that a tailings impoundment failure could be catastrophic to the Salmon River, but nature delivers floods every year that don't do any damage.

Response:

The WRSF ditches would be designed to handle a 500 year/24 hour storm event, except for the Buckskin slope ditch which would be designed for the 100 year/24 hour storm (but the Buckskin Slope floodplain would manage the 500 year/24 hour storm). The Bruno Creek channel across the TSF would have the capacity to pass approximately 230 cfs at bank-full conditions, which is greater than the 500 year/24 hour flood from the Bruno Creek watershed upstream of the TSF embankment.

WTR 7:

The S. Creek watershed and aquatic and riparian ecosystems are intact and functioning and improving under current public and private management.

Response:

Comments noted. The background descriptions of S. Creek and the meaningful effects to S. Creek from the MMPO and land disposal alternatives are reasonably described in the EIS.

WTR 8:

The adaptive groundwater management plan is an effective way to plan and communicate strategies for monitoring and responding to effects to groundwater.

Response:

Comment noted. Additional information regarding adaptive management was added to the EIS (Section 2.1.1.9).

WTR 9:

The EIS should ensure that citations are available, and include an annotated summary table to assist in easily accessing the various documents related to water resources and the original data sources. Evaluating the results of water quality predictions is exceedingly difficult without the use of separate water resources technical reports that collated data from other reports.

Response:

The EIS states in the introductions for Chapters 3 and 4 (Sections 3.1 and 4.1) that additional detail is available in the water resources technical report (JBR 2014g), which includes the references to the various underlying water resources reports.

WTR 10:

The streams in the area are critical habitat for listed fish species, and in particular for the Salmon River which is designated as a domestic water supply. The Salmon River provides critical habitat for listed fish species. The stretch of the Salmon River between Thompson Creek and S. Creek is 303(d) listed due to sedimentation/siltation and water temperature. It is unclear whether a TMDL has been established for this segment of river. If not, the BLM cannot allow additional contaminants in the form of elevated water temperature and sediment. All action alternatives contribute to additional sediment in streams, in potential violation of the CWA. As such, additional design features or alternatives are needed to prevent further degradation. Thompson Creek, S. Creek, and the Salmon River are Tier II streams which are not necessarily available for additional pollutant loads. The action alternatives all have the potential to increase pollutants (even in relatively isolated incidents) in the form of metals, sediment, or temperature over the short or long term and thus are in potential violation of Idaho's antidegradation policy as no public review of the social and economic tradeoffs has been conducted.

Response

The EIS disclosed the 303(d) listing for all project area streams (Section 3.6.), including the listings noted by the commenter. The EIS also discloses the effects to water quality under the MMPO alternatives, including the No Action alternative (Section 4.6). The EPA antidegradation standards are under the authority of the IDEQ, not the BLM. The IDEQ, when determining NPDES permit limits, would take into account the current 303(d) status of the receiving waters, the nature of the discharges (including their sediment and temperature characteristics), and mixing zones as appropriate, when setting such limits to ensure that all WQSs, including antidegradation rules, will be met. As noted by the commenter, public review of the social and economic tradeoffs is a part of IDEQ's analysis that will be conducted during that time.

WTR 11:

While the water quality of Thompson Creek and S. Creek may meet numeric WQSs, certain flow conditions would result in spikes in copper, cadmium, or sediment which would result in a degradation of the resource under IDEQ regulations. The required Salmon River mixing zone ratio for NPDES Outfall 005 may not be met during certain low flow periods, in violation of the NPDES permit. Although the EIS states that "isolated

instances of instream water quality exceeding a numeric WQS, in and of themselves, may not be considered a violation of State law” (DEIS p. 4-42), the information presented in the EIS demonstrates a consistent pattern of predicted violations of Idaho’s antidegradation law that is projected to continue beyond the foreseeable future. For example, with regard to S. Creek, “concentrations would be greater than the threshold for all years 6+ scenarios for metals such as copper and cadmium at low flows and high flows under both idealized conditions. Years 6+ are projected to continue beyond the foreseeable future.” While the EIS states that discharges into Thompson Creek would “typically comply with all NPDES permit requirements,” modeling shows that “there could be occasional permit limit exceedances at these outfalls during spring runoff” (DEIS p. 4-68). As another example, the EIS states that Alternative M2 may lead to slight increases in concentrations of constituents in the Salmon River compared to Alternative M1 but would still meet WQSs but this increase in a Tier II stream would likely violate Idaho’s antidegradation regulations. Even though these effects may be relatively minor, they are anticipated to be long-term and reoccurring.

Response:

The predictions of future water quality and the analysis of permit requirements/antidegradation are provided in the EIS (Section 3.6 and Section 4.6). The only potential exceedance would be the concentration of copper under Alternative M2 and Alternative M3, and only under the most conservative upper estimate/7Q10 low flow condition (unusually low flow paired with the highest predicted loadings from the WRSFs). Such exceedances would not necessarily be violations of Idaho law or regulations (Section 4.6.1.1., Surface Water, S. Creek and Tributaries, Low-flow Conditions). In any case, TCMC would be required to do whatever is required to meet the eventual permit conditions.

WTR 12:

EPA’s antidegradation standards, which the BLM must ensure compliance with, requires that: “Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained” 40 CFR § 131.12 (a)(1). The agency has not ensured that all instream uses and water quality “shall be maintained.” The BLM needs to develop additional design features to ensure that all aspects of the project comply with State and Federal laws.

Response:

Future water quality was predicted with reasonable certainty using the best available science (e.g., Section 4.6.), and antidegradation analysis under the existing rules has built-in flexibility as to methods, conditions, and how compliance occurs. The EPA (or IDEQ should such regulatory authority be obtained by Idaho), when determining NPDES permit limits, would take into account the current 303(d) status of the receiving waters, the nature of the discharges (including their sediment and temperature characteristics), and mixing zones as appropriate, when setting such limits to ensure that all WQSs, including antidegradation rules, will be met. TCMC would have to comply with such NPDES permit limits.

WTR 13:

Studies analyzing fine sediment percentages at monitoring sites were based on the wrong set of standards and, perhaps while potentially comparable, still may underestimate sediment. While lower water flows result in elevated levels of metals, high water can be associated with elevated levels of sediment or selenium.

Response:

The comment is in regard to the percentage of surface fine sediment measured at the TCMC monitoring sites (measured as the percentage < 4.8 mm in diameter) in comparison to NMFS and USFWS guidelines (defined as the percentage < 6 mm in diameter). As described in the EIS, due to the nature of the estimates (e.g., visual), the estimates should be comparable (Section 3.8.1.3). However, it is possible the methodology (JBR 2014g) underestimates the percentage of sediment less than 6 mm in diameter. The EIS was revised to note this caveat (Section 3.8.1.3). However, given that the standard is for the percentage fines less than 6 mm to be below 20 percent, and percentages measured at the TCMC sites are typically less than 7 percent, it is unlikely that any error in methodology would be large enough to change the determination of PFC. Furthermore, although high water naturally has the ability to transport more sediment, long-term monitoring does not indicate large spikes in sediment or selenium during high water in Thompson Creek.

WTR 14:

It is critical for the BLM to assess No Name Creek and Redbird Creek, as some of these areas may be contaminated by mine affected water or historic mining issues. As stated in the EIS, sulfate concentrations in Redbird Creek have increased by a factor of three over the last 10+ years. The assumption that beneficial uses are being fully supported here because it is within the S. Creek drainage is clearly not warranted. This monitoring is also necessary to establish a baseline and to determine the streams' assimilative capacity, if any. It appears that only one sample has been taken of the discharge from the Twin Apex mine and that this discharge contained elevated metals concentrations. In order to understand the role that the Twin Apex mine plays in the larger system, additional water samples are necessary and at a variety of flow conditions.

Response:

The EIS utilized the baseline data that was available at the time the effects analysis was conducted. At that time, the effects analysis utilized the latest beneficial use status of the subject streams as indicated by the IDEQ. The effects to No Name Creek water quality are described in the EIS (Section 4.6.1.3). The additional monitoring of Redbird and Twin Apex streams is included as mitigation (Section 4.21).

WTR 15:

We are particularly concerned about current and future selenium levels in Buckskin Creek and believe that additional steps are needed to reduce selenium discharges at the source. We are also concerned that TCMC is proposing to reduce the overall thickness of the Buckskin cap in Alternative M2 compared to Alternative M1: "TCMC would save

\$1,000,000 of dollars by reclaiming the surface of the Buckskin WRSF with less soil cover than for Alternative M1.”

While there may be cost savings for reducing the cap thickness, this reduction may result in increased water infiltration, increased contaminants, and increased treatment costs. We disagree with IDEQ’s intent to place the stream assessment units in Category 4c, streams impaired by pollution, not pollutants. Relegating Buckskin Creek as a “permanently highly perturbed, flow-altered stream whose flow and water quality is a result of mine operations in compliance with the NPDES permit” belies the risk that a certain bioaccumulating pollutant – selenium - poses to the environment. We also oppose categorizing sediment in Pat Hughes Creek as pollution consistent with the NPDES permit rather than a pollutant which needs to be managed.

Response:

The water management plan (Lorax 2012a) indicates that for extra conservatism, the prediction of the amount of flow through the Buckskin WRSF upon Alternative M2 closure “...ignored the potentially beneficial effects of the cover design in reducing infiltration into the Buckskin waste rock facility.” As such, the predicted closure drainage flows are unchanged from those predicted for end of operations for Phase 7 and Phase 8. The statements regarding the commenter’s disagreement with the IDEQ stream assessment are noted. The BLM does not have regulatory authority over the Idaho program. The bypass of the Buckskin Creek unlined sediment pond in September 2011 has reduced the input of selenium to Thompson Creek and the cutoff wall should continue that trend (Lorax 2012b). The proposed cover for the Buckskin WRSF would only be thinner over Type I waste rock which is not potentially acid generating.

Over Type II waste rock, which is potentially acid generating, a 7.5 foot, three component cover would be used (Section 2.1.3.3). The IDEQ’s stated intent to revise the stream assessment units for Buckskin and Pat Hughes creeks between the waste rock facilities and the NPDES discharge points reflects the actual current conditions in these drainages. These streams are part of the mine drainage system and are under active management by the mine and have been for some years. This is unchanged from when the NPDES permits were issued. The concerns raised by the comment should be directed to the IDEQ for its response.

WTR 16:

The TSF currently leaks small but unquantified amounts of water into groundwater with small but unquantified effects on water quality. The EIS needs to provide additional information on the current and future trends and ways to address this as needed.

Response:

Monitoring of shallow wells MW1 and MW2 downstream of the tailings embankment shows increased levels of sulfate (median 146 mg/L and 89 mg/L respectively), indicating minor influence from the TSF (Section 3.6.1.2). Background sulfate is approximately 51 to 61 mg/L. This is considered an indicator of the effectiveness of current water management. Section 5.1.3 of the water management plan (Lorax 2012a) describes how the geochemistry of the impoundment prevents ARD by keeping the tailings saturated. Following closure, however, seepage from the impoundment will be reduced relative to seepage through the embankment,

which has been shown to have the potential for ARD and elevated metals. It is predicted that the current management practices for capturing seepage would continue to be effective post-closure. The adaptive groundwater management plan (Lorax 2012b) offers three mitigation contingencies in the event that “specified Performance Metrics” are exceeded. These include a slurry wall, a permeable reactive barrier, and additional pumping wells within the vicinity of the existing pump-back system. The EIS was revised to address adaptive management (Section 2.1.1.9).

WTR 17:

The DEIS is unclear with regard to how and where mine-affected water will be treated post-closure: “TCMC would either construct a long-term water treatment facility or modify the existing process water treatment plant.” Water treatment is one of the major unresolved issues related to this project and the outcome will affect the environment of the area beyond the foreseeable future. The details regarding water treatment will also determine the ultimate cost for long-term water treatment and the adequacy of the financial mechanism needed so that taxpayer dollars are not needed. It appears that both construction of a new long-term water treatment facility and the modification of the existing water treatment plant are viable options, but a more detailed analysis is needed with respect to cost, efficacy, long-term viability, maintenance, power needs, ease of repair, filter removal, pond mucking, waste disposal, treatment methods (passive vs. active), replacement schedule, upgrades, staffing needs, etc. It is not even clear what entity would maintain the TCM Access Bridge which may be necessary to replace or upgrade water treatment infrastructure into the future. Our primary concerns relate to the long-term protection of water quality. We want to ensure that the water treatment plant and related infrastructure are properly engineered.

Response:

Mine-affected water would be treated post-closure at water treatment facilities that would be maintained long term. The uncertainty described in the EIS refers to the fact that there is already an operating water treatment plant at the mill that could continue to be used or would be replaced by a similar treatment plant located elsewhere at the mine. It is not essential to the analysis to identify which plant it would be. Long-term water management is discussed in the EIS (Section 2.1.1.8). The feasibility of the treatment is not in question because the type of treatment that would be required is well within current technology and has already been demonstrated by the current treatment plant.

As part of the NEPA process the agencies evaluated the proposed water treatment (Section 2.1.3.6.) to ensure such would be technologically feasible, and to incorporate such into the effects analysis. TCMC would be required to submit the detailed designs of the water treatment facilities to the appropriate regulatory agencies that will administratively review and approve the designs as part of approving an MMPO for the mine. The facilities would be constructed on previously disturbed land, probably near the pit, but the detailed designs and exact locations of the relatively small facilities are administrative matters and not NEPA issues, i.e., would not affect the decision.

WTR 18:

In the environmental review of a proposed copper porphyry mine, the EPA highlights the

uncertainties associated with long term water treatment systems for mines, saying, “Seepage and leachate monitoring and collection systems, as well as the [wastewater treatment plan], might need to be maintained for hundreds to thousands of years. It is impossible to evaluate the success of such long-term collection and treatment systems for mines. No examples exist, because these timeframes exceed both existing systems and most human institutions” (USEPA [2014] An assessment of potential mining impacts on salmon ecosystems of Bristol Bay, Alaska. Region 10, Seattle, WA. EPA 910-R-14-001).

The EIS should evaluate the potential impacts from water treatment system failure, and provide alternatives that evaluate additional mitigation measures to ensure that contaminated water isn’t released in the event of a water treatment plant failure, and that financial assurance is in place to cover the full cost of these back-up systems, regular replacement of water treatment systems during post-closure, etc.

Response:

Future short-term and long-term water quality was predicted with reasonable certainty (e.g., Section 4.6.), and included both a best estimate (most likely) and upper estimate (highly conservative). Additional evaluation would not provide more certainty. The analysis is focused on reasonably foreseeable effects (those that are likely to occur or probable) rather than those which are merely possible. In addition, the EIS outlines relevant monitoring (Section 2.1.1.7., exposure to risk (Section 2.1.5.), mitigation (Section 4.21.), adaptive management (Section 2.1.1.9.), and regulations regarding financial guarantees in the context of long-term water management at the mine (Section 1.9.21). Please see also the responses to ALT 11, ALT 12, and WTR 34.

WTR 19:

In the event of a short-term halt to mining or suspension of production, “care and maintenance” procedures need to be spelled out for each alternative. This temporary suspension does not fit the category of daily operations or the category of reclamation and closure. Major pieces of infrastructure need to be retained and maintained for future start up, but daily procedures such as water use for milling and dust control may be discontinued. As such, the BLM needs to describe how water balance would be affected, how capture, treatment, and disposal of water would be affected, and what level of work force would be needed to assist in site management. Approximately 2,500 gallons per minute of water are currently used during operations but it is unclear what quantity would be used during “care and maintenance.” This “Twilight Zone” of mine management leaves many uncertainties that are best addressed in advance of the actual event. Because different alternatives may have different ways of managing water balance or treatment, care and maintenance procedures should be spelled out for each alternative.

Response:

All water management activities that would be needed to maintain water quality and comply with the NPDES permit would continue in the event of a short-term halt to mining or a suspension of production. In general, a suspension of mining and milling activities would significantly curtail the makeup water requirements for the operations and reduce the addition of this water to the

tailings facility. This would have a net positive effect on the overall management of the water balance.

WTR 20:

The BLM should review Comparison of Predicted and Actual Water Quality at Hardrock Mines (Kuipers, J.R., Maest, A.S., MacHardy, K.A., and Lawson, G. 2006) and EPA’s Technical Document on Acid Mine Drainage Prediction (USEPA (1994) EPA 530-R-94-036. <http://www.epa.gov/osw/nonhaz/industrial/special/mining/techdocs/amd.pdf>) as part of this analysis and specifically describe how these issues are currently being addressed and will be managed into the future through the different alternatives.

Response:

The EIS presents the affects to water quality from the mine determined with the best available science applied to the mine site (Section 4.6). That is, such analysis incorporates the most recent methods to evaluate ARD, but applied specifically to the mine site using decades of existing data for facilities with long-term operations at the mine.

WTR 21:

The DEIS states that the mine currently uses 2,500 gallons per minute for various mine operations. It is unclear how this volume of water is going to be handled post-closure. There are opportunities to redirect much of this flow around waste rock and tailings facilities into natural stream channels for improved fish habitat. However, the increased flows may pose additional challenges related to preventing seepage into waste rock and tailings facilities. The BLM needs to provide more information on how the pros and cons of post-closure water flows would be handled.

Response:

Up to 4.5 cfs (2,000 gpm) now withdrawn from the Salmon River mainly for makeup water in the milling circuit would no longer be withdrawn and would remain instream. Flows from upper Bruno Creek will be passed through to lower Bruno Creek post-closure, “...and would flow more consistently into lower Bruno Creek below the TSF embankment, increasing streamflow.” Also, groundwater currently withdrawn for potable and other mine uses would be no longer used and would remain in the system (Section 4.6.1). The reduction in industrial water consumption would be a net reduction in the amount of water in the system requiring management compared to normal operations.

WTR 22:

The BLM should incorporate additional measures related to water conservation. Upon final mine closure, water will no longer be needed for mine production and would be extremely beneficial if returned to the creeks to help restore fish habitat. Some of the potentially adverse environmental effects from metals are projected to occur during low water periods. In addition, increased water flows, particularly during summer, are expected to benefit listed fish species. TCMC should transfer its water rights from the beneficial uses of mining, domestic, industrial, irrigation, and any other stated beneficial use during TCMC’s use of the mine to the beneficial uses of fish habitat and/or minimum

stream flows. This will ensure that in-stream benefits are maintained over the long term and that some future development in the project area cannot claim this water. We appreciate the fact that Idaho has water rights for a portion of S. Creek for fish propagation and believe that all parties should pursue additional water rights for fish restoration. Should the BLM no longer need the water rights for stock watering in the project area, these should also be reassigned toward fish recovery. This transfer of water rights would also be consistent with TCMC's wetland and stream mitigation work and the purpose of the conservation easements along S. Creek and Thompson Creek. Because such a transfer will require advance coordination with the IDWR and the Idaho Water Resource Board, TCMC should initiate conversations with these entities as early as possible.

Response:

Please see also the response to comment WTR 21. A reduction in water use at the mine and milling operations would automatically result in the unused water remaining in the natural systems. The transfer, change in beneficial use, or reassignment of water rights, either those held by TCMC or the BLM, is outside of the scope of the EIS. No such transfers are currently proposed, so conversations with IDWR and IWRB on that subject are not currently relevant.

WTR 23:

High rates of snowmelt appear to initiate acid generation with the Pat Hughes WRSF: "The year 2003 is considered to be the onset of perennial ARD conditions from the Pat Hughes WRSF" (DEIS p. 85). Water may be leaking from the Pat Hughes sedimentation pond into the groundwater. Of added concern is the apparent high permeability of the bedrock, allowing for mixing between shallow and intermediate groundwater flows. Furthermore, it appears that "some seepage from the Pat Hughes WRSF passes under the collection system and eventually reaches Thompson Creek, but apparently with no discernible effect of the water quality of Thompson Creek" (DEIS p. 3-79). Depending on the amount of water, the degree of contaminants, and where this water surfaces, this could represent a violation of Idaho's antidegradation laws. Furthermore, the total load of COCs is expected to increase under Alternative M3.

Additional information is needed on both the current and potential future seepage rates and the quality of the groundwater. In addition to the three groundwater cutoff walls, additional groundwater monitoring, capture, and pumpback wells should also added to prevent and/or capture seepage below the Pat Hughes WRSF.

Response:

It is correct that infiltration through the waste rock generates ARD, which is why the mine will install the cutoff walls, which has been determined to be the most effective way to capture the ARD for treatment and disposal. Table 3.6-18, which is cited for hydraulic conductivity through the several geologic formations, does not show a K value for volcanic rock, which is what Cutoff Wall #1 would be keyed into, and which has a K value approximately an order of magnitude lower than the metasedimentary rock (8.24×10^{-7} feet/second, Table 4.2-11, Lorax 2012a). This information was added to the EIS (Table 3.6-18).

Under the agency-preferred alternative (Alternative M2) the sediment pond would be removed and covered by non-acid generating rock as part of the advancing front of the facility. With the cutoff walls in place, the amount of mine-influenced water escaping the management facilities reaches the goals of meeting anti-degradation and NPDES standards where appropriate, as estimated using conservative assumptions (Section 4.6). The adaptive groundwater management plan (Lorax 2012b) recommends increased monitoring following operations as well as the goals of the monitoring program, which include: “To manage the risk of unanticipated groundwater conditions.” Should additional management be required to maintain or improve water quality, management contingencies for Pat Hughes, in addition to the underdrain system and cutoff walls, “may include the placement of either of the following within the vicinity of the cutoff walls: a slurry wall, a permeable reactive barrier, or pumping wells.”

WTR 24:

In Buckskin Creek the groundwater flow patterns appear to serve as a hydraulic trap, but what is the possibility for the groundwater flow rates to change into the future? The Buckskin WRSF does have the potential for acid mine generation at some point in the future and warrants more monitoring than proposed. Adequate groundwater monitoring, capture, and pumpback wells should also be considered to capture seepage below the Buckskin WRSF. Additional groundwater monitoring is needed, particularly at springs that occur on the site and at different times of the year.

Response:

Groundwater flow rates will continue to fluctuate seasonally and interannually. The best estimates of average flow are presented in the EIS (Section 3.6). The interannual flows from the Buckskin drainage are also presented in the EIS (Table 2.2-8. of the water management plan, Lorax 2012a). The adaptive groundwater management plan (Lorax 2012b) recommends increased monitoring following operations as well as the goals of the monitoring program, which include “To manage the risk of unanticipated groundwater conditions.” Should additional management be required to maintain or improve water quality, management contingencies for Buckskin, in addition to the underdrain system and cutoff wall, would include “installation of a slurry wall or permeable reactive barrier; or installation of a secondary collection system at the base of the Buckskin drainage in the vicinity of station BUCK.”

WTR 25:

There is additional water quality monitoring sites at Redbird and Bruno Creeks proposed. Given the interesting hydrological connection between the TSF and Redbird Creek, a groundwater monitoring well and pumpback station may be warranted where the active groundwater flow zone intercepts the high groundwater flow zone.

Response:

The adaptive groundwater management plan (Lorax 2012b) states “Contingency mitigation would be considered should breakthrough of metals be observed. Options for this mitigation may include seepage collection, diversion, and treatment; permeable reactive barrier; and/or pumping wells in the vicinity of the left abutment.”

WTR 26:

Additional information is needed regarding the parameters of the mixing zones and how NPDES conditions will be met. The required Salmon River mixing zone ratio for NPDES Outfall 005 may not be met during certain low flow periods, in violation of the NPDES permit. Although the EIS states that “isolated instances of instream water quality exceeding a numeric WQS, in and of themselves, may not be considered a violation of State law” (DEIS p. 4-42), the information presented in the EIS demonstrates a consistent pattern of predicted violations of Idaho’s antidegradation law that is projected to continue beyond the foreseeable future.

Response:

The IDEQ has the responsibility and authority for setting NPDES conditions. Mixing zone determinations are part of that process, and the current (administratively extended NPDES permit) conditions and the basis for them will be different from what the future analysis will entail. The IDEQ has chosen not to speculate on the future mixing analysis or future permit conditions. The EIS analyzed two scenarios for Alternative M1 and Alternative M2. They are only examples of future water quality under those very specific conditions. TCMC has committed to do whatever needs to be done to ensure that they meet whatever NPDES permit terms are eventually established.

WTR 27:

What are the proposed points of compliance for the Idaho groundwater quality rule? Points of compliance should be on the near side of streams and valleys and as close to the boundary of the mine as practicable. Throughout the document are multiple examples of where predicted maximum concentrations of COCs results in exceedances of Idaho groundwater standards. In some areas, groundwater flows reach 20+ feet per day with the result that contaminated groundwater will likely leave the project area in violation of the Idaho groundwater regulations for mining.

Response:

Estimated maximum concentrations are based on assumptions that are very conservative. In other words, they represent the upper extreme of a sensitivity analysis and, as such, represent conditions that are not expected to occur. That said, they give mine engineers a target condition for which they can design mitigation contingencies. Points of compliance for the Idaho groundwater rules are developed in conjunction with the IDEQ and are not part of this NEPA analysis. They allow mining operations to meet groundwater WQSs outside the mine area rather than directly under it.

WTR 28:

The DEIS states that the water management system would be decommissioned in phases but does not describe the sequence of events or how the Buckskin and Pat Hughes sedimentation ponds may be handled.

Response:

As stated in Chapter 2 “The fate of the Buckskin and Pat Hughes sedimentation ponds would be decided based on water quality monitoring/effectiveness of the groundwater cutoff walls.” Thus, these details will be determined later, in the reclamation plan that will need additional approvals from the BLM and IDL.

WTR 29:

Under Alternative M2 it will take approximately 30 years post-closure for the pit lake to rise to the maximum allowable level. We are concerned about the exposure of acid-generating materials in the pit wall for this duration of time (30 years for Phase 7 and 70 years for Phase 8). In addition, significant portions of the pit wall would remain above high water permanently. The EIS notes that long-term weathering of the pit slope would continue above the water level. We are also concerned about the new exposure of material from slumping during this time. The BLM should examine if there is a way to accelerate the filling of the pit if this would reduce the probability of acid formation. The BLM should also describe the final depth of the pit lake, what type of seasonal stratification is expected, and how this may affect the chemistry of the water. It is also unclear how the increasing water pressure in the rising pit lake will affect groundwater flows and groundwater quality. We are concerned that there appears to be substantial groundwater movement between rock formations. The EIS points out that pit water may eventually flow into Buckskin Creek, Pat Hughes Creek, or Thompson Creek. We believe additional studies are warranted and that monitoring wells and points of compliance should be selected to further study this.

Response:

As described in the water resources technical report prepared for the EIS (JBR 2014g), a detailed model of the pit lake was developed, which takes into account accelerated filling in the early years. In addition to projecting the pit fill rate, the evolution of pit lake water quality has been predicted. The water quality in the pit as it fills would be the cumulative water quality from all sources, modified by lime treatment of the waste rock facility seepages, the interactions of those waters among themselves and with the rock exposed in the pit. The references provided in JBR (2014g) provide a detailed discussion of the eventual water quality of each of those sources and how they were derived. Furthermore, the effect of stratification on water quality was considered and pit lake chemistry at the surface, at depth, and fully mixed was considered. Lastly, the EIS discloses that the final pit lake surface elevation would be 7,030 feet (Section 4.6) and that the final pit bottom would be at an elevation of 6,350 feet. By subtraction, this maximum lake depth would be 680 feet.

All modeling performed on the pit lake (Groundwater Flux Estimates; Approach and Methodology, Appendix B in Lorax 2012a) indicates that the lake would be either a groundwater sink (i.e., groundwater would move into the pit and not out of it), or groundwater from the lake would flow into the Buckskin drainage where it would be captured by the water management facilities. The proposed mitigation and contingencies included in the adaptive groundwater management plan (Lorax 2012b) include groundwater monitoring for both water quality and groundwater flow gradients into and out of the pit. The contingency measures include

maintaining a lower pit lake maximum elevation to increase flow gradients into the pit; installation of a slurry cutoff wall along the pit highwall; or installation and operation of dewatering wells along the pit wall periphery.

WTR 30:

The EIS must demonstrate that the pit lake will meet water quality standards in perpetuity, and what mitigation measures will be taken if water quality in the lake does not meet standards.

Response:

The pit will operate as a wastewater storage facility and therefore does not need to meet WQs. Any water discharged from the pit to the Salmon River would be treated as described in the EIS so that NPDES permit limits are met.

WTR 31:

One stated difference between Alternatives M1 and M2 is that some monitoring could continue for longer durations. While the exact monitoring locations and points of compliance may differ between alternatives, water treatment in perpetuity is going to be needed under all alternatives so long-term monitoring will also need to be conducted in perpetuity. The EIS should be revised to reflect this.

Response:

This is correct. The EIS has been revised to reflect this.

WTR 32:

The EIS states that the Buckskin sedimentation pond currently leaks and will be lined in the future. It is unclear when this renovation will happen, what type of liner will be used, and what type of monitoring system will be in place to assess the effectiveness of the liner. TCMC should line the pond as a required component before the project proceeds. The BLM should require a monitoring, capture, and pump back system in the event of a leak.

Response:

It will not be lined. The decision not to line the pond was made because when the cutoff wall is installed affected flow water would be piped around the pond. There is no monitoring of leakage from the ponds and no plans to monitor, as all mine affected water would not be routed through the ponds but rather be put into the Thompson Creek pipeline and pumped to the mill for makeup water use or, following closure, to the pit (Doughty 2014).

WTR 33:

It is accepted practice for Federal and State land management agencies to impose mitigation and other measures to prevent the formation of a contaminated pit lake, or if the lake is predicted to form, to require mitigation to prevent any contamination. The BLM, for example, requires the completion of a detailed Ecological Risk Analysis for all pit lakes. When the BLM is preparing a NEPA analysis and it is predicted there is potential water

quality problem with the future pit lake, an Ecological Risk Analysis should also be prepared.

Response:

The effects of the pit lake are evaluated by a variety of technical studies and reports using the best available science and summarized in the EIS (e.g., Section 4.7.1. and Section 4.8.1) sufficient for an informed decision to be made regarding the MMPO alternatives. The effects of the pit lake in the EIS summarize the results of ecological risk assessment, but the last sentence in the comment is from guidance specific to only the BLM in Nevada. Regardless, the BLM decision maker is aware of the Nevada BLM guidance and believes the ecological risk assessment in the EIS is sufficient.

WTR 34

The EIS should disclose the failure rate of mine water mitigation, and how those failures will be addressed. Given the record of seepage collection and treatment failures at other operating porphyry mines in the US, the EIS should fully evaluate the potential effects to the resource from this failure mode, and mitigation measures should be incorporated into the project and reflected in the financial assurance.

Response:

The water management associated with the MMPO alternatives is not mitigation, but part of the proposed operations. The water resources analysis uses the best available science to provide a site-specific analysis of both the “best estimate” and “upper estimate” (most conservative) of water quality effects of the MMPO alternatives, rather than an empirical analysis from other types of mines. NEPA analysis must analyze the effects that are reasonably foreseeable. The permanent failure of the water management facilities is not reasonably foreseeable; the temporary failure of the water treatment facilities prior to final treatment would have no meaningful effects on the environment due to the storage capacity of the open pit; and the risks of the temporary failure of the water collection facilities or the temporary failure of the final water treatment facility (but upon identifying any problems the facility could be shut-down without release of untreated water due to the storage capacity of the open pit) are noted in the EIS (Section 2.1.5). Financial guarantees are discussed in the EIS (Section 7.2.14). Please see also the responses to ALT 11, ALT 12, and WTR 18.

WTR 35:

Ongoing pollution from these and other mines in the CESA is a concern. Additional information is needed regarding the current, potential, and cumulative effects of metals contamination, particularly during low water events. The cumulative effects analysis should disclose monitoring results, any development or clean up plans for these sites and what water quality improvements may be seen. The EIS should clarify whether there is a NPDES permit for these discharges and who the responsible parties are.

Response:

The mine with the greatest potential to affect water resources in the CESA after the TCM – the Twin Apex Mine which discharges water from an underground sulfide ore body with moderate

production – is identified in the cumulative effects analysis. However, the Twin Apex Mine is on private property and the BLM is not aware of water quality data for the site. The Tungsten Jim Mine and Mill Sites are also identified in the cumulative effects analysis, but the BLM is not aware of water quality data demonstrating any meaningful effects to water resources from these sites. Regardless, the sites may be remediated to eliminate the potential of future effects to Thompson Creek. The BLM is not aware of water quality data from any of the other abandoned mine site in the CESA. In any case, the water monitoring from background sites at the TCM demonstrates that the cumulative effects of natural weathering, all of the mines in the CESA, and all other actions do not produce metal concentrations above the State WQSs. The only mine with an individual NPDES permit in the CESA is the TCM, but the details of valid NPDES permits are administrative matters and not NEPA issues.

WTR 36:

The water resources cumulative effects analysis should include TCMC’s Bruno Creek Exploration project.

Response:

TCMC has drilled more than 100,000 boreholes at the mine site since the 1960s with no known meaningful effect to groundwater. There would be no meaningful effect to groundwater from the Bruno Creek exploration drilling because of the benign materials in the boreholes (e.g., clay and water) and because the boreholes must be sealed to prevent aquifer contamination per IDAPA 37.03.09. The effects (minimal to none) of the exploration drilling were fully evaluated in the Bruno Creek Mineral Exploration Project Environmental Assessment (2013) and supporting documents.

7.2.8. Wildlife Resources (WLF)

WLF 1:

Wildlife in the area is habituated to the noise and activity at the mine.

Response:

Wildlife consistently uses the lands immediately adjacent to mining facilities (Section 3.8).

WLF 2:

The DEIS states that biological surveys for active bird nests and avoidance plans would be developed before these areas are disturbed. However, the purpose of NEPA is to disclose and address impacts to the public before a decision is reached. As such, we are concerned that this represents a NEPA violation and recommend that the BLM commence these surveys in advance of finalizing the ROD.

Response:

Avoidance plans are most effectively done at the time of construction and not before, because they are specific to each nest and nest locations change with each nesting season. The effects analysis regarding migratory birds is not based on the number of nests found or the particular species present, but the fact that any nests found will be avoided to the most practicable extent.

The effects analysis regarding migratory birds is based on the highly likely scenario that all nests found prior to construction would be successfully avoided. Environmental controls related to avoidance planning were added to the FEIS (Section 2.1.3.5). However, some direct, residual effects to nesting birds while avoidance plans are in place may occur within the construction zone and these were not clearly stated in the DEIS. These effects were added to the FEIS (Section 4.7.1.1). Note that these effects would not differ under the action alternatives and will not likely change the overall analysis for migratory birds.

WLF 3:

Regarding the WRSFs and TSF, we recommend adding clusters of logs and/or rocks to serve as habitat for pikas and other animals. Pikas are a Forest Service sensitive species. This technique has been used with some success in phosphate mine reclamation.

Response:

WRSFs provide suitable pika habitat as they exist (and accumulate) and supplementation of these areas with more rocks or logs would be unnecessary. WRSFs that currently provide pika habitat (and are occupied by pikas) will remain in place until mining ceases, at which point they will be covered and will no longer provide suitable habitat. Suitable pika habitat over the long term may be provided by reclamation of rocky slope areas (Section 4.7.1.2). The overall goal of the reclamation plan is to reclaim the mine site to support wildlife habitats similar to those which occur adjacent to the site. The TSF does not currently provide pika habitat (i.e., suitable rock piles or scree) and in light of pika use of the WRSFs and planned reclamation targets for rocky slope areas, the tailings facility is not a practical focus of pika habitat supplementation efforts.

WLF 4:

The power line (both retained and relocated segments) should be inspected to ensure that there is no risk of electrocution to raptors and modified if needed.

Response:

The existing power lines at the mine do not appear to be posing a threat to raptors. The most recent Avian Power Line Interaction Committee guidelines state that existing structures should be modified when 1) dead or injured protected birds are found, 2) where high-risk power lines are identified, or 3) concerns of legal compliance are at issue. The current power line designs and new construction plans will be reviewed to ensure the distance between conductors is more than the wingspan or height of a typical raptor at the mine and that hardware or equipment cases are not in close proximity to energized equipment (APLIC 2005).

WLF 5:

We are concerned about impacts to wildlife from exposure to contaminated water sources after mining operations have ceased. Mine operations need to be designed to prevent water contamination and to have a contingency plan to treat water in perpetuity after mine closure. There should be a full evaluation of the pit lake water. The current alternatives do not address this issue. The BLM needs to describe what mitigation measures will be used to ensure that birds and wildlife are protected if the water quality does not meet predictions.

Response:

None of the maximum concentrations of constituents in contaminated waters predicted over the long term exceed the screening concentrations for birds or mammals (which include bioaccumulation factors; Table 4.7-1). Furthermore, wildlife are not expected to use the WRSFs, TSF, SRD ponds, or the pit lake regularly for drinking water due to the presence of several natural water sources (i.e., streams and river) around the mine. The pit will operate as a wastewater storage facility and does not need to meet WQSs. A detailed model of the pit lake that includes the prediction of pit lake water quality from each input source and how the predictions were derived was prepared for the project as summarized in JBR (2014g) which references the supporting documents which are also in the administrative record for the project. Future short-term and long-term water quality was predicted with reasonable certainty in the EIS (Section 4.6). Mitigation (Section 4.21) and adaptive management (Section 2.1.1.9) are described in the EIS.

WLF 6:

Mammals could fall into the pit and become trapped. Benches and (decompacted) haul roads should be retained to serve as exits. Eventually, pit wall sloughing and mass wasting will likely convert the benches and haul roads into talus slopes, but these will still be usable as egress points. The BLM needs to weigh in the risks of these egress points promoting access to contaminated waters.

Response:

Under current plans, benches will be retained for wildlife to exit the pit lake. Use of the pit lake by wildlife, however, is not expected to be more than occasional (Section 4.7.1). The BLM and TCMC will weigh the costs and benefits of establishing additional egress points for wildlife if use of the pit lake would occur more frequently than expected.

WLF 7:

The BLM should examine the effects of both fencing and not fencing this pit and what type of fencing should be most appropriate. Fencing should be a similar design to fences used to divert elk and deer around roadways. These fences have one-way ramps placed every few hundred yards which enable big game to climb up the ramp but discourage animals from going the other direction. Such a design could be helpful around the pit to discourage animals from entering the area but allowing egress if needed.

Response:

No fence is planned to be installed around the open pit. Controlled access to the pit, including signage, is planned for the benefit of human visitors, as wildlife use of the pit is not expected to be more than occasional (Section 4.7.1). The BLM and TCMC will address the costs and benefits of additional access control and egress measures if wildlife use of the pit lake occurs more frequently than expected.

WLF 8:

The EIS must demonstrate that the mine would comply with the MBTA (requiring protection of migratory birds).

Response:

Future short-term and long-term water quality was predicted with reasonable certainty in the EIS (Section 4.6). None of the maximum concentrations of constituents in contaminated waters predicted over the long term exceed the screening concentrations for birds (which include bioaccumulation factors (Table 4.7-1). Mitigation (Section 4.21) and adaptive management (Section 2.1.1.9) are described in the EIS, which are in place to ensure compliance with the MBTA and BGEPA should the conditions in the future deviate from predictions.

7.2.9. Fish and Aquatic Resources (FISH)

FISH 1:

Even when selenium WQS standards are met, bioaccumulation with the potential to affect listed fish species can occur, in potential violation of the ESA.

Response:

The WQSs are established to be protective considering even bioaccumulation (IDAPA 58.01.02.275) because some elements such as selenium may bioaccumulate (Section 3.8.1.3). The EPA has proposed a criterion for selenium in fish tissue. The concentration of selenium in fish in Thompson Creek in some cases could be near the proposed criterion. However, there is scientific research indicating the concentration of selenium for the proposed EPA criterion is too low. In any case, biological monitoring for Thompson Creek indicates macroinvertebrate organisms, sculpin, and trout populations have not declined due to the mine (Section 3.8.1.3). For example, the highest concentrations of selenium in stream sediment occur at a reference station unaffected by the mine. Furthermore, using the Thompson Creek monitoring data, the NMFS's Biological Opinion for Idaho Water Quality Standards for Toxic Substances proposes a low-risk concentration of selenium in water (concentration with a sufficiently low risk of effects) of 2 µg/L (NMFS Consultation Number 2000-1484).

At concentrations below 2 µg/L, selenium bioaccumulation should not cause effects. At concentrations above 2 µg/L, fish tissue monitoring would be needed to determine if selenium is bioaccumulating to greater than tissue-residue concentrations of concern. Projected concentrations of selenium in Thompson Creek would be 2.0 µg/L for both the best and under the upper estimates. Because the concentrations of selenium are not predicted to increase relative to those during the selenium bioaccumulation studies, or be above proposed low-risk concentrations, the effects of selenium on ESA-listed fish populations would not be expected to result in adverse effects to listed fish or their designated critical habitat.

FISH 2:

The cumulative effects analysis points out that WQSs for metals in Thompson Creek and S. Creek would be exceeded during lowest streamflows in upper estimate scenarios. If low streamflows and high temperatures are some of the limiting factors for fish in these areas, during periods of low flow and high temperatures, fish would also be subject to elevated metal concentrations. Fish populations in Thompson Creek, S. Creek, Bruno Creek, and the Salmon River would likely be affected at the same time. Because these tributaries also serve as the best available thermal refuge for bull trout, Chinook salmon and Snake River

steelhead in the Salmon River, negative effects of increased metals could affect more than resident fish of these tributaries. While the EIS states that effects could result in short-term decreases in population sizes, steelhead, Chinook salmon, and bull trout are listed fish species. As such, the BLM additional design features or alternatives are needed to control pollutants at both high and low flow regimes to ensure that fish populations are protected.

Response:

The concentrations of metals for the highly conservative upper estimate would not be expected to occur (Section 4.6). The concentrations were provided to fully disclose the risks to water resources, rather than present only the reasonably foreseeable effects of the best estimate scenario. In the case of the upper estimate, the elevated concentrations of certain metals would occur during periods of low flow and high temperature, and could affect not only fish in the affected tributaries, but fish in the Salmon River seeking thermal refuge at the mouths of these tributaries. The EIS was revised to include a discussion of these potential effects (Section 4.8.1.), as well as a discussion of adaptive management strategies to address certain problems that might arise in the future (Section 2.1.1.9).

FISH 3:

A population of westslope cutthroat trout in Upper Bruno Creek that was isolated by the TSF was recently extirpated. There is value in reestablishing and maintaining a fish population in this isolated waterway. Bruno Creek will be engineered to flow across the surface or along the side of the reclaimed tailings facility. We recommend designing the reclamation and closure plan so that fish habitat is restored across the surface or along the side of the tailings storage facility. It is important to keep surface water from infiltrating the tailings facility so some form of liner will be required. Actually reestablishing fish would likely entail engineering a riverbed capable of supporting macroinvertebrates, providing in-stream structures for fish habitat, placing sufficient growth media to support riparian vegetation without compromising the tailings cap, planting riparian vegetation for shade, and transferring native westslope cutthroat trout from lower Bruno or S. Creek into this upper drainage. Reconnecting fish passage across the face of the tailings facility may be challenging but is still worth investigating. It is unclear whether the reclaimed tailings facility will have any discharge to middle or lower Bruno Creek, which could affect the quality of the water for fish. Reestablishing a fish population in an isolated area is an insurance policy in the event that a stochastic event wipes out a nearby population. The isolated population can then be used to repopulate the extirpated area. Using native fish species with a unique genetics that evolved with this particular environment is important. In addition, successfully reestablishing a fish population in Upper Bruno Creek and around the tailings facility would be groundbreaking from a mine reclamation perspective and a conservation biology perspective. Aquatic insects, amphibians, birds, and mammals would also benefit from the improved habitat.

Response:

Seepage from the reclaimed tailings facility is not intended to discharge to middle or lower Bruno Creek, rather any seepage from the embankment is to be captured at the SRD and pumped to the pit (later treated and discharged to the Salmon River). Only under the conservative upper estimates for water quality is it assumed that some portion of embankment seepage would enter

Bruno Creek (currently all seepage is captured at the SRD and pumped back to the mill) (Section 4.6).

Regarding reestablishment of westslope cutthroat trout in upper Bruno Creek and within the engineered channel on top of the tailings storage facility, although it is a worthwhile goal and would benefit multiple species, there are limitations on designing a channel suitable for the purpose. The IDWR has dam safety statutory mandates (IC 42.1709-1721) that would apply to this action:

1. Primary importance is to ensure the structure is placed in a safe maintenance-free condition.
2. Once the statutory requirement has been met that would place the structure in a safe maintenance-free condition, additional options may be considered that would assist in developing/promoting fish habitat.
3. All water-conveying channels must be hardened to prevent long-term erosion of the base materials and introduction of water into the underlying mass of tailings.
4. Although topped with relatively impermeable and erosion resistant materials, routing a non-hardened perennial stream channel across the surface may negatively influence the future safe and maintenance-free performance of the tailings dam, and thus is not advised.
5. Consideration may be given to using the top surface of the capped impoundment to temporarily detain runoff to assist with preventing high velocity/peak flow in the channel; however, permanent storage of water on top of the reclaimed surface is not advised.
6. Promoting the growth of woody-type vegetation (trees and brush) on the reclaimed surface is not advised unless the potential for introducing water into the underlying tailings via root systems has been fully mitigated.

From a habitat standpoint, the hardening and/or lining of the channel will limit the opportunity to develop and/or maintain riffle-pool sequences with full aquatic life potential, as the hardening will interfere with the hyporheic flow³ found in natural channels and which support benthic invertebrates as well as trout spawning. Furthermore, the habitat would be limited by the lack of riparian vegetation per restrictions on woody vegetation. Regardless, the engineered channel will meander across the surface at a grade of between 1 to 2 percent (i.e., the channel would not be a straight/high velocity channel) and once grasses used in reclamation establish, the grasses may provide some cover for fish. As a result, although designing the channel specifically for fish is not feasible, the current designs do not preclude the use by fish of the reach should the agencies decide to have fish established in the habitat above the TSF. Regarding fish passage across the TSF, the cost for constructing fish passage over a 700 foot obstacle with no guarantees the passage would be used by fish would be inordinately high.

³ The shallow groundwater and surface water that mix beneath and alongside a stream bed.

7.2.10. Wetlands, Floodplains, and Riparian Areas (WET)

WET 1:

With the expansion of the tailings storage facility, we are concerned about the loss of wetlands, floodplains, riparian and fish habitat in Bruno Creek both upstream and downstream of the tailings dam. This action entails dumping potentially toxic waste material into WUS and this is inconsistent with the CWA. If Bruno Creek or other waterways are not meeting beneficial uses, the disposal of any pollutants (including sediment) in these waterways needs to be consistent with any established TMDLs or alternate sources of disposal need to be identified.

Response:

The expansion of the TSF would incrementally affect the upstream aquatic resources and these effects are discussed in the EIS. The direct effects of the tailings embankment downstream of the TSF would be contained within the existing water management facilities and would not cause toxic waste to enter Bruno Creek. There would be a loss of wetlands and stream channel under the MMPO action alternatives (Section 4.9.), and mitigation for these effects is required by the USACE and in accordance with the CWA (Section 4.21.4).

WET 2:

A 1:4 mitigation ratio for effects to headwater streams does not appear to comply with the Final Mitigation Rule, which states: “The amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. In cases where appropriate functional assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or conditional assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratio must be used.” S. Creek may serve as an appropriate location for permittee-responsible mitigation; however, it remains unclear how stream bank fencing and stabilization in livestock areas correlate to lost aquatic resource functions at the mine site.

Response:

The USACE believes that the proposed mitigation for wetlands and stream channels is adequate. The USACE believes the S. Creek mitigation covers the effects to lost wetland and stream channel functions initially and when reclamation of Bruno Creek occurs at the end of mine life the stream replacement will be adequate. The USACE will continue to work with the EPA through the permitting process.

7.2.11. Air Quality, Noise, and Climate Change (ANC)

ANC 1:

TCMC uses best available technologies to reduce impacts from dust at the mine site.

Response:

Comment noted. Current air quality and dust emissions at the mine are presented in Section 3.10.3.2.

ANC 2:

A wind fence has been constructed around the coarse ore stockpile. We are concerned that the dust from this and other areas may contain contaminants of concern. The EIS should address this issue.

Response:

The dust from the crushed ore is fine granitic rock with no contaminants of concern, the same as the dust from all other areas of the mine. For example, molybdenum has extremely low toxicity to animals and humans, and is an essential dietary nutrient for humans (e.g., JBR 2014p). However, the concentrations of dust at the mine site are regulated by the MSHA to protect mine workers from physical hazards. The wind fence was constructed not for environmental reasons, but rather 1) to save money as some of the dust that escapes from the stockpile contains product that would otherwise be recovered by the mill, and 2) to minimize power outages that the dust was causing to a nearby power substation.

ANC 3:

Regarding noise pollution, the EIS is an excellent opportunity for the BLM and TCMC to discuss potential measures to reduce noise pollution on a daily or seasonal basis.

Response:

The amount of noise from the mine would not vary among the MMPO alternatives, except for the duration of the effects, and the noise levels meet MSHA requirements for worker safety. The effects of noise away from the mine would be negligible (Section 4.10.1).

ANC 4:

The BLM must work with TCMC to further minimize air pollution risks.

Response:

The air quality analyses in the supporting studies, and as summarized in the EIS, indicate no effects to air quality. The air emissions from the mine are permitted by the IDEQ and the mine has demonstrated compliance with and must continue to be in compliance with the terms of the permit. No reasonable methods to meaningfully reduce the effects to air quality were identified during internal or external scoping, the supporting scientific studies, or the public comment period for the DEIS. Regardless, TCMC will continue to work to reduce the effects from the mine to air quality as feasible methods are identified in the future. The air quality permit for the mine is the jurisdiction of the IDEQ and not any of the Federal lead or cooperating agencies.

ANC 5:

The BLM and TCMC should also examine whether there are ways to further improve the energy efficiencies on site.

Response:

The issue of energy efficiency was not identified during internal or external scoping, and no reasonable alternatives with material effects to energy efficiency were identified through internal and external scoping (JBR 2011), the supporting scientific studies, or the public comment period for the DEIS (Section 7.2.2., Appendix E).

ANC 6:

We are concerned about dust generation from the tailings storage facility and ask for more information on the public health risks and how this will be addressed.

Response:

The effects of fugitive dust from the mine are described in the EIS (Section 3.10. and Section 4.10.), and would continue to be below MSHA health standards for workers at the mine and below all air criteria pollutant standards (i.e., the standards for PM_{2.5} and PM₁₀) for the mine locality.

ANC 7:

The BLM should review the latest climate change models to see how temperatures, precipitation amounts, timing, and form may change over time. The water balance for the project, water quality, water quantity, evaporation rates from the pit lake, anticipated performance of the water treatment plant, and impacts on fisheries are dependent on these inputs. We suggest reviewing these calculations based on these climate change models.

Response:

Computer simulations of climate models were fully evaluated in the NEPA process (JBR 2014j).

7.2.12. Visual (Aesthetic) Resources (VIS)

VIS 1:

We appreciate the potential use of feathering of vegetation during reclamation and natural staining of exposed minerals to better protect visual resources. These components should be required in the reclamation plan. Scattered clumps of vegetation should also be planted along the faces of the TSF and WRSF faces where compatible with engineering designs.

Response:

Natural staining will occur by default, and “feathering” is part of the approved reclamation plan. The surfaces of the WRSFs and TSF, except where covered with coarse durable material for stability concerns, must be revegetated to a greater percentage of cover than scattered clumps of vegetation per IDAPA 20.03.02.140.11.b.

VIS 2:

Where external waste rock pits will remain, they should be recontoured with some degree of irregularity so that they blend into the surrounding environment.

Response:

The margins of the WRSFs would be feathered to blend with adjacent topography, except for the toe of the Buckskin WRSF which must remain at the angle of repose for safety reasons. However, the talus slope of the toe blends very well at the landscape scale as talus slopes are abundant in the locality.

VIS 2:

Although lights are needed for safety during mine operations, the BLM and TCMC should utilize this opportunity to see if there are ways to minimize light pollution without compromising site safety. The lights from the mine are highly visible from the White Cloud Mountains. Efforts might include additional shielding, redirecting lights downward, upgrading the types of lighting used, replacing sodium vapor lights with acceptable alternatives, and simply turning off lights when not in use. The long-term, post-closure plan for the site should be consistent with Dark Sky principles. This site represents one of the few places in the world where light pollution can be expected to decrease over time. The proximity of the Frank Church River of No Return Wilderness Area would make this entire area more intact and significant as a Dark Sky Resource.

Response:

Most of the lights at the mine must be left on at all times for safety. Where practicable, TCMC utilizes strategies to reduce light pollution. However, there are minimal receptors in the White Cloud Mountains at night. The MMPO alternatives would not increase light pollution associated with the mine, but the current light pollution would continue for an additional approximately 9 years under the MMPO action alternatives. After core reclamation the light pollution at the mine would be negligible (Section 3.11.2., Section 4.11.1., and JBR 2014k).

7.2.13. Land Use and Recreation (LUR)

LUR 1:

I want to see motorized boating allowed on the pit lake once it is filled with water.

Response:

The open pit would gradually fill with water (Section 2.1.1.8). Allowing motorized boating is not an option that would be considered due to safety concerns and lack of public access to the pit.

7.2.14. Socioeconomic Factors (SOC)

SOC 1:

The BLM should approve the MMPO due to TCMC's importance to socioeconomics including: personal employment, local/regional employment/economy, the Idaho economy, US economy, community benefits, financial benefits, good pay and benefits, high salaries, possible displacement of families and businesses, the mining industry, the vendors of the mine, local businesses, US competition in global marketplace, US jobs, foreign dependency, and TCMC's support of events, projects, organizations, and local communities.

Response:

Local and regional socioeconomic conditions are described in Section 3.13, including TCMC's contribution to the local and regional economy. A discussion of molybdenum economics specifically and TCMC's position in the US and global molybdenum market is provided in Section 3.13.1. The effects of the MMPO action alternatives would not change the current socioeconomic conditions but would extend these conditions for another 9 years (Section 4.13). However, the EIS was revised to state the community outreach and charitable contribution efforts of TCMC and its employees (Section 3.13.2).

SOC 2:

I support TCMC because they are an asset to the public, Custer County, employees and their families, Idaho suppliers, community groups, schools, organizations, and the worldwide economy.

Response:

Please see response to SOC 1.

SOC 3:

The TCM is a vital part of my own life and affects me and my family directly.

Response:

Please see response to SOC 1.

SOC 4:

I support the TCM because it is a vital part of the economy in central Idaho. Extending the life of the mine is good for our communities, our economy and for our state.

Response:

Please see response to SOC 1.

SOC 5:

I support the mine expansion which will give TCMC the opportunity to extend the life of the mine. This will provide significant economic benefits while only slightly increasing the environmental footprint.

Response:

Please see response to SOC 1.

SOC 6:

I support the MMPO and land exchange as a shareholder and support the benefits for the local economy.

Response:

Please see response to SOC 1.

SOC 7:

Thompson Creek is a good employer and provides many high quality jobs in central Idaho. They support employees and their families with great benefits and excellent wages.

Response:

Please see response to SOC 1.

SOC 8:

The TCM is a major contributor to the global supply of molybdenum which is an important modern metal.

Response:

Please see response to SOC 1.

SOC 9:

I support the mine expansion because it gives TCMC the opportunity to keep their employees for an additional 10 - 15 years.

Response:

Please see response to SOC 1.

SOC 10:

TCMC spends over 100,000 dollars annually to support rodeos, concerts, schools, and many other programs that add value to our community.

Response:

Please see response to SOC 1.

SOC 11:

I support TCMC because I am a member of a group of citizens that has greatly benefited from the their contributions to our community.

Response:

Please see response to SOC 1.

SOC 12:

TCMC makes it a point to donate to our schools and my children have benefited from that.

Response:

Please see response to SOC 1.

SOC 13:

The EPA completed a Site Investigation Report for TCMC in December 2013. EPA concluded in the report that there is significant potential for major releases from the site to have major downstream impacts. Due to the volume of source material and potential for future releases, particularly in the absence of sufficient financial assurance for long-term water treatment, a significant potential threat to public health or the environment is posed by the mine. The presence of significant (as defined in the report section 3) concentrations of metals in the surface water bodies located within 15 miles downstream of the site (the Target Distance Limit), indicate that there have been and continue to be releases of hazardous constituents to the environment. These releases, coupled with the potential impacts to targets in these water bodies, create this significant potential threat. These potential impacts are largely due to the uncertainty of long-term water treatment because of a lack of financial assurance. For this reason, further action under CERCLA is recommended as a potential tool for the TCM site to ensure, at a minimum, the adequacy of financial assurance.

Response:

The BLM understands the EPA is acting administratively under the CERCLA in relation to the TCMC according to the EPA Region 10 Mining Financial Assurance Strategy Memorandum dated January 16, 2009. However, the amounts of the financial guarantees for the mine are administrative matters of the BLM, Forest Service, IDL, and IDWR. Regardless, the BLM welcomes any assistance the EPA is able to provide the agencies in their reviews of the cost estimates for the reclamation of the mine, including long-term water management.

SOC 14:

The DEIS does not provide detailed information on funds that would be made available post closure to treat the resulting mine-influenced water in perpetuity. The EPA's independent estimate of financial assurance needed for long term water quality treatment, maintenance, and operation for Phase 8, using a scenario for an unplanned closure, could be up to \$77.8 million. However, the existing trust fund to cover earlier mine operations is \$42.3 million and covers only reclamation, not post closure operations and water quality treatment. Based on the level of environmental risk, the EPA strongly recommends that BLM determine and disclose the amount of financial assurance that will be required. This information should be provided in a Supplemental Draft EIS.

Response:

Please see response to SOC 13. A supplemental EIS is not anticipated at this time.

SOC 15:

An aspect that the BLM has not identified as an issue is the regulatory environment under different management scenarios. The environmental effects of unplanned issues such as acid mine drainage, accidental leaks and spills, and failure of design features can be greatly

reduced if there is a monitoring program to detect and respond to these situations earlier rather than later. As such, the EIS should compare the following factors under different management scenarios: number of agency inspections, the thoroughness of these inspections, the ability to review the adequacy of the reclamation bond and adjust it as needed, the frequency of bonding review, bonding amounts, the past history of bonding increases, past history of calculating the correct bond, the amount of potential fines for violations, and the ability to require and manage a fund for long term water treatment.

Response:

The monitoring program and the monitoring related to the adaptive management plan are described in the EIS (Section 2.1.1.7. and Section 2.1.1.9). NEPA analysis must be about the proposed Federal actions, the reasonable alternatives, and the reasonably foreseeable effects of such. The agencies expect that TCMC will comply with the law. Regulatory oversight (with its own NEPA analysis) is an administrative matter and not a NEPA issue. For example, NEPA analysis is completed to determine if an agency may institute regulations allowing the inspection of a mine site or obtaining financial guarantees for a mine. The implementation of such regulations is then an administrative matter subject to agency funding, staff availability, workload priorities, etc. Financial guarantees are discussed under responses to SOC 13 and SOC 16 to SOC 19.

SOC 16:

Bonding calculations and financial guarantees need to be part of the NEPA analysis and a broader discussion of the regulatory framework of such is needed.

Response:

The BLM, Forest Service, IDL, and IDWR will continue to hold financial guarantees adequate to cover the cost of reclamation of the mine according to the reclamation plan (Section 1.9.21). The amounts of the financial guarantees are established by regulation and thus are administrative matters and not NEPA issues. For example, financial guarantees were programmatically evaluated as part of the BLM rule-making process in the Surface Management Regulations for Locatable Mineral Operations FEIS released in October 2000. That EIS evaluated a range of financial guarantee alternatives including no financial guarantees and worst-case financial guarantees. The ROD selected Alternative 3, which requires financial guarantees adequate to cover the costs as if the BLM were to contract with a third party to complete the reclamation according to the reclamation plan. Consequently, there is no NEPA decision space regarding the amounts of the financial guarantees – they are required by regulation to cover the cost of reclamation according to the reclamation plan. Accordingly, the amounts may be revised by the agencies without NEPA analysis.

For example, prior to completing the NEPA process for the MMPO, the agencies intend to administratively accept a modification to the current reclamation plan for Phase 7 long-term water management (Section 2.1.2.), and the BLM intends to obtain a financial guarantee for such to be held in a trust fund pursuant to 43 CFR 3809.522(c) (Section 1.9.21). The BLM intends to seek the assistance of the EPA during the administrative review of the updated reclamation cost estimate.

SOC 17:

The EIS states that the reclamation cost estimate will be periodically adjusted but does not provide any timeframe (every 3 years, every 10 years) for this review and adjustment. Bonds are not reviewed as frequently as needed.

Response:

The reviews of reclamation cost estimates are administrative matters (conducted internally by the agency(s)) and not NEPA issues. If such were not the case, the agencies would not be able to make timely adjustments to financial guarantees. For example, the BLM has written policy requiring a review at least once each 3 years but may require that an operator provide an updated reclamation cost estimate whenever the BLM deems such is necessary per 43 CFR 3809.522.

SOC 18:

We disagree with to the concept that the specific amounts of financial guarantees are part of the BLM administrative process and are not NEPA issues. According to the EIS, such review will only occur after the NEPA process is closed. This violates NEPA's requirement for a full discussion of all mitigation measures and impacts.

Response:

The reviews of reclamation cost estimates and the process of obtaining financial guarantees are administrative matters and not NEPA issues. If such were not the case, the agencies would not be able to make timely adjustments to financial guarantees. For example, the BLM has written policy requiring a review at least once each 3 years but may require that an operator provide an updated reclamation cost estimate whenever the BLM deems such is necessary per 43 CFR 3809.522. For the BLM, financial guarantees are not typically obtained until after a plan of operations is approved. In the case of an ongoing mine financial guarantees may be adjusted at any time deemed necessary by the agencies. Forest Service regulations (36 CFR 228.13[a]) only require operators to furnish the reclamation bond prior to approval (after the NEPA decision). The review of a reclamation cost estimate and obtaining or adjusting a financial guarantee is not a mitigation measure or NEPA effect. Therefore, the agencies intend to obtain a financial guarantee for long-term water treatment for Phase 7 prior to completing the NEPA process for the project.

SOC 19:

NEPA requires that mitigation measures be fully reviewed in the FEIS, not in the future. In this case, the public has no idea as to how "effective" the mitigation/reclamation bond would be for any of the action alternatives – because neither TCMC nor the BLM have divulged this information. Such elimination of the public's rights to fully participate in the NEPA process cannot stand.

Response:

Financial guarantees are not mitigation measures, but are administrative requirements for TCMC. The information used by the agencies for the review of a reclamation cost estimate and obtaining a financial guarantee is, in almost all cases, not confidential and available for public inspection. Please see also response to SOC 16.

SOC 20:

The EIS must disclose the effects of a compromised [due to tree growth] tailings cap in years 150 and beyond, increased infiltration into the tailings facility, anticipated changes in water quantity and quality leaving the tailings facility, and revised costs for addressing these in years 150 and beyond so that water quality standards are still maintained into the future.

Response:

The supporting technical studies and reports for the TSF evaluate the effects of the facility to water resources considering the reasonable development of vegetation and infiltration of water. The financial guarantee held by the BLM would cover the costs of long-term monitoring and water management, including that related to the TSF. Portions of the financial guarantee would be held in a trust fund with a perpetual life. Please see also response to VEG 3.

SOC 21:

The Thompson Creek molybdenum deposit should be mined in keeping with the national mineral policy.

Response:

Comment noted. The National Critical and Strategic Minerals Policy Act of 2013 (HR 1063) directs the Secretary of the Interior, in part, to promote an adequate and stable supply of minerals to maintain the nation's economic well-being, security, and manufacturing, industrial, energy, agricultural, and technological capabilities.

7.2.15. Tribal Treaty Rights and Interests (TRIB)

There were no comments on Tribal treaty rights and interests related to the MMPO.

7.2.16. Cultural Resources (CR)

There were no comments on cultural resources related to the MMPO.

7.2.17. Transportation, Access, and Public Safety (TRAN)

TRAN 1:

TCMC is a responsible operator with an excellent safety record.

Response:

Please see response to GEN 5.

TRAN 2:

The current transportation and fuel haul plan is designed to reduce accidents and spills and understand that no changes are proposed. However, it is always useful to reexamine systems and procedures to see if there are improvements to be added. For example, there are improvements in technologies related to braking systems, sensors that can alert drivers to icy conditions, cameras that drivers can use when backing up, and ways to deter big

game from roadways. There may also be ways to further improve carpooling services to minimize individual vehicle trips or to improve the fuel efficiency of the onsite vehicle fleet. Likewise, there have been improvements in fuel haul planning for other projects that are relevant to this one. These include the use of SPOT messengers, pilot cars, triggers, and communications plans to prevent accidents and facilitate spill cleanup. The BLM and TCMC should use this current opportunity to revisit these issues and incorporate changes in the MPOO.

Response:

TCMC continually evaluates their transportation plans to ensure maximum safety and efficiency. TCMC works to prevent vehicle accidents at the mine through behavioral awareness safety training, speed controls, road design, traffic pattern analysis and adjustment, warning signs, vehicle maintenance, establishing clear employee responsibilities, monetary incentive programs, etc. (TCMC 1996).

TRAN 3:

The EIS should include a final road configuration for the project.

Response:

The EIS describes the road disturbance (acres) sufficiently for NEPA analysis including the reclaimed length and width of the roads within the MMPO area (Section 2.1.2., Table 2.1-3). A map with more detail about roads at the mine would not provide the decision maker with meaningful information (and the road configuration of the mine would not vary among the alternatives). However, the project GIS data in the administrative record includes the lengths and widths of all mine-related roads. In addition, once an MMPO alternative is selected, TCMC will provide a “record of decision” MMPO that must conform with the selected MMPO alternative. The “record of decision” MMPO will include detailed maps of the mine both during operations and after reclamation suitable for agency administration of the mine. The agencies will then administratively approve the MMPO.

7.2.18. Hazardous Materials and Solid Waste (HAZ)

HAZ 1:

TCMC manages hazardous wastes responsibly and controls fuel releases or other spills immediately and according to all state and Federal regulations. They have plans and systems in place to respond immediately to these types of occurrences.

Response:

Comment noted.

7.3. Public Concern Statements – Land Disposal

7.3.1. General Comments (GEN)

GEN 25

I support the proposed land exchange.

Response:

Comment noted.

GEN 26:

I am opposed to the land exchange.

Response:

Comment noted.

GEN 27:

The proposed land exchange is a win-win for TCMC and the BLM.

Response:

Comment noted.

GEN 28:

I support the proposed land exchange to consolidate land management by the BLM.

Response:

Comment noted. Acquisition of the offered lands by the US would increase block Federal land tenure in the vicinity of the offered lands (and would decrease block Federal land tenure in the vicinity of the selected land. This land consolidation would improve land management and potential to implement policy to improve environmental sustainability along the Salmon River.

GEN 29:

I also support preservation of open space and historic practices along the five-mile section of the Salmon River.

Response:

Comment noted.

GEN 30:

I support the land exchange because it will enhance my recreational opportunities, and protect water quality and wildlife habitat.

Response:

Comment noted.

GEN 31:

The US should not give away our land.

Response:

As noted in the EIS (Section 2.2.), the FLPMA requires that the public interest would be well served by a land exchange. In considering whether an exchange is in the public interest, the FLPMA directs the Secretary of the Interior to “give full consideration to better Federal land management and the needs of State and local people, including needs for lands for the economy, community expansion, recreation areas, food, fiber, minerals, and fish and wildlife...” The Secretary must also find “that the values and the objectives which Federal lands or interests to be conveyed may serve if retained in Federal ownership are not more than the values of the non-Federal lands or interests and the public objectives they could serve if acquired” (FLPMA Section 206(a)). The EIS evaluates the effects to the resources such that the decision maker may evaluate if the land exchange would be in the public interest.

GEN 32:

The land exchange is unfair; the US would only get 900 acres but TCMC would get 5,100 acres.

Response:

As noted in the EIS (Section 2.2.), the FLPMA requires that lands being exchanged be of equal (fair market monetary) value. To achieve this, all reasonable efforts must be made to equalize the value by adding or excluding lands and/or by making a cash equalization payment, up to 25 percent of the value of the public lands leaving Federal ownership (43 CFR 2201.6). This requirement ensures that the exchange is fair, despite the inevitable difference in the areas of the offered and selected lands, since not all land is worth the same dollar amount per acre.

GEN 33:

The mine should just be given the land so we can use our land for resources and access.

Response:

The BLM does not have the authority to give Federal land to a private party. An alternative to the land exchange is Alternative L3 – a sale of the selected land. The BLM would amend the Challis RMP to identify the selected land as suitable for disposal by sale under Section 203 of the FLPMA. The US would not obtain any of the offered lands. The selected land would be sold by a direct (non-competitive) sale to TCMC, a modified competitive sale (TCMC would be identified as the bidder authorized to meet the high bid), or a competitive sale (the highest bidder would receive title to the property). In the first case the sale would be at the appraised fair market value pursuant to Section 203 of the FLPMA and all other applicable laws, regulations (e.g. 43 CFR 2710). The selected land is also currently used by TCMC for mine facilities under

a permit from the BLM. Roads on the selected land are managed by the BLM to be multiple use but may have restrictions to be protective of resources or for safety related to mining facilities.

GEN 34:

TCMC needs the land exchange so Phase 8 of mining operations (MMPO) can occur.

Response:

The outcome of the land exchange does not affect the decision/outcome of the MMPO. If TCMC did not acquire the portion of the selected land that contains the MMPO it would still be able to move forward with mining operations under Phase 8.

GEN 35:

If TCMC acquired the selected land it would then abut our property. Being adjacent to a mine would affect our enjoyment of our property and limit what we could do with it.

Response:

The effects analysis was revised to include an effect to the property value of the adjacent private land.

GEN 36:

Alternatives L2, L3, and L5 encroach upon the property line of the disposal land we had hoped to acquire.

Response:

The land exchange proposal included BLM land on the east side of S. Creek Road adjacent to the Red Bird property. However, the BLM believes a property line along S. Creek Road (except adjacent to the sliver of Red Bird property on the east side of the road) would be in the best interest of the public, e.g., readily identifiable on the ground and excludes riparian areas along S. Creek. Therefore, the boundary of the selected land was modified accordingly for Alternative L2 (with the agreement of the proponent), Alternative L3, and Alternative L5. Accordingly, in the event of a sale of BLM land around the Red Bird property, the western boundary of the sale land would be similarly modified. The EIS was revised to clarify that the northeast boundary of the selected land would be S. Creek Road except for where the boundary would be adjacent to a sliver of Red Bird property on the west side of the road.

GEN 37:

We should not be giving a foreign company our land.

Response:

The BLM would not be giving TCMC the selected land. Alternatives L2, L4, and L5 would result in an exchange of land between TCMC and the BLM that would result in, overall, a net gain in resource values for the US. If Alternative L3 was selected, the US would sell the selected land to a private buyer. TCMC's parent company is located in Canada, which is of no bearing on the decision.

GEN 38:

Consideration of the land exchange should not delay a decision on the MMPO.

Response:

The MMPO and land disposal ROD will be issued separately and one does not depend on the other. The MMPO ROD will be issued before the land disposal ROD. In the case of the Forest Service, a draft ROD will be issued on the MMPO as part of the Forest Service objection process (Section 1.6).

GEN 39:

I am concerned about what the BLM would do with the Broken Wing Ranch. I want more public access but don't want it taken over by a corporation or taken out of agricultural production. I don't want the land to go back to sagebrush.

Response:

Under the preferred alternative (Alternative L2), the Broken Wing Ranch would remain agricultural with some management changes to be protective of natural resources and add recreational amenities or research facilities. If Alternative L2-B were chosen, the ranch would be actively converted back to native vegetation. The analysis of these alternatives is provided in Chapter 4.

GEN 40:

Federal lands are for the public and therefore should be available for any public use.

Response:

BLM lands are managed for multiple use; therefore, some uses are not compatible such as public access to lands used by a mining facility. In the case of the land exchange, TCMC would still allow public access, with limitations, to the selected land should TCMC acquire it.

GEN 41:

I am opposed to the proposed large transfer of public land to the east of the TCM which would expand private mine land approximately 1.5 to 3 miles eastward to the S. Creek stream channel. This large amount of acreage proposed for this transfer is way in excess of need for current and future operations of the mine. The proposed MMPO extends only a small fraction of this distance eastward and should be adequate for the projected mine life under Phase 8. The huge amount of acreage proposed to be given away appears to provide no future use for the mine.

Response:

The Federal (selected) land was identified by TCMC to include the surface disturbance of the mine on BLM land in an area that could be reasonably identified on the ground and would not leave narrow strips or islands of land that would be difficult for the BLM to administer. The BLM is not allowed to give away BLM land, and must evaluate a land exchange proposal considering the meaningful effects to all of the affected elements of the human environment.

GEN 42:

The EIS states specifically that “no current intention to use any of the selected land for mining, including mineral exploration, apart from the activities identified in the MMPO alternatives....In addition, internal and public scoping and a mineral potential report (Gardner 2008) have not identified any mining activities that would reasonably be expected to occur on the selected land, apart from those identified in the MMPO alternatives.” If this is so, why would we be considering giving away such incredibly valuable land and ESA listed Chinook salmon, steelhead, and bull trout aquatic habitat to a mining company?

Response:

The BLM believes the exchange would be in the best interest of the public because the BLM would no longer need to manage land impacted by mining facilities and the US would be able to exchange land without multiple use opportunities (i.e., the land is nearly entirely for only mining) for land with multiple use opportunities. There would not be any effects to listed fish species on the selected land if TCMC were to acquire it (Section 4.7.2).

GEN 43:

BLM should consider provisions similar to Alternative L5, which includes conservation easements.

Response:

Conservation easements would be placed on S. Creek and Thompson Creek under all of the land disposal action alternatives. The land exchange proposal (Alternative L2) is the proposed action, which does not include a general conservation easement. The general conservation easement in Alternative L5 would be a variation of Alternative L4, but would allow the US to acquire more offered land than under Alternative L4.

GEN 44:

IDFG recommends these modifications to Alternative L2 in the final ROD. IDFG believes adoption of these into Alternative L2 would adequately fulfill mitigation for losses of fish, wildlife, and habitats as described in Alternative M2.

Administrative concerns: Please include IDFG in administrative access clause regarding bridge and property. Regarding “Management for Big Game Including Provisions for Public Access”. IDFG is not able to guarantee BLM entry into the Access Yes program. Therefore please modify the wording of bullet 4 to read: TCMC would pursue a donated Access Yes agreement through the IDFG Access Yes Program to allow hunter/angler access with the following exceptions (as stated) for safety.

Terrestrial resources: We recommend inclusion of clauses intended to: 1) form partnerships in order to fence areas with recognized habitat value, 2) develop a riparian management plan with the objective of achieving proper functioning condition of all cottonwood galleries along the Salmon River and the Lyon Creek (BWR-1) parcel, and 3) provide for an aggressive weed eradication program in lands acquired.

To fully mitigate for the negative effects of heavy metal leaching and sedimentation into Thompson Creek expected with mine expansion, management actions which provide for a functional year-round connection between S. Creek and the Salmon River, as well as improved riparian habitat conditions in lower S. Creek would be appropriate mitigation actions. IDFG recommends development of a proposal to achieve these and include them in L2.

Response:

The EIS was revised to note that the BLM will pursue administrative access to the Lyon Creek Bridge for the BLM and State agencies. If administrative access to the bridge cannot be obtained for State agencies, the agencies would still have access to the ranch via the public access route. In addition, the BLM would grant State agencies administrative access to the ranch (e.g., use of motorized vehicles on Lyon Creek Road). The text regarding the Access Yes program was modified per the comment. A general ranch management section was added to Section 2.2.2.2. to explicitly allow for the actions noted in the comments for terrestrial resources. The BLM explored off-site mitigation for S. Creek with TCMC. The company is open to an agreement in which some of the water rights TCMC owns for S. Creek would be converted to improve the year-round flow of the stream, if agreements could be reached with the owners of downstream diversions that have greater potential to dewater S. Creek during low flows, e.g., the water rights owned by TCMC for S. Creek are used only during high flow. Given the complexity of negotiating the agreements and the lack of BLM jurisdiction in the matter, such agreements were deemed outside the scope of the project (JBR 2011). However, the BLM would be willing to work with the IDFG and TCMC to establish such agreements in the future.

GEN 45:

Additional analysis is needed on how the Broken Wing Ranch may be managed under BLM administration. There is potential for meaningful public benefits but that significant restoration work will first be needed in order to realize these.

Response:

The EIS provides the details of two ranch management subalternatives sufficient for the BLM to make an informed decision on the land exchange proposal and the other alternatives. Internal and external scoping, the supporting scientific studies, and the public comment period for the DEIS did not provide feasible new ranch management subalternatives or key modifications to the subalternatives, e.g., specific restoration projects other than those identified in the EIS. The FEIS identifies Alternative L2 as the preferred management subalternative, and will include additional information about standard ranching and agricultural activities that could occur on the ranch.

GEN 46:

The Broken Wing Ranch is of greater public benefit than the Garden Creek property and the BLM should prioritize that property and the Lyon Creek/Graham Field Meadow in particular.

Response:

If selection of Alternative L4 or Alternative L5 was necessary to achieve equal valuation, the Garden Creek property could be removed from the transaction and/or the ranch parcels. The parcels with the highest resource values would be prioritized to stay in the transaction.

GEN 47:

Alternative L2-B, which actively restore native habitat, best meets the long-term public interest and the specific purposes of the exchange. The public values of the Broken Wing Ranch area are best served by retiring livestock grazing in the area. The EIS provides a fairly stark but accurate portrayal of livestock grazing in the larger cumulative effects study area.

Response:

Comment noted. The BLM-preferred alternative is Alternative L2 rather than Alternative L2-B because the BLM desires to maintain the agricultural uses of the ranch. Grazing strategies would be altered, however, to protect the riparian area adjacent to the Salmon River.

GEN 48:

One of the reasons for the land exchange was that, with the exception of mining and livestock grazing, other multiple uses could not be readily accommodated within the project area. These include the prioritization of fish and wildlife habitat, particularly for listed fish species. Within the offered lands, there are a number of activities that can harm fish and fish habitat. These include livestock grazing in riparian areas, agricultural practices such as irrigation that can reduce stream flows, off highway vehicle use in sensitive areas, and the ford across Lyon Creek for motorized vehicle access. If the selected areas are going to be dedicated to mining infrastructure over fish habitat (particularly the unrecoverable stretches of Bruno Creek, Buckskin Creek, Pat Hughes Creek), then the offered areas need to be prioritized for fish and wildlife recovery.

Response:

The BLM must generally administer land for multiple uses, and to the overall benefit of the public considering factors that vary from recreation to socioeconomic concerns. The fact that one area of land is primarily used for mining, livestock grazing, recreation, or the protection of cultural resources does not require than an equivalent amount of land be administered by the BLM for an offsetting use.

GEN 49:

While we greatly appreciate conservation easements on portions of S. and Thompson creeks, other stretches of the selected lands, including riparian areas, have been and will be permanently converted to mine infrastructure and buried under expanding WRSFs or the TSF, in direct contradiction to the Challis RMP. As such, the proposed land exchange is inconsistent with the direction of the Challis RMP. Ways to possibly address this include prioritizing the offered lands for fish, riparian, floodplains, and wetlands and for TCMC to conduct additional restoration activities on site in advance of the exchange.

Response:

The DEIS is also a draft RMP amendment and the FEIS is a proposed RMP amendment to allow the disposal of the selected land and amend the Challis RMP accordingly (Section 1.7).

GEN 50:

We fully support the active restoration of the cultivated fields back into native vegetation but it may take more than three years. The irrigation system should be upgraded and utilized as need for this restoration process. Upon the successful restoration of native vegetation, the irrigation facilities should be removed, water rights should be reallocated to benefit for fish recovery, and the in-stream water flows should increase.

Response:

Comment noted. If Alternative L2-B were selected, the irrigation system would be upgraded, if necessary, and the process would be maintained until native vegetation was established. Following the establishment of native vegetation, the facilities would be removed; however, it is unknown if the water rights would be, or could be, reallocated. The reallocation of water rights would be considered by the BLM under future NEPA analysis.

GEN 51:

A management plan for the entire property is needed and should be analyzed under NEPA. This plan should examine the sustainability of designating the east or west side of the river as a non-motorized trail. The plan should prohibit cross-country motorized travel and designate trails for OHVs only if these trails can be sustainably managed. The need for a boat ramp needs to be assessed with respect to the availability and functionality of existing boat ramps.

Response:

The management subalternatives in the EIS are management plans sufficient for the BLM to make an informed decision regarding the land exchange alternatives, and provide sufficient detail for the BLM to administer the ranch according to either subalternative. ESA consultation would be completed on the ranch management described in Alternative L2 in the EIS. No other key management provisions have been identified through internal and external scoping (JBR 2011), the supporting scientific reports, or the public comment process for the DEIS (Section 7.2.2., Appendix E). The EIS was revised to note the options on the ranch of constructing foot trails such as along sections of the Salmon River or to the historic Maraffio homestead. Where not specified otherwise in the EIS, the management of the ranch would be according to the Challis RMP and other applicable plans. For example, motorized travel would be limited to existing roads (except for activities on the irrigated fields such as plowing). The need for a boat ramp was identified during internal and external public scoping. However, to ensure long-term protection of Thompson and S. creeks, conservation easements would be placed on the riparian corridors of the portions of the streams in the selected land.

GEN 52:

We appreciate the work that TCMC has already undertaken to improve the habitat on the Broken Wing Ranch, which has included the installation of a fish screen on one of the four

diversions and increases in water efficiency of some of the irrigation systems, fencing along the Salmon River, and off-stream livestock watering systems. We support the implementation of the additional restoration projects described, including the removal of the pond and the repair of fences as needed. The following steps should be taken at the Broken Wing Ranch: treating noxious weeds (Canada thistle, Russian knapweed, Musk thistle and Oxeye daisy), replacing the ford with a bridge engineered for administrative use, outfitting the remaining diversions with fish screens, and increasing other efficiencies in the irrigation system. Irrigation water would likely be needed successful restoration of the upland habitat but that these irrigation features need to be decommissioned to allow for increased stream flows for fish. As such, investments in the irrigation system need to be weighed against the decommissioning of these same features in the near term. In order to best guarantee that the public receives these benefits, we recommend that TCMC complete these restoration projects in advance of the land exchange actually occurring.

Response:

Comments noted. Weeds at the ranch would be controlled by the operator according to standard BLM methods, and the effects of weeds on the ranch are evaluated in the EIS (Section 4.4.2). The EIS was revised to note the option under general ranch management of installing a bridge over the Lyon Creek ford, installing screens on diversions, and a variety of actions that could improve the flow of Lyon Creek to the Salmon River and reduce the temperature of Lyon Creek. The implementation of such actions would depend on the results of ESA consultation, and some of the actions could be made as a condition of title transfer.

GEN 53:

Although Lyon Creek has clear benefits for fish, wildlife, and the public, the EIS clearly states that, if restored and protected, the lower stretches of S. Creek and Thompson Creek have greater potential benefits for listed fish. As such, the public interest is best served by Alternative L5, Reduced Area Land Exchange, Easement. In terms of the offered lands, we recommend prioritizing acquisition of the Graham Meadows and riparian/riverfront stretches of the Broken Wing Ranch over the other offered areas. The BLM should also revisit the proposed easement area on S. Creek and consider extending it north of the easement exclusion area, through the existing mine disturbance, past the Redbird Mine and the confluence of Redbird Creek, to the proposed land exchange boundary. We also recommend that a baseline monitoring program be established to assess if PFC Indicators are improving over time.

Response:

Comments noted. The BLM will make the determination of whether a land exchange would be in the overall public interest considering a wide variety of factors as required by the FLPMA. The effects to resources on the ranch are evaluated by parcel to allow the decision maker to prioritize the selection of parcels if the appraised fair market value of the selected land would not allow the US to obtain the entire ranch. The conservation easement and other stipulations and conditions are limited to the selected and offered lands. In the event of the selection of a land disposal action alternative, the BLM will consider the option of establishing properly functioning condition indicators as part of the administrative monitoring of the conservation easement for Thompson Creek and S. Creek.

7.3.2. Alternatives (ALT)

There were no comments regarding other alternatives to the land disposal.

7.3.3. Geologic Resources and Geotechnical Issues (GEO)

GEO 6:

If the land exchange proceeds, we believe that a mineral withdrawal for any acquired property such as the Broken Wing Ranch should be mandatory. As such, the best case scenario is for the TCMC to donate the mineral estate to the BLM. We would like to have additional assurances that the BLM would not open the estate to mineral entry in the future. The BLM should also make an RMP amendment which designates this area as a Research Natural Area, SRMA, or some other complimentary protection that precludes non-conforming mineral development.

Response:

TCMC is expected to donate the mineral estates of the offered lands to the BLM to preclude mineral entry. If the BLM decides to open the offered lands to mineral entry in the future, the BLM would need to conduct the appropriate NEPA analysis. Special designations of the offered lands are outside the scope of the project, which is to determine if the BLM will obtain title of the offered lands in exchange for giving title of the selected land to TCMC. If the US acquires the offered lands, the issue of special designations (e.g., Research Natural Area or SRMA) for the lands would most appropriately be raised during the periodic land use planning for the BLM field offices administering the offered lands.

7.3.4. Soil Resources (SOIL)

There were no comments on soil resources related to the land disposal.

7.3.5. Vegetation, Forest Resources, and Invasive and Non-native Plants (VEG)

There were no comments on vegetation, forest resources, and invasive and non-native plants related to the land disposal.

7.3.6. Range Resources (RNG)

RNG 4:

There are some unique opportunities within both the offered and selected lands to retire grazing allotments where it is likely to result in improved water quality and fish and wildlife habitat. Livestock grazing would be allowed to continue within much the selected lands affected by mining operations. As such, there should not be any livestock grazing in the Broken Wing Ranch area. One exception might be the targeted and carefully-managed use of goats to reduce noxious weeds, provided that adequate separation from bighorn sheep can be guaranteed.

Response:

The retirement of grazing allotments is not under consideration for the selected or offered lands. Under the preferred Alternative L2 grazing would continue but would be managed to provide protection to natural resources.

7.3.7. Water Resources (WTR)

WTR 37:

The natural resource value of Thompson and S. creek watersheds are of incomparable value to the resource value of the Broken Wing Ranch.

Response:

The fisheries values of Thompson and S. Creek tributaries are not comparable to Lyon Creek. However, the value of protecting several miles of the Salmon River from development is substantial. The BLM would relinquish several miles of DCH on Thompson and S. Creeks for a reduced length of DCH on Lyon Creek. These discrepancies would be offset by the conservation easement restrictions placed on the management and development of the Thompson and S. Creek drainages. The BLM would retain protection of Thompson and S. Creeks via the conservation easement while gaining the management and restoration ability for 4 miles of the Salmon River and 1.5 miles of Lyon Creek.

7.3.8. Wildlife Resources (WLF)

WLF 9:

The following groups of wildlife and their habitats would benefit from acquisition by BLM and subsequent management as described in Alternative L2 and as proposed by the BLM RAC:

Habitats: Four primary habitat types occur on the Broken Wing ranch: arable lands, southern xeric shrubland and steppe (sagebrush steppe), canyon/rockland, and riparian woodland, including the open water of the Salmon River.

Fish species: The S. Creek watershed supports habitat for a number of key salmonid fish species including resident and anadromous forms. Along with all other waters of the Salmon River drainage, these watersheds have been designated as critical habitat for Snake River spring/summer Chinook salmon.

Game species: Mule deer and elk use the Broken Wing Ranch as part of their winter range. The aspen stand along Lyon Creek is a very important component of deer and elk habitat. Aspen is used year-round as a preferred food source and during the spring for fawning and calving. Ranch management that eliminates or minimizes livestock browsing of aspen suckers would allow the aspen stand to rejuvenate and allow a greater diversity of understory vegetation to grow, both of which will benefit deer and elk.

Pronghorn may use the sagebrush steppe component of Broken Wing Ranch during the winter or periods of migration. Management of intact, unfragmented sagebrush habitat with minimal fencing would be most beneficial to pronghorn.

The sagebrush-steppe communities on the ranch appear to contain suitable habitat for sage grouse. Managing the sagebrush-steppe habitat components of Broken Wing Ranch to preserve unfragmented habitat will benefit sage grouse.

Non-game species: Several avian species of greatest conservation need (SGCN) are associated with the riparian woodland habitat on or in the vicinity of Broken Wing Ranch. Sandhill crane, long-billed curlew, and short-eared owl are such species expected to occur in the open grasslands, wetlands, river banks, and pastures/hayfields of Broken Wing Ranch. Four species of bats classified as such may occur on or in the vicinity of the Broken Wing Ranch (California myotis, fringed myotis, spotted bat, and Townsend's big-eared bat). Notably, Broken Wing Ranch connects two critical habitat attributes: day/night roosting areas with riparian feeding sites.

Response:

Comment noted. The existing wildlife habitats are described in Section 3.8 and effects to wildlife and their habitats are provided in Section 4.8.

7.3.9. Fish and Aquatic Resources (FISH)

FISH 4:

The Salmon River hosts a number of species listed under the ESA and is one of the most productive fisheries in the State of Idaho. In addition, most of these species also occur in Thompson Creek. We believe it is essential to ensure that riparian areas (similar to proposed conservation easements in Alternative L5) are conserved to protect beneficial uses.

Response:

Sockeye salmon have not been found in Thompson or S. creeks, only in the main Salmon River which it uses as a migratory corridor. Conservation easements would be placed on S. Creek and Thompson Creek under all of the land disposal action alternatives. The easements would ensure the protection of riparian values along the portion of Thompson Creek in the selected land. Easements would not be placed on the Salmon River, but the BLM ranch management strategies would improve the riparian area adjacent to the Salmon River within the ranch by increasing the width of riparian vegetation (cottonwood, willow, forbs) with restoration and rest from grazing.

FISH 5:

Implementing Alternative M2 in the Thompson Creek drainage would affect the three ESA-listed salmon species as well as resident and fluvial westslope cutthroat trout. Thompson Creek is not as flow limited as other tributaries in this reach of the upper Salmon River and is a reliable source of habitat for these species. Alternative L2 includes beneficial effects to aquatic habitat in Lyon Creek and the Salmon River. From a fisheries

perspective, however, Thompson and S. Creeks are significantly larger watersheds with greater species richness, production capacity, and potential for benefits to the overall upper Salmon River than is Lyon Creek.

Response:

Comment noted. The effects to fish in Thompson Creek, Lyon Creek, and the Salmon River are described in the EIS (Section 4.8.1. and Section 4.8.2).

FISH 6:

IDFG staff will be available to assist you with any technical support requested. Funding opportunities exist through the IDFG Habitat Improvement Program, Fisheries Habitat Program, Salmon and Steelhead Fishing and Boating Account and various federal, state and private grant programs.

Response:

Comment noted. The BLM appreciates such support, and would anticipate requesting funding through IDFG programs, as well as other sources, for some of the ranch improvements with benefits to fish and wildlife.

7.3.10. Wetlands, Floodplains, and Riparian Areas (WET)

There were no comments on wetlands, floodplains, and riparian areas related to the land disposal.

7.3.11. Air Quality, Noise, and Climate Change (ANC)

There were no comments on air quality, noise, and climate change related to the land disposal.

7.3.12. Visual (Aesthetic) Resources (VIS)

VIS 3:

I support the land exchange because I want to preserve the visual qualities of the Salmon River corridor and surrounding public lands.

Response:

Comment noted. If the offered lands come under jurisdiction of the BLM, the visual resources of the offered lands would then be inventoried and managed using the BLM VRM system.

7.3.13. Land Use and Recreation (LUR)

LUR 2:

I support preservation of open space and historic practices along the portion of the Salmon River within the Broken Wing Ranch.

Response:

Comment noted. Land use conditions and effects, including benefits, are analyzed in Sections 3.12, 4.12, and 5.12.

LUR 3:

I support the land exchange because it would allow access to recreational and hunting opportunities previously unavailable to the public.

Response:

Comment noted. Acquisition of the offered parcels would provide additional recreational opportunities along the Salmon River as these lands would be open to the public. Furthermore, if these lands come under jurisdiction of the BLM, the lands and resources would be managed as directed by the Challis RMP. Land use and recreation conditions and impacts, including benefits, are analyzed in the EIS (Section 3.12 and Section 4.12).

LUR 4:

The land exchange will allow new opportunities to access some public lands that are now very difficult to access.

Response:

The land disposal action alternatives include provisions (not mitigations) proposed by TCMC to include public access to lands accessed by South Butte Road, as well as other access provisions to exclusive private parties.

LUR 5:

I want to see TCMC acquire the selected land so they can be responsible for managing the WRSFs and other mine facilities on their own land.

Response:

Comment noted. TCMC currently manages the WRSF and other mine facilities on the selected land with BLM oversight as well as the oversight of other agencies such as the IDL.

LUR 6:

There is too much Federal land in Custer and Bannock counties.

Response:

Under the preferred land disposal alternative (Alternative L2) the amount of Federal land would decrease by a negligible amount in Custer County and would increase by a negligible amount in Bannock County (Section 4.12.2.2).

LUR 7:

Broken Wing Ranch is currently one of the most beautiful and productive ranches along the Salmon River. While your management alternatives vary between some cultivation

and grazing to no agricultural use, my observations of other BLM acquisitions along the river notice that most do not remain in production, and thus revert to glorified weed patches. In Custer County, where already 96 percent of the land is Federally owned, there is already an abundance of public access, even along the Salmon River, and all around Broken Wing Ranch. There is no need for more campgrounds, boat launch sites, or public access points. Furthermore, with the high turnover rate of BLM employees along with budgetary fluctuations determined by whimsical government administrations, oversight of the ranch and management or lack thereof, would be an additional burden on an agency that struggles with managing its' current responsibilities.

Response:

Comments noted. Under the agency-preferred land disposal alternative (Alternative L2), the ranch would be maintained as a working ranch with some management changes to accommodate recreation and be more protective of natural resources. The BLM RAC, IDPR, and internal scoping identified the need for additional campgrounds, boat launches, and other public access along the Salmon River. The burdens to the finances/staff of the BLM are summarized in the EIS (Section 4.13.2).

LUR 8:

If open space is a desirable quality, there are agencies such as the NRCS and groups such as The Nature Conservancy or the locally administered Lemhi Land Trust that are willing to work with landowners to achieve these goals and maintain the productivity of the ranch.

Response:

The NRCS was recently involved in several fish and wildlife habitat improvement projects on the ranch. The BLM would welcome any assistance these organizations could provide to the BLM or ranch operator consistent with the selected land disposal alternative.

LUR 9:

I do not feel that the acquisition of the Broken Wing Ranch by the BLM is a wise decision. This ranch is composed of resource values that are predominantly agricultural. The value as public land would be biased towards agricultural and livestock pasture use. The general public would have to naturally be kept out of this ranch for it to operate properly, therefore the use and value of this land would benefit primarily the lessee.

Response:

The ranch would maintain agricultural uses, but a variety of public uses has been proposed (BLM 1999) as well as public access on the ranch and in Lyon Creek meadow (Section 2.2.2.2).

LUR 10:

If TCMC acquires the selected land it will negatively affect an existing hunting outfitter (Mile High Outfitters).

Response:

The EIS was revised to provide more details about the use of the selected land by Mile High Outfitters under a BLM special recreation permit, and to note that the permit would be modified under the land disposal action alternatives if necessary to exclude the selected land for the land disposal action alternatives. The BLM has researched the Access Yes program with the IDFG. Under all of the land disposal action alternatives, the BLM believes the outfitter would be able, under the Access Yes program, to use all of the areas of the selected land currently used. That is, as a condition of title transfer, TCMC would provide a written agreement allowing public access (including State-licensed commercial outfitters) to the selected land as described in the EIS. In addition, the State no longer requires outfitters to be licensed to operate on private property.

LUR 11:

The BLM should also make an RMP amendment which designates this area as a Research Natural Area, SRMA, or some other complimentary protection that precludes non-conforming mineral development.

Response:

Please see response to GEO 5.

LUR 12:

We have concerns about the development of a campground or park on the Broken Wing Ranch by the IDPR or other agency for profit. We are particularly concerned about impacts to cultural resources from developments and recreational use in the area. There already is a wheelchair accessible campground immediately upstream at the confluence of the Salmon River and the East Fork Salmon River. Before a new campground is considered, the negative effects of increasing use, particularly increased motorized use, in the area should be carefully considered. Only a small, dispersed camping area outside of sensitive areas should be developed. There should also only be a few walk-in campsites where visitors park their vehicles and walk in a few hundred yards to a designated tent camping area.

Response:

The development of a recreation site on the ranch would require additional NEPA analysis, which would include evaluation of the effects to cultural resources and perhaps more detailed evaluation of the effects to transportation, and consideration of other recreation sites in the cumulative effects analysis. The comments regarding the nature of the recreation site would be considered during the development of alternatives in that NEPA analysis.

7.3.14. Socioeconomic Factors (SOC)

SOC 22:

We own property adjacent to the selected land. The land exchange would affect the value of our property and restrict our enjoyment of it because the selected land would become industrial.

Response:

The effects to property adjacent to the selected and offered lands are described in the EIS (e.g., Section 4.13.2.). The effects in the DEIS were revised in the FEIS to describe an effect to the private property adjacent to the selected land. However, the effect would not be significant as no new activities on the selected land would be reasonably foreseeable in the subject area.

SOC 23:

The Federal government (BLM) should not shoulder the additional cost of managing the Broken Wing Ranch.

Response:

The economic effects to the Federal government would be negligible (Section 4.13.2.2).

SOC 24:

Custer County would get less in tax payments if the Broken Wing Ranch was no longer private land.

Response:

The effects to Custer County property taxes would be negligible (Section 4.13.2.2).

SOC 25:

There is a large discrepancy in Federal versus private acres to be exchanged; however, as long as the appraisals are based on equal market value the accompanying exchange is desirable. This assumes that mineral value is not part of the valuation. If mineral value is to be included, it would likely be very difficult to determine with much sense of accuracy.

Response:

There is no meaningful mineral value related to the selected land, particularly because the land containing all of the known ore body is private land owned by TCMC, e.g., Gardner (2008).

7.3.15. Tribal Treaty Rights and Interests (TRIB)

There were no comments on Tribal treaty rights and interests related to the land disposal.

7.3.16. Cultural Resources (CR)

There were no comments on cultural resources related to the land disposal.

7.3.17. Transportation, Access, and Public Safety (TRAN)

TRAN 4:

If the BLM acquired the Garden Creek property and the Broken Wing Ranch it would increase public access and allow US citizens to utilize these lands.

Response:

There would be public access on the Garden Creek property and the Broken Wing Ranch. However, access on the ranch would be managed to protect agricultural use.

TRAN 5:

The road accessing the Lyon Creek property from the south is in poor condition. The main access road that parallels the river crosses several high-gradient streambeds which regularly wash out the road. Continued use of this road contributes to sedimentation to the Salmon River. We suggest reconstructing and reengineering these routes, developing alternative routes to access this property, and potentially closing the existing routes or converting them to trails.

Response:

The only stream crossed by the north-south access road through the ranch is one ford over Lyon Creek, and the effects of sediment from this road are evaluated in the EIS. The road does not contribute meaningful sediment to the Salmon River due to the compacted nature of the road surface, the relatively far distance of nearly all of the road from the Salmon River, the lack of streams between the road the Salmon River, and the relatively flat agricultural fields between the road and the Salmon River. However, the BLM may adjust the grade of the road and realign the road as appropriate, e.g., the section of the road between the Lyon Creek Bridge and Lyon Creek could be moved farther from the Salmon River (Section 2.2.2.2). The BLM would require the north-south access road be in good condition as a condition of title transfer, and would thereafter maintain the road to BLM standards.

The BLM desires the option of administrative access by vehicle on the existing Lyon Creek Road, e.g., maintenance of fences, water improvements, response to unforeseen events, etc. Under the FLPMA and other laws the BLM has administrative access to all BLM land as necessary to manage the land. However, the effects of motorized (Alternative L2-B) and non-motorized (Alternative L2) use of the road are evaluated in the EIS, e.g., sediment from motorized use of the ford (motorized use by the public of the rest of the road would not contribute any meaningful sediment to Lyon Creek, i.e., only tiny amounts of minute particles from fugitive dust).

TRAN 6:

Engineering and liability issues likely preclude public use of the existing private bridge which accesses the Lyon Creek property in full-sized vehicles. One alternative might be allowing pedestrian or mountain bike use of this bridge.

Response:

Under the land exchange action alternatives the bridge would be donated to Custer County by TCMC. However, the BLM would ask the Custer County Commissioners to consider allowing the bridge to be used by the public on foot or on bicycles.

7.3.18. Hazardous Materials and Solid Waste (HAZ)

There were no comments on hazardous materials and solid waste related to the land disposal.

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