WESTERN MINING ACTION PROJECT

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Via Email

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To: Objection Reviewing Officer,
USDA Forest Service, Northern Region,
200 East Broadway,
Missoula, MT, 59801
email: appeals-northern-regional-office@fs.fed.us

Re: Montanore Project Objection

I. INTRODUCTION

Pursuant to 36 CFR Part 218, Earthworks, Rock Creek Alliance, Save Our Cabinets, and the Clark Fork Coalition (collectively Objectors), by their undersigned attorneys, file this Objection to the March 2015 Final EIS and Preliminary/Draft Record of Decision (DROD) issued by Forest Supervisor Christopher Savage for the Montanore Project (Mine or Project). The FEIS and DROD are contained in the USFS webpage at: http://www.fs.usda.gov/projects/kootenai/landmanagement/projects. This Objection is being submitted via email. Due to the size of the documents referenced in this Objection, a computer disc with the documents is being mailed contemporaneously to the Regional Office.

All of the Objectors filed comments on the Draft EIS on or about July 29, 2009, and on the Supplementary Draft EIS on or about December 21, 2011, and have fully participated in the USFS review of the Project. As such they are proper Objectors under Part 218. Pursuant to 36 CFR 218.8, the Objectors state that the following content of this Objection demonstrates the connections between the 2009 and 2011 comments noted above (or "previous comments") for all issues raised herein, unless the issue or statement in the DROD or FEIS arose or was made after the opportunity for comment on the DEIS or Supplementary DEIS closed, as detailed herein.

Pursuant to Part 218, Earthworks is the lead objector. Contact person: Bonnie Gestring, Earthworks, 140 South 4th St. West, Missoula, MT 59801, bgestring@earthworksaction.org, 406-549-7361. However, all Objectors are represented by their undersigned counsel and all U.S. Forest Service (USFS) correspondence regarding this Objection should be directed to the Objectors' attorneys at the address contained herein.

II. THE PROPOSED PROJECT WOULD VIOLATE NUMEROUS FEDERAL LAWS AND CANNOT BE APPROVED AS PROPOSED IN THE DRAFT ROD and FEIS.

As detailed herein, and as noted in the previous comments, the Project would violate numerous federal public lands, mining, environmental, wildlife, and related laws, regulations, and policies. As such, the USFS cannot approve the proposed Project or Plan of Operations (PoO), as amended by any of the action alternatives. These laws (with their implementing regulations and policies) include, but are not limited to: the Wilderness Act, the National Environmental Policy Act (NEPA) the National Forest Management Act (NFMA), Forest Service Organic Act of 1897 (Organic Act), the Endangered Species Act (ESA), Federal Land Policy and Management Act (FLPMA), and the Clean Water Act (CWA).

The remedy for these violations is for the USFS to not issue any Final ROD that would authorize approval of any PoO (i.e., the USFS must deny/reject any such PoO) for any action alternative reviewed in the FEIS that does not fully comply with each and every law, regulation, and policy noted herein. The Regional Office must vacate and remand the FEIS and DROD back to the Kootenai National Forest with instructions to correct all errors noted herein before the USFS can consider approving any operations at the site. At a minimum, a revised Draft EIS must be prepared for full public and agency review under NEPA.

The following additional Objection issues were raised in the previous comments and are discussed here in no particular order of importance. As such, pursuant to the Administrative Procedure Act, 5 U.S.C. §553-706, and USFS requirements, the Regional Forester's Office must provide a detailed response to each of the issues/objections raised in this Objection.

III. SPECIFIC OBJECTION ISSUES

A. FEIS FAILS TO PROVIDE BASELINE DATA NECESSARY FOR TAILINGS IMPOUNDMENT DESIGN AND SITING AND FAILS TO FULLY EVALUATE THE POTENTIAL EFFECTS OF THE TAILINGS IMPOUNDMENT UNDER PROPOSED ALTERNATIVE 3.

As reflected in our comments (p. M-297 - 301, Volume 3, FEIS) and herein, we continue to be deeply concerned that the tailings facility design for the preferred alternative (alternative 3) is conceptual only; the environmental affects of the tailings pond have not been fully determined; the structural stability of the proposed tailings impoundment facility is unknown and basic baseline data to determine the feasibility of the tailings impoundment preferred alternative has not yet been collected. This is critical information with broad implications for the mine plan and for evaluating environmental impacts of the mine alternatives. As such, the FEIS and DROD violate NEPA and the USFS's substantive environmental protection mandates noted herein.

For this and all aspects of the Project as noted herein, detailed baseline analysis is required under NEPA. The agency is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the

baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

> "NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made." LaFlamme v. FERC, 842 F.2d 1063, 1071 (9th Cir.1988) (emphasis in original). Once a project begins, the "pre- project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. Id. Without establishing the baseline conditions which exist in the vicinity … before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.

Half Moon Bay Fisherman's Mark't Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988). "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

Such baseline information and analysis must be part of the revised Draft EIS and be subject to public review and comment under NEPA. The lack of an adequate baseline analysis fatally flaws an EA. "[O]nce a project begins, the pre-project environment becomes a thing of the past and evaluation of the project's effect becomes simply impossible." Northern Plains v. Surf. Transp. Brd., 668 F.3d 1067, 1083 (9th Cir. 2011). "[W]ithout [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fail[s] to consider an important aspect of the problem, resulting in an arbitrary and capricious decision." Id. at 1085.

Although the company submitted a detailed engineering design and 585-page site investigation analysis for the Little Cherry Creek tailings impoundment (alternative 2),[1] which was evaluated in the FEIS analysis, similar information and analysis isn't available for the Poorman tailings dam (the preferred alternative). According to the FEIS, *"the design developed for project facilities in Alternatives 3 and 4, such as the Poorman tailings impoundment site, is conceptual and is based on limited geotechnical investigations."* (p. 132 Volume 1, FEIS)(emphasis added). A detailed site analysis must be completed to confirm whether the Poorman Tailings Impoundment site is geotechnically suitable and supported by sound engineering design.

The FEIS clearly states that, "the Poorman Tailings Impoundment Site would not provide sufficient capacity for 120 million tons of tailings without a substantial increase in the starter dam crest elevation if tailings were deposited at a density proposed in Alternative 2." (p. 147 Volume 1, FEIS). The FEIS also acknowledges that there is insufficient geotechnical data to demonstrate alternative 3 will be stable over short and long-term, and that additional site information is needed to complete the final design for the Poorman Tailings Impoundment Site, including:

[1] Klohn Crippen Consultants Ltd., Draft Montanore Project Tailings Technical Design Report, Submitted to the KNF and DEQ, November 2005.

- an assessment of artesian pressures and their potential influence on impoundment stability,
- an assessment of a subsurface bedrock ridge between Little Cherry Creek and the effect it may have on pumpback well performance,
- aquifer pumping tests to refine the impoundment groundwater model and update the pumpback well design,
- and site geology to identify conditions such as preferential pathways that may influence the seepage collection system, the pumpback well system, or impoundment stability.

Based on these data, the FEIS states that a preliminary design of the facility sites would need to be completed to confirm the site layout and design/operation feasibility. Field studies would be completed to collect data and material samples necessary for the final design.

The field studies outlined in the FEIS as part of the tailings impoundment design process would include "*a site reconnaissance and a drilling and sampling program to evaluate: site geology and foundation conditions, groundwater conditions and water quality, borrow material availability, geotechnical characteristics of foundation and borrow materials."* (p. 132 Volume 1, FEIS) (emphasis added).

The FEIS also states that the depth to bedrock is not well defined with the Poorman site. (p. 550 Volume 1, FEIS) and it is not known whether the low permeability fine-grained material in the Poorman Tailings Impoundment Site is laterally connected to the glaciolacustrine type deposits found in the Little Cherry Creek drainage. (p. 550 Volume 1, FEIS). No aquifer tests were performed on the fine-grained deposits in the Poorman Tailings Impoundment Site.

In the agency's response to comments, it states that the level of design for all project facilities was appropriate for an environmental analysis under NEPA and MEPA.

> The level of design for all project facilities was appropriate for an environmental analysis under NEPA and MEPA. Section 2.55.3.5.2. of the DEIS and SDEIS and Section 2.5.2.5.3 of the FEIS discussed the final design process of the KNF's preferred mine alternative (Alternative 3). Any effects not disclosed in the FEIS that were anticipated during final design would be subject to additional NEPA/MEPA analysis.

FEIS at M-298.

This is legally deficient under NEPA. It is impossible to evaluate the potential impacts of the Poorman tailings impoundment facility (the preferred alternative), and compare to other alternatives, when the plans considered by the FEIS are conceptual only. A preferred alternative should not be approved without sufficient information to determine whether that alternative is feasible, stable, and what the potential effects will be to surface water, groundwater, and other resources.

It is accepted practice of the USFS to conduct detailed geotechnical and related analysis of potential tailings sites prior to the completion of the FEIS for the main mine. Indeed, that is what National Forests in Arizona and Colorado are currently doing. For example, for the Resolution Copper Project, the agency recently issued an Environmental Assessment to determine the

baseline characteristics of the tailings and related facilities. *See* Tonto National Forest, "*Preliminary Environmental Assessment, Resolution Copper Mining Baseline Hydrological and Geotechnical Data Gathering Activities Plan of Operations, March 2015*" (attached). *See also* Tonto NF, *Preliminary EA Scoping Comment and Response Report, March 2015* (attached), where the USFS stresses that such baseline analysis is required before the agency can consider the main mine.

The GMUG National Forest in Colorado is undertaking the same baseline analysis to determine the geotechnical and related aspects of tailings and mine facilities prior to reviewing the main mine.

> U.S. Energy Corp (U.S. Energy) has prepared this updated Baseline Data Collection and Groundwater Investigations Plan (Plan) dated 8-8-14 for the United States Forest Service (USFS), for review in conformance with 36 CFR Part 228 Subpart A (Locatable Minerals) and in support of a Plan of Operations (POO) for surface-disturbing activities associated with investigation-well construction and geotechnical borings. This Plan has been developed to facilitate National Environmental Policy Act (NEPA) review of the proposed Mt. Emmons Project, and is designed for use during 10 years of data gathering.

U.S. Energy Corp., *Baseline Data Collection and Groundwater Investigations Plan of Operations* at 2 (attached). *See also* Letter from Gunnison Ranger District to U.S. Energy Corp. regarding need for USFS environmental review of proposed baseline analysis for tailings and related areas for large molybdenum mine, dated Sept. 11, 2014 (attached); Emails on the Mt. Emmons project dated July 31, 2014 to/from USFS, Mortenson and Wehrli (attached)(noting that Baseline data is … also needed to do any NEPA analysis on the Mine PoO.).

Thus, for the Montanore Project, due to the admitted lack of baseline information regarding the tailings and other facilities, the USFS must do here what is doing elsewhere in the West. Although of course every mine proposal is different, the accepted USFS practice at modern large mining projects must be followed in this case.

As noted by the Tonto National Forest, analysis of the geotechnical and other aspects of the tailings facility is part of the "logical sequence" of mine review by the USFS. The gathering if such information is the "logical sequence of activities." Tonto NF, *Preliminary EA Scoping Comment and Response Report, March 2015* at Table 2-6 (attached). The Forest relied upon the "Forest Service Handbook 2809.15, Minerals and Geology, Chapter 10" (incorporated by reference herein into the record for this Objection). "Resolution's Baseline Plan would provide baseline information on hydrologic, geochemical, and geotechnical data. … This information would be used to inform later, separate actions and proposals related to Resolution's proposed General Plan of Operations." Tonto NF, *Preliminary EA Scoping Comment and Response Report, March 2015* at Table 2-6 (attached).

This is the same type of "baseline information on hydrologic, geochemical, and geotechnical data" that the Montanore FEIS admits is lacking, and is only proposed to be obtained in the future as noted herein.

It is well established that the Forest Service must reject an unreasonable PoO, especially one without the required baseline and other aspects of the tailings and other facilities noted herein. "[T]he Forest Service clearly has the power to reject an unreasonable plan, and to impose conditions on the mining activity." Baker v. United States Department of Agriculture, 928 F. Supp. 1513, 1518 (D. Idaho 1996). The "reasonableness" of the PoO and the duty of the agency to protect resources are expressly linked together. According to the agency's mining regulations, upon receipt of a plan of operations: "[t]he authorized officer shall … analyze the proposal, considering the economics of the operation along with the other factors in determining the reasonableness of the requirements for surface resource protection." 36 CFR § 228.5. It is impossible for the agency to adequately process the PoO, and to adequately involve the public in that review, when critical plans and information are missing.

The current PoO (and FEIS and DROD) are not "reasonable" because they are clearly incomplete. The applicant has not submitted a detailed mining plan of operation as required by 36 CFR § 228.4(c)(3) & (d), § 228.8, and § 228.12 and as defined by § 228.3(a). Among these requirements is the mandate that the PoO must include:

> Information sufficient to describe or identify the type of operations proposed and how they would be conducted, the period during which the proposed activity will take place, and the measures to be taken to meet the requirements for environmental protection in § 228.8.

36 CFR § 228.4(c)(3). "The plan of operations shall cover the requirements set forth in paragraph (c) of this section, as foreseen for the entire operation for the full estimated period of activity." 228.4(d).

"Operations" is defined to include "[a]ll functions, work, and activities in connection with prospecting, exploration, development, mining or processing of mineral resources." 228.3 (a). A mining plan of "operations" is thus incomplete and unreasonable when it does not contain all necessary plans for "operations" as defined by the agency itself.

The agency has the authority, and indeed the obligation, to delay or deny consideration of the PoO until it has received all relevant information about necessary aspects of the mine plan.

> The [agency] may require information beyond that submitted with an initial MPO [Mining Plan of Operations]. **"[I]nsofar as [the agency] has determined that it lacks adequate information on *any* relevant aspect of a plan of operations, [the agency] not only has the authority to require the filing of supplemental information*, it has the obligation to do so.*"** Great Basin Mine Watch, 146 I.B.L.A. 248, 256 (1998).

Center for Biological Diversity v. U.S. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010) (emphasis added).

Pledges from the USFS and MMC that this information will come in the future are clearly inadequate under NEPA, the Organic Act, and Part 228 regulations. "Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. 40

C.F.R. § 1500.1(b). General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." Western Watersheds Project v. Kraayenbrink,632 F.3d 472, 491 (9th Cir. 2011).

Indeed, the federal court reviewing the USFS's approval of the Rock Creek Mine specifically held that the agency cannot rely on future submittals of important information to cure the lack of information in the FEIS. In Rock Creek Alliance v. U.S. Forest Service, 703 F.Supp.2d 1152, 1180 (D. Mont. 2010), the court held that the FEIS violated NEPA in part, "because additional surveys are needed to better understand bull trout populations and the amount and condition of spawning habitat." The court also held that: "The Forest Service may not address a deficiency in an environmental impact statement through the issuance of a supplemental information report." Id.

The EPA was strongly critical of the lack of important information regarding the Poorman site and proposed tailings facility. FEIS at M-84 to 85. In response, the FEIS acknowledged the lack of information but insisted "that the final design process for the Poorman Impoundment Site would include geotechnical field studies during final design to characterize the Poorman site with respect to possible preferential pathways and the specific nature of the bedrock between the Poorman and Little Cherry Creek watersheds." FEIS at M-85.

Regarding the adverse impact to the Little Cherry Creek wetlands and area hydrology caused by the pumpback wells in the area, EPA also raised serious concerns. FEIS at M-87. In response, again, the USFS relies on future baseline analysis as the means to ascertain critical conditions at the site:

> A **possible** subsurface bedrock ridge and hydrologic divide **may occur** south of Little Cherry Creek. This bedrock ridge **may create** a hydrologic divide between the impoundment sites and wetlands on the other side of the bedrock ridge. **If** a subsurface bedrock ridge and hydrologic divide at this location were confirmed, the pumpback wells would not affect the wetlands between the bedrock ridge and Little Cherry Creek. **Additional subsurface data would be collected during the final design process of the Poorman Impoundment to assess the bedrock ridge and the 3D model would be rerun to evaluate the site conditions with the new data. Any areas within the modeled drawdown area not surveyed for wetlands would be surveyed.**

FEIS at M-87 (emphasis added). Indeed, the FEIS relies on this "possible subsurface bedrock ridge" as the rationale for concluding that the pumpback wells would not affect the protected wetlands near Little Cherry Creek. FEIS at M-78.

Yet EPA noted that: "The SDEIS does not disclose the potential indirect impacts of this drawdown to 14.7 acres of CWA jurisdictional wetlands and 0.31 acres of non-jurisdictional wetlands in the Little Cherry Creek area, north of the Poorman Tailings Impoundment." FEIS at M-78. EPA also raised significant concerns about the proposed on-site mitigation to the loss wetlands via the USFS's proposed "'South Little Cherry Creek' site and the 2-acre 'Gravel Pit' site, [which] are located within the area of predicted groundwater drawdown." FEIS at M-78.

In response, the USFS acknowledges that the mitigation plan for the loss of wetlands depends on "an apparent subsurface bedrock ridge that separates groundwater flow between the watershed of Little Cherry Creek from those of drainages 5 and 10 of the Poorman Impoundment Site." Yet the actual existence of this "apparent" geologic feature has yet to verified – and will only be done long after the FEIS and ROD are approved:

> The KNF retained the three Little Cherry Creek sites and the Gravel Pit site as mitigation for isolated wetlands. The KNF recognizes that the proposed sites are within the drawdown area of the pumpback wells as predicted by the 3D tailings impoundment groundwater model. Section 3.10.4.2 of the FEIS indicated operation of a pumpback well system **may not affect** water levels and five of the springs south of Little Cherry Creek **because of an apparent subsurface bedrock ridge that separates groundwater flow between the watershed of Little Cherry Creek from those of Drainages 5 and 10 in the Poorman Impoundment Site** (Chen Northern 1989). As the SDEIS and FEIS discussed (FEIS section 2.5.2.5.5), **the model would be rerun after MMC collects additional data in the Poorman Impoundment Site.** The KNF also retained the three Little Cherry Creek sites and the Gravel Pit site as mitigation for isolated wetlands because many of the isolated wetlands are supported by surface water and not groundwater. Developing the three Little Cherry Creek sites and the Gravel Pit site as wetland mitigation sites concurrent with impoundment construction would allow soils from wetlands to be filled to be used at the mitigation sites, further enhancing their mitigation success. **After the 3D model has been rerun, MMC would reevaluate the feasibility of the three Little Cherry Creek sites and the Gravel Pit site as mitigation for isolated wetlands. Should one or more of the sites be determined to infeasible, MMC could develop similar sites north of Little Cherry Creek where groundwater drawdown would not occur.**

FEIS at M-78 (emphasis added).

As noted herein, such post-FEIS analysis does not satisfy NEPA's mandate that such information be submitted for public and agency review prior to the close of the NEPA public comment period. In addition, this admits that the USFS's rationale in support of compliance with its duties to protect wetlands under the CWA, Organic Act/228 regulations, and Executive Order 11990 (wetlands protection), is based on the "apparent subsurface bedrock ridge" whose actual existence is unknown.

The agency's decision to complete the NEPA process and any approval of the ROD based on such unsupported assumptions violates not only NEPA and these substantive environmental laws/regulations but represents the type of arbitrary and capricious decision that cannot withstand judicial review. "The purpose of an EIS is to obviate the need for speculation by insuring that available data are gathered and analyzed prior to the implementation of the proposed action." Nat'l Parks Conservation Ass'n v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001). "Agencies shall insure the professional integrity, including the scientific integrity, of the discussions and analyses in environmental impact statements." 40 C.F.R. §1502.24.

Furthermore, the agency's response to comments states that any effects not disclosed in the FEIS

anticipated during final design would be subject to additional NEPA/MEPA analysis. This violates NEPA because "NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 CFR § 1500.1(b). "NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment. Rather, it is designed to require such analysis as soon as it can reasonably be done." Kern v. BLM, 284 F.3d 1062, 1072 (9th Cir. 2002). NEPA "guarantees that the relevant information will be made available to the larger audience" before completion of the FEIS. Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 642 (9th Cir. 2010).

The FEIS also illustrates the inadequacy of the analysis of the Poorman Tailings Dam in its comparison of site capacity for all alternatives. The FEIS acknowledges, once again, there isn't sufficient information to know whether the thickened tailings, called for in Alternative 3, are even feasible. And, if not, it states that the entire alternative would have to be reconsidered.

> **In the event it is demonstrated that the tailings could not be thickened in a reasonable manner, the suitability of Alternative 3 tailings facility would have to be re-evaluated and compared to Alternative 2.** Expansion of impoundment capacity beyond the proposed layout would require modifications in the original design or in the design and construction of the dam crest sometime after operations began. The perimeter area for extending the toe of the dam and continuing raises per design to increase capacity is limited beyond the proposed footprint. Potential alternatives for dam crest raises would include over-steepening the downstream slope in subsequent raises or designing a modified upstream raise of the crest. Depending upon the characteristics of the thickened tailings, upstream deposition patterns and discharge elevations could also be modified to increase storage capacity.

FEIS at 757 (emphasis added).

The requirements for seepage collection from the Poorman Tailings impoundment also differs from the Cherry Creek site, as described in the FEIS: "Due to the wide footprint of the dam face the Poorman Impoundment Site would require a more extensive seepage collection system. In addition, there would be less room downstream of the dam footprint to install a pumpback well system or other seepage interception systems between the dam toe and private property not owned by MMC." FEIS at 756. Yet, there is no final design for the seepage and pumpback system so that its effectiveness at protecting water quality can be fully evaluated. As noted herein, the effectiveness of such mitigation measures must be fully analyzed and subject to public review under NEPA.

The FEIS also acknowledges that ten additional springs or seeps were identified in the Poorman Tailings Impoundment site in 2011, but the flow rate of these springs has not been measured. FEIS at 551.

This baseline information and analysis is essential to determining the stability of the site, as well as the potential effects of seepage to groundwater and surface water. The failure to provide this data and analysis violates NEPA because it is essential to evaluating the feasibility of the proposed tailings impoundment site, stability of the tailings dam, and the potential effects of the

proposed tailings dam to surface and groundwater before a decision is issued in the ROD that would make a final determination on the preferred alternative.

The inadequacy of the tailings facility analysis is further illustrated in the stability analysis discussion, where it acknowledges that the Poorman tailings dam concept doesn't meet the minimum factor of safety.

> The one case that did not meet the minimum was the pseudo-static analysis of the cyclone sand dam assuming reduced shear strength values. The estimated FOS was greater than 1.0 (*i.e.*, not indicating a likely slope failure), but was lower than the minimum allowable FOS. Impacts of failure of the tailings slope would be similar to liquefaction of the tailings slope as discussed in the following paragraph. Liquefaction potential of the tailings slope deposited at the rear of the impoundment was not considered in the stability review, although recently deposited tailings are subject to liquefaction. The volume of the liquefied mass located at the rear of the impoundment is critical to impoundment stability only if the available storage volume within the impoundment at the dam crest elevation were less than the volume of the liquefied tailings *and* if all of these liquefied tailings were to move *en* masse as a uniform debris flow from the back of the impoundment, down into the impoundment area, and towards the dam. This would not be a critical issue until near the end of the Year 16 of operations. **At the end of Year 16, mud wave action from the liquefied tailings and displacement of water stored in the impoundment could result in the overtopping of the embankment crest and possible breach of the dam. This potential for release of tailings from the impoundment may be the most critical situation related to Alternative 3.** *Such a failure mode has not been quantified but should be included in the final design of the facility*. The primary mitigation measure would be increased dam freeboard above the storage level of the tailings. This situation would be most critical in the later years of operations, as it is possible that tailings would not be stored very far above the dam crest until after Year 10 of operations.

FEIS at 752 (emphasis added).

The FEIS has also not used the most conservative figure for the maximum credible earthquake or peak acceleration. FEIS at M-297. In the response to comments, the FEIS states "The final design process would include reexamination of static and seismic analyses using standard methodologies to ensure the estimated PGA is the most appropriate value for the Montanore site and for construction of a high hazard dam. The final design would also undergo a peer review." FEIS at M-298. Yet this illegally avoids the NEPA process, whereby the public should have the opportunity to comment on this important issue.

The potential effects of a full or partial tailings failure should be fully evaluated in the NEPA process, and disclosed to the public, given the significance of the downstream resources at risk and the results of the stability analysis.

This is particularly important in light of the recent tailings pond failure at the Mount Polley Mine in British Columbia, which released roughly 25 million cubic meters of mine tailings into the Fraser River watershed in 2014. A panel of experts, which released a report in January 2015, concluded that the dam failed because of a faulty design that didn't account for the instability of the glacial till on which it was constructed. *See* Independent Expert Engineering and Review Panel, Report on Mount Polley Tailings Storage Facility Breach, January 30, 2015 (attached). Available at: https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf The USFS must fully review this Report and ensure that any of the conditions or aspects of the tailings at Mount Polley are not found at Montanore.

Given that tailings storage facilities must remain on the landscape in perpetuity, the panel issued strong recommendations for the use of best available technology at new tailings storage facilities, calling for the use of dry or filtered tailings to reduce the potential for catastrophic dam failure. The Panel emphasized the need to move away from a system where cost overrides public safety. "Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor." The panel also recommends that this type of analysis must be done at the earliest stages of mine permitting.

As the FEIS acknowledges, dry/filter/cake tailings deposition is both environmentally preferable and safer:

> The primary advantage is that water recovery increases as part of the process in preparing the thicker slurry densities, thus reducing make-up water requirements and the amount of excess water stored in the impoundment. In addition, **high-density tailings and dewatered/filter tailings are generally more dense at deposition, consolidate to a higher density more rapidly than slurry tailings, and can be used to create a more stable tailings embankment.** As a result of the lower water content and increased density, the shear strength generally increases over slurry tailings. Tailings surface slopes are generally steeper and more stable than the slurry tailings. In some cases, this allows for the tailings to be deposited from up gradient slopes at an elevation above the level surface of the tailings. Depending upon the native ground slope, and the impoundment geometry, high-density to dewatered and filtered tailings can be discharged from a higher elevation to create a slope of tailings above the normal impoundment level. **Such deposition along with increased density in the placed tailings can be used to develop a deposition plan to reduce the required impoundment capacity, lower the dam crest, and possibly reduce the impoundment footprint.**

FEIS at 256 (emphasis added).

Overall, in addition to failing to meet NEPA's baseline analysis requirements, the agency's permit-first, review later approach to the tailings and other issues raised herein violates NEPA. "The purpose of an EIS is to obviate the need for speculation by insuring that available data are gathered and analyzed prior to the implementation of the proposed action." Nat'l Parks Conservation Ass'n v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001). "[T]he "hard look" must be taken before, not after, the environmentally-threatening actions are put into effect." Id. at 733.

"NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 CFR § 1500.1(b).

NEPA regulations also require that the FEIS obtain the missing "quantitative assessment" information:

> When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.
> (a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.
> (b) If the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:
> (1) A statement that such information is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

40 CFR § 1502.22. As held by the Ninth Circuit:

> An agency must take into account all "reasonably foreseeable significant adverse effects" of the proposed action in its analysis of environmental effects. 40 C.F.R. § 1502.22; *see also id.* § 1508.7. NEPA also requires an agency to analyze missing and incomplete information. As we explain in greater detail below, an agency must either obtain information that is "essential to a reasoned choice among alternatives" or explain why such information was too costly or difficult to obtain. *Id.* § 1502.22.

Native Village of Point Hope v. Jewell, 740 F.3d 489, 493 (9th Cir. 2014). "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under § 1502.22(b)." Id. at 499. "[W]hen the *nature* of the effect is reasonably foreseeable but its *extent* is not, we think that the agency may not simply ignore the effect. The CEQ has devised a specific procedure for 'evaluating reasonably foreseeable significant adverse effects on the human environment' when 'there is incomplete or unavailable information.' 40 C.F.R. § 1502.22." Mid States Coalition for Progress v. Surface Transportation Board, 345 F.3d 520, 549-550 (8th Cir. 2003)(emphasis in original).

B. FEIS FAILS TO PROVIDE SUFFICIENT INFORMATION TO DETERMINE WATER MANAGEMENT AND TREATMENT, OR EVALUATE THE EFFECTS TO WATER QUALITY, FROM POORMAN TAILINGS SEEPAGE

As discussed in our comments (M-235, Volume 3, FEIS) and herein, critical aspects of water management have not yet been determined, and as a result, the effects of various alternatives cannot be appropriately analyzed. As noted above, this violates NEPA's requirements for a full baseline analysis as well as the prohibition against deferring important analysis and information gathering until after the DEIS/FEIS public comment process is completed.

The FEIS states that:

> Using thickened tailings may affect the ability to use the tailings impoundment as a reservoir to maintain a water balance. In final design, MMC would reevaluate the water balance and the tailings deposition plan. One option would use the drainage in the northern end of the impoundment are as a dedicated water storage area and readjust the dam alignment and deposition plan. A second option would be to use the Seepage Collection Pond for excess water storage. At present, Alternative 3 water balance assumes that all collected water would be returned to the impoundment and no water storage would occur in the Seepage Collection Pond.

FEIS at 161.

Without appropriate analysis and design for the tailings impoundment facility and water management, the agencies cannot determine whether the tailings impoundment can be used for managing water, or whether some other option is needed altogether. This is a significant issue with broad implications that needs to be fully evaluated in this EIS, prior to a ROD. Without this information, it is impossible to adequately evaluate the various proposed alternatives, and understand the potential effects of each.

The FEIS also inappropriately relies on groundwater quality monitoring from the Little Cherry Creek site when analyzing the potential impacts to ground and surface water from seepage at the Poorman Tailings Impoundment. "Water quality in a well in the Little Cherry Creek Impoundment Site was used to represent ambient concentrations at both impoundment sites." (p. 673 FEIS, Volume 1). Without actual data from the Poorman Creek Tailings impoundment site, it is impossible to accurately calculate the impacts to groundwater from mine seepage.

The FEIS also inappropriately relies on seepage rates from the Little Cherry Creek site for calculations at the Poorman Site analysis. According to the FEIS, "Seepage not collected by the underdrain is expected to flow to groundwater at a rate of about 25 gpm and, after the impoundment was reclaimed, slowly decrease to 5 gpm (Klohn Crippen 2005). The agencies used the same estimates for the Poorman Impoundment Site because of the similarity in the geologic conditions and in the proposed underdrain system at both sites."

The FEIS assumes the seepage rates are the same, but that may be incorrect given the use of thickened tailings at the Poorman site, the difference in size and potential differences in geologic

and soil conditions beneath the Poorman impoundment, which have not been determined.

Depth to bedrock is not well defined with the Poorman site, (p. 550 Volume 1, FEIS), and it is not known whether the low permeability fine-grained material in the Poorman Site is laterally connected to the glaciolacustrine type deposits found in the Little Cherry Creek drainage. (p. 550 Volume 1, FEIS). No aquifer tests were performed on the fine-grained deposits in the Poorman Tailings Impoundment Site.

The FEIS also indicates that seepage controls differ between the two sites:

> Alternative 2 – Seepage control in Alternative 2 would be provided primarily by collection drains in the impoundment and the dam foundation. The estimated seepage loss to groundwater is 25 gpm into the foundation footprint. Additional design components to reduce seepage losses would include an increased density of the impoundment drainage system, a pumpback well system between the dam and Seepage Collection Pond, or a deeper cutoff trench below the starter dam and under the saddle dams. Seepage interception would be facilitated by the cross-valley dam design. Seepage interception would be more difficult south of the South Saddle Dam, which would be immediately adjacent to the Diversion Channel. **A coarse-textured paleochannel under the impoundment may capture and transmit more tailings water seepage than modeled in the seepage analysis.**
>
> Alternative 3 – Seepage control in Alternative 3 would be similar to the Alternative 2 design for seepage control. It is assumed that the average seepage loss would be about 25 gpm as in Alternative 2. The potential for additional seepage control is similar to Alternative 2 and would employ the same alternatives. **Due to the wide footprint of the dam face the Poorman Impoundment Site would require a more extensive seepage collection system. In addition, there would be less room downstream of the dam footprint to install a pumpback well system or other seepage interception systems between the dam toe and private property not owned by MMC.** (emphasis added).

FEIS at 673 (emphasis added). In its response to comments, the FEIS states that:

> The design criteria for the Little Cherry Creek tailings impoundment is described in the 2005 Klohn Crippen Tailings Technical Design Report, starting on p. 70. The same criteria would be used for the Poorman impoundment site. Section 5.5.1 of that report indicates "the impoundment freeboard during operations will include the following: storage of 20 days of tailings discharge; storage of the design flood, which is the runoff from the two week Probable Maximum Precipitation (PMP) plus snowmelt; and freeboard of 3 feet above peak flood water surface." The agencies' review of the design criteria proposed for the Little Cherry Creek Site and applicable to the Poorman Site were appropriate and could be met at each site. Section 2.5.4.3 of the DEIS and FEIS described the options for maintaining sufficient water for mill use. MMC's proposed Plan of Operations includes a spill prevention and containment plan.

FEIS M-235.

This is inadequate. As noted herein, it is not enough to provide generalized design criteria. The FEIS must include an appropriate level of detail and analysis of the tailings pond facility, water balance and water management to understand the potential impacts of the proposed alternatives and provide accurate comparisons. Also, as noted herein, the lack of information and analysis of baseline conditions violated NEPA.

As expressed in our comments (FEIS at M-242), we also remain concerned about the effects of fugitive dust from the tailings pond on water quality.

In the response to comments, the FEIS states that "Section 2.5.4.2.2 was revised to include a discussion of dust control at the tailings impoundment. As a condition of the air quality permit, MMC would develop a general operating plan for tailings impoundment site including a fugitive dust control plan to control wind erosion from the tailings impoundment site." (M-243).

This is inadequate because it fails to provide any analysis of the potential effects and evaluate mitigation measures as part of the NEPA process. It defers this analysis and decision to a later point without public review.

C. THE FEIS FAILED TO CONSIDER A FULL RANGE OF ALTERNATIVES AND FAILED TO CONSIDER AND ENSURE LONG-TERM ENVIRONMENTAL, STABILITY AND PUBLIC SAFETY IN ITS ANALYSIS OF THE TAILINGS DAM

As discussed in our comments (FEIS at M-219) and herein, the FEIS failed to consider a full range of alternatives for tailings disposal, including backfill of tailings. NEPA requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(E); *see also* 40 C.F.R. § 1508.9(b). It must "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. 40 CFR § 1502.14(a). *See* City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9th Cir. 1990); Center for Biological Diversity v. Nat'l Hwy Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008). NEPA's implementing regulations recognize that the consideration of alternatives is "the heart of the environmental impact statement." 40 CFR 1502.14, *quoted in* Alaska Wilderness Recreation and Tourism Ass'n v. Morrison, 67 F.3d 723, 729 (9th Cir. 1995).

This is a critical analysis to conduct at this time in the NEPA process because it is not clear that the current tailings dam design is even feasible or structurally stable for the short, or long term. Furthermore, the use of tailings backfill and dry or filtered tailings may result in other significant benefits, such as reducing the risk of catastrophic tailings dam failure or reducing the long-term effects of groundwater drawdown.

This issue was also raised by the U.S. EPA in its 2011 comment letter:

> The *Final Tailings Disposal Alternatives Analysis Report* indicates that, compared to the tailings management plan in the DSEIS, the use of paste tailings could provide environmental benefits beyond the reduction of direct impacts to wetlands, including reduction of the tailings seepage volume. Surface disposal of paste tailings, which is in use elsewhere in the industry, involves removal of water from the tailings than what is

> currently proposed prior to storage in a tailings impoundment. It offers potentially significant benefits to surface water quantity and groundwater quality and warrants consideration in the FEIS. …
>
> The use of dry stack tailings management, in which tailings are dewatered to a lower moisture content than typical paste tailings and then returned to the mine void, could provide more environmental benefits than use of paste tailings. This technology would further reduce the footprint of the impoundment, seepage into groundwater and the need to pump and recapture groundwater. Because this option would eliminate or reduce the size of the surface tailings pond, it would necessitate change to water management. Dry stack tailings management is in use elsewhere in the mining industry.

FEIS at M-81 to 82.

The importance of tailings storage and design is highlighted by the recent tailings impoundment failure at the Mount Polley Mine in British Columbia in 2014. The BC Minister of Mines and Energy hired an independent panel of technical experts to determine the cause of the failure and make a series of strong recommendations to reduce the likelihood of further failures. The panel's report, released in January 2015, urged the use of best available technology for tailings impoundments at new mines to reduce the likelihood of catastrophic failures and better protect public safety and the environment. The panel identified the best available technology for tailings storage as the use of backfill to store tailings underground, and the use of dry tailings instead of wet tailings (i.e., eliminating water storage) for surface disposal. According to the panel, "The overarching goal of BAT is to reduce the number of tailings dams subject to failure. This can be achieved most directly by storing the majority of the tailings below ground—in mined-out pits for surface mining operations or as backfill for underground mines." *See* Independent Expert Engineering and Review Panel, Report on Mount Polley Tailings Storage Facility Breach, January 30, 2015, at 121-122 (attached). Available at: https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf. The USFS must fully review this Report and ensure that any of the conditions or aspects of the tailings at Mount Polley are not found at Montanore.

The panel emphasizes the need for emphasizing long-term stability and public safety in the analysis:

> The chief reason for the limited industry adoption of filtered tailings to date is economic. Comparisons of capital and operating costs alone invariably favour conventional methods. But this takes a limited view. Cost estimates for conventional tailings dams do not include the risk costs, either direct or indirect, associated with failure potential. The Mount Polley case underscores the magnitude of direct costs for cleanup, but indirect losses—notably in market capitalization—can be even larger. Nor do standard costing procedures consider externalities, like added costs that accrue to the industry as a whole, some of them difficult or impossible to quantify. Full consideration of life cycle costs including closure, environmental liabilities, and other externalities will provide a more complete economic picture. While economic factors cannot be neglected, neither can they

continue to pre-empt best technology.

Panel Report at 123. The panel concludes that "Safety attributes should be evaluated separately from economic considerations, and cost should not be the determining factor." Report at 125.

In the response to comments, the FEIS states "The analysis of backfilling of tailings was updated for the SDEIS in Section 2.13.3 and was discussed in the Tailings Disposal Alternatives Analysis (ERO Resources Corp. 2011a). Section 2.13.4 of the FEIS summarized the agencies analysis of backfilling of tailings." FEIS at M-220.

Yet a review of Section 2.13.4's discussion of dry/filter/cake tailings disposal, consisting of only a few sentences, focused on backfilling such tailings. Little to no discussion is found regarding use of dry/filter/cake tailings in the Poorman site and its environmental advantages. Although the FEIS mentions that "paste or filter tailings deposition would not likely reduce the impoundment footprint enough to substantially decrease the acreage of wetlands affected at the site," FEIS at M-217, this focuses only on the footprint (even if true).

No analysis is provided regarding how the reasonable alternative of placing dry tailings in the Poorman site will reduce the pumping needed for purported groundwater and surface water protection. As stated by the USFS to the EPA, "all seepage reaching groundwater would be collected by the pumpback system." FEIS at M-81. As noted above, this pumpback system has the significant potential to reduce water levels and negatively affect the wetlands in/along Little Creek Creek.[2]

At most, in response to EPA comments, the FEIS states that:

> Comment response 320-27 discussed that reducing the moisture content of the tailings, such as with the use of paste tailings or dry stack tailings would have no effect on groundwater pumping necessary because the rate of tailings seepage reaching groundwater would be independent of the tailings moisture content. Any indirect effects on wetlands from pumpback wells would be an unavoidable effect. In the agencies' monitoring plans (Appendix C.4), MMC would monitor springs and wetlands potentially affected by the pumpback well system, and develop appropriate mitigation should adverse effects be attributed to the pumpback wells.

FEIS at M-88. This response suffers from a number of NEPA and related problems.

[2] As noted above, the only arguable way that such losses to the Little Cherry Creek wetlands due to the pumping could be avoided would be if "an apparent subsurface bedrock ridge that separates groundwater flow between the watershed of Little Cherry Creek from those of drainages 5 and 10 of the Poorman Impoundment Site," FEIS at M-78, actually exists. As noted above, the USFS admits that the analysis to verify the "ridge" has yet to be performed. As such, it cannot be relied upon to argue that the wetlands will not be diminished or eliminated due to the pumping.

First, the USFS' main response, that there is no difference between seepage rates for thickened, past, or dry tailings is not supported by any scientific analysis. Indeed, this directly contradicts other sections of the FEIS which find that dry tailings, having less water content, necessarily result in less water in the tailings impoundment and thus less seepage. FEIS at 256. Second, reliance on Comment response 320-27 is inadequate, as that response focuses on the difference between paste and thickened tailings, with no analysis of dry stack tailings. Third, as detailed herein, reliance on future monitoring to detect wetlands impacts, with no current mitigation plan in place, violates NEPA. Lastly, simply stating that "Any indirect effects on wetlands from pumpback wells would be an unavoidable effect" does not satisfy the agency's substantive duties under the CWA, Organic Act and 228 regulations to prevent such adverse effects. As detailed herein, flows in Little Cherry Creek, and its associated wetlands and fisheries habitat must be protected – something which the USFS has not ensured here.

As the FEIS admits, regardless of the footprint differential between thickened, paste, and dry tailings, it is undisputed that use dry tailings will reduce the required pumping.

> The primary advantage is that water recovery increases as part of the process in preparing the thicker slurry densities, thus reducing make-up water requirements and the amount of excess water stored in the impoundment. In addition, high-density tailings and dewatered/filter tailings are generally more dense at deposition, consolidate to a higher density more rapidly than slurry tailings, and can be used to create a more stable tailings embankment.

FEIS at 256. As such, the USFS's failure to fully analyze this alternative violates NEPA. Further, at a minimum, due to the environmental advantages of dry tailings disposal, the agency is required to choose this alternative and/or mitigation measure to "minimize adverse impacts" under the Organic Act/228 regulations as well as fully protect wetlands and water quality under the CWA, the Organic Act/228, and Executive Order(s).

Regarding backfill of tailings, the FEIS dismisses the backfill alternative as uneconomic: "An economic assessment of paste backfill determined it would result in greater capital and operating costs than normally would be associated with room-and-pillar mining projects, and backfilling was eliminated from detailed analysis." FEIS at M-88. Yet, as noted herein, dismissing a reasonable and environmentally beneficial alternative simply because it would cost the operator more money is not a valid reason.

The lead agencies retained RCM Analytics, LLC to conduct an independent economic analysis that examined the effects on the internal rate of return of including a backfilling component in the mining sequence (RCM Analytics 2011). According to the FEIS:

> In order to fully evaluate the cost implications of backfilling a portion of the tailings, RCM Analytics compared operating costs and capital costs for an option using 100 percent surface disposal of tailings, and an option that incorporated a backfill operation in the mining sequence. Using data in the PEA, mine capital costs without backfilling are estimated at $392.7 million, and estimated plant, tailings impoundment, and ancillary facilities capital costs are $360.1 million for an initial

capital investment of $752.8 million. Because all of the tailings could not be placed underground, a surface impoundment would be necessary to accommodate the unbackfilled tailings, placing tailings underground would require infrastructure for both a backfill operation and a surface disposal operation. The estimated capital cost of a backfill system would add an additional $29.8 million, raising the initial capital requirements from $752.8 million to $782.6 million. RCM Analytics estimated Montanore's operating cost for mining, processing and refining to be $28.85/ton without backfilling and $35.87/ton with backfilling.

Using these cost data and the projected revenue of the Montanore Project, RCM Analytics also calculated an internal rate of return (IRR) for both scenarios. An IRR is a commonly used industry measure of project viability that incorporates both the cost and revenue components of an operation, and can provide insight into how a change in cost affects a project's return on investment. Companies frequently use IRR to determine whether a project is appropriate for investment: if a project's IRR does not meet a threshold rate of return set by the company, the project is not of interest. The required threshold rate of return is specific to a company so not all companies use the same rate. Based on RCM's preliminary assessment level economic analysis, which may vary by ±35 percent, partial backfilling at Montanore would reduce the IRR from 15.7 percent to 10.4 percent. RCM Analytic indicated that the 404(b)(l) Guidelines do not provide numerical criteria for determining what constitutes substantially greater costs for a particular type of project. RCM Analytic reported "a reduction in the rate of return from 15.7 percent down to 10.4 percent strongly suggests that requiring the backfilling of tailings would result in significantly greater capital and operating costs than would normally be associated with room-and-pillar mining projects." **Based on RCM Analytic's analysis, the agencies eliminated backfilling from detailed analysis (ERO Resources Corp. 2011).**

FEIS Volume 3, Appendix L, p. 14. As noted herein, the USFS cannot reject an environmentally superior alternative and/or mitigation measure based on reduced costs to the operator. Even if the 1872 Mining Law governed (which as shown herein it does not for most aspects of the Project), the USFS clearly has the authority and duty to require the least damaging alternative and/or mitigation measure.

Indeed, the Ninth Circuit has affirmed the ability of the USFS to restrict mining even to the point that the project would no longer be economically viable. **"Virtually all forms of Forest Service regulation of mining claims—for instance, limiting the permissible methods of mining and prospecting in order to reduce incidental environmental damage—will result in increased operating costs, and thereby will affect claim validity**." Clouser v. Espy, 42 F.3d 1522, 1530 (9th Cir. 1994). *See also* Public Lands for the People v. U.S. Dept. of Agriculture, 697, F.3d 1192, 1198 (9th Cir. 2012)(upholding denial of access routes to mining claims in travel management plan). In fact, under the Mining Law itself, the expense associated with compliance with environmental regulations may so increase the cost of mining as to render a claim not valuable. United States v. Kosanke Sand Corp., 12 IBLA 282, 299 (1973); Great Basin Mine Watch, 146 IBLA 248, 256 (1998).

The NEPA analysis did not consider the various alternatives for tailings disposal based on long-term stability, public safety or for long-term reductions in groundwater drawdown. Given that tailings impoundments must last in perpetuity, this is an important analysis to consider in the EIS process, as well as impose the least-damaging alternative as a substantive matter. Furthermore, the NEPA analysis inappropriately rejects the dry tailings surface disposal, and backfill alternative for economic reasons, even though backfilling may reduce the risk of subsidence and reduce the length of groundwater drawdown on surface waters and reduce impacts to Wilderness.

D. FAILURE TO PROTECT SURFACE WATER BASEFLOWS AND AQUATIC LIFE WITH IMPROPER RELIANCE ON UNPROVEN MITIGATION MEASURES; FAILURE TO ANALYZE EFFECTIVENESS OF MITIGATION MEASURES

The FEIS predicts significant reductions in base flow in the Wilderness rivers, lakes and streams overlying the mine area due to groundwater drawdown resulting from the proposed Montanore Project as well as other critical habitat for bull trout and other fisheries. As described in our comments (M-266, M-333, and M336, Volume 3, FEIS) and herein, the FEIS does not contain viable mitigation measures to reduce the effects of groundwater drawdown on Outstanding Resource Waters in the Wilderness and other waters and the threatened bull trout and other aquatic life that they support.

The SDEIS and FEIS looked at potential mitigation measures to reduce those effects, including grouting and bulkheads. With respect to grouting, the agencies state in the response to comments (p. M-336) that "the effectiveness of grouting over the long term (i.e., 100 years or more) is uncertain. Fracture grouting of storage facilities typically use a design life of 50 years, and the effectiveness of grouting may decrease beyond 50 years. Because this mine would be of room-and-pillar design, grouting of fractures would be difficult, but technically feasible." Thus, grouting can only be considered an uncertain temporary mitigation that would prevent water inflows during mining, but would not protect and provide necessary mitigation to the wilderness hydrologic system in perpetuity, as it must.

"The agencies' evaluation of the constructed bulkheads … concluded that man-made concrete bulkheads would **unlikely** provide the necessary mitigation over the long-term." FEIS at 156 (emphasis added). It further states that, "There is limited information on functionality of hydraulic barriers once mining is completed, and there are no data on the design life of these structures." FEIS at 583.

In the FEIS, for the first time, the agency incorporated a new mitigation measure to try to offset the dewatering effects of the proposed mine. It proposes to use barrier pillars with constructed bulkheads in the underground tunnels, concluding that leaving a pillar of unmined rock with characteristics similar to the constructed bulkheads simulated in the modeling would likely provide the necessary mitigation over the long-term, again assuming the hydrologic modeling was representative of underground conditions." FEIS at 156.

The FEIS concludes that, "Leaving barrier pillars overcomes **some** of the limitations associated with constructed bulkheads, such as long-term effectiveness (Werner 2014). Although a constructed bulkhead would be made of concrete and grout and a barrier pillar would be made of

in-place unmined rock, they both would function in a similar manner to reduce the hydraulic conductivity between sections of the mine void. Consequently, the agencies considered the modeling of the bulkheads to be an equivalent simulation of the agencies' mitigation of leaving one or more barriers, if necessary, during the Operations Phase and constructing bulkheads at the access openings at closure." FEIS at 583 (emphasis added).

The agency's analysis and conclusions fail to meet the requirements of NEPA because there is no data to support the agency's conclusion that the barrier pillar with constructed bulkhead will last longer or be more effective than the constructed bulkheads. Importantly, this mitigation measure still ultimately relies on the long-term effectiveness of bulkheads.

At the outset, the USFS's reliance on the new "pillar" plan to accompany the original "bulkhead" plan has not been subject to proper public review under NEPA. The pillar proposal has only first been proposed in the FEIS, and was never subject to EPA or public review in either Draft EIS. This is especially problematic since the USFS now admits that the bulkhead plan is inadequate. The agency cannot rely on such critical information and mitigation without subjecting it to public and EPA review in a revised Draft EIS.

An agency must prepare a supplement to the draft EIS where, after issuance of the draft EIS, "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns." 40 C.F.R. § 1502.9(c)(1); *see* Dubois v. U.S. Dep't of Agriculture, 102 F.2d 1273, 1291-92 (1st Cir. 1996). A supplemental draft EIS must be circulated for public comment and filed in the same manner as an original draft EIS. 40 C.F.R. § 1502.9(c)(4). At a minimum, the addition of pillars as the means to mitigate against the dewatering, which the FEIS now relies upon to comply with the various laws protecting fisheries and water, is a "substantial change … that [is] relevant to environmental concerns" that the public deserves the opportunity to comment upon in a revised Draft EIS.

Further, the "pillar" part of the bulkhead/pillar plan has not even been submitted or planned yet. The USFS and MMC only commit to even begin to consider this plan until long after operations have started. "By the fifth year of operations, MMC would assess the need for barrier pillars to minimize post-mining changes in East Fork Rock Creek and East Fork Bull River streamflow and water quality." FEIS at 584. As shown herein, the USFS cannot rely on such a vague and unsupported plan to supposedly protect bull trout, fisheries, Wilderness lakes and waters, and other critical environmental resources, let alone one has not even been required (i.e., "MMC would assess the need" five years into operations) or that has never been subject to public review.

Even if the future pillar aspect of the bulkhead/pillar mitigation plan was valid under NEPA (which it is not), the only document cited in the FEIS discussion of the long-term efficacy of the mitigation alternatives categorically states that bulkheads are not proven to be effective in the long-term. Werner (2014)(attached) states that **"The long-term effectiveness of constructed low permeability bulkheads is not documented as there are no available data on service life for time horizons commensurate with the Post-Closure modeling scenario."** The FEIS, at 584, says the same thing.

Relying on Werner fails to support and undercuts the FEIS' conclusions. The proposed

mitigation measures are undemonstrated and it is therefore uncertain whether they will be able to effectively reduce the effects of groundwater drawdown and its subsequent impacts. The agency's decision to consider bulkhead modeling to be a reasonable equivalent simulation of the agencies' new mitigation proposal is unsupported. (See FEIS at 569-70). Whether alone or combined with barrier pillars, the use of bulkheads is flawed because their use is undemonstrated and unproven and their long-term efficacy is unknown. Rather than demonstrate the efficacy of bulkheads in the rock wall the FEIS actually undercuts the FEIS' conclusion that bulkheads are a demonstrated technology to control water.

The timeframes for re-establishing groundwater recharge of the mine void and steady state conditions are estimated by the groundwater modeling at over 1,000 years (See FEIS section 3.10.4.3.3, Post Closure Phase). Werner states that "Because the bulkheads would be installed within the mine and because access adits would be plugged well before any significant hydraulic head developed, there likely would be no practical means of monitoring or assessing whether the bulkheads would function as designed, or any options for taking corrective action if they proved to be ineffective post-closure. The inability to monitor the success of a bulkhead, or to remediate a potentially ineffective bulkhead would render its near-and long-term functionality unknown as an effective and reliable groundwater control system."

Werner (2014) goes on to say that the service life of concrete and grout is variable depending on the materials used in the concrete and grout mixes, construction specifications, and environmental conditions. As a result, there is no documented consensus on design life due to the multitude of variables affecting bulkhead longevity. A reasonable estimate is about 100 years. This timeframe coincides with the development of reinforced and special-mix concrete as a reliable building material. If 100 years is used for the bulkhead design life, then even before the bulkheads are subjected to the anticipated final hydraulic head, the concrete materials and grout would potentially begin to deteriorate and seepage through and around the bulkhead system could increase.

The FEIS fails to provide any supporting data to show that the proposed barrier pillars and constructed bulkheads will last longer or be any more effective than the bulkheads or grouting proposed in the SDEIS. The FEIS asserts that by leaving a wall of rock in place and using smaller bulkheads, it decreases the probability of failure. To the contrary, Werner (2014) makes it clear that a safe assumption is to expect failure within 100 years.

The FEIS actually raises more questions than it provides as answers regarding management of pressure (water head) with bulkhead and/or chambers. A primary unanswered question is whether the probability of total failure decreases as the pressure differential decreases between chambers? It seems likely that the overall pressure will equilibrate within and between bulkheaded chambers - but that will not reduce the total pressure that could build up. If one link in the bulkhead/chamber chain fails, it is reasonable to conclude that a significant flow path for groundwater could be the result. This is demonstrated by the FEIS modeling which showed that a handful of barrier pillars and plugs would significantly reduce the ground and surface water losses due to mine drainage. (FEIS at 575). This also strongly suggests that seepage through a plug or the fractures in a barrier pillar (e.g. due to blasting) could significantly increase the ground and surface water losses.

Yet the FEIS does not provide sufficient support to conclude with any reasonable certainty what is likely to happen. This includes, but is not necessarily limited to, pressure levels within bulkheaded chambers, pressure between bulkheaded chambers, or reasonable worst-case scenarios if one or more chamber/bulkhead should fail.

Regarding the efficacy of the rock wall, it is presumed to be sufficient but that is not demonstrated, particularly given the mining activities' potential to cause fracturing, etc. The FEIS fails to provide any supporting data to show that the proposed barrier pillars and constructed bulkheads will last longer or be any more effective than the bulkheads or grouting proposed in the SDEIS. The FEIS asserts that by leaving a wall of rock in place and using smaller bulkheads, it decreases the probability of failure. In fact, Werner (2014) makes it clear that a safe assumption is to expect failure within 100 years.

Werner (2014) identifies that the service life of concrete and grout is variable depending on the materials used in the concrete and grout mixes, construction specifications, and environmental conditions. The FEIS relies on many of Werner's conclusions - but the FEIS does not support its proposed design alternative(s) with design or other data that actually supports a conclusion that the rock wall and/or bulkheads in the rock will prove effective or durable. Werner's report cited by the FEIS instead underscores the multitude of variables affecting bulkhead longevity – meaning that it is highly likely that over time the concrete materials and grout would potentially begin to deteriorate and seepage through and around the bulkhead system would thereby increase.

The timeframes for re-establishing groundwater recharge of the mine void and steady state conditions are estimated by the groundwater modeling at over 1,000 years (See FEIS section 3.10.4.3.3, Post Closure Phase). Werner (2014) states that: "Because the bulkheads would be installed within the mine and because access adits would be plugged well before any significant hydraulic head developed, there likely would be no practical means of monitoring or assessing whether the bulkheads would function as designed, or any options for taking corrective action if they proved to be ineffective post-closure. The inability to monitor the success of a bulkhead, or to remediate a potentially ineffective bulkhead would render its near-and long-term functionality unknown as an effective and reliable groundwater control system."

Similarly, there is no way to know if the pillars would be effective. This makes the lack of any public review of the new pillar mitigation plan especially problematic under NEPA. As a result, the FEIS fails to demonstrate that the bulkhead/chamber design will actually work or prove durable -- and if a failure is detected it is largely impossible to correct the problem.

For a more detailed analysis of these issues and critique of the FEIS and USFS rationales, *see* Dr. David Chambers, "*Comments on the use of plugs in the Final Environmental Impact Statement for the proposed Montanore mine to mitigate long-term surface and groundwater losses*", May 5, 2015 (attached). Dr. Chambers' comments are adopted and incorporated as part of this Objection and must be fully addressed by the Regional Office.

Thus, the FEIS fails to demonstrate that there are any mitigation measures available to reduce the impacts of groundwater drawdown on the rivers, streams and lakes in the effected area though

out mine operations, closure and post-closure. And, the agency's decision to consider the modeling of the bulkheads to be an equivalent simulation of the agencies' new mitigation proposal is unfounded. The lack of any public review opportunity of the new pillar aspect of the bulkhead/pillar mitigation plan, let alone its effectiveness, is also a basic NEPA violation. As a result, the FEIS cannot rely on the proposed mitigation measure when determining the effects of dewatering on the Wilderness, groundwater dependent ecosystems, overlying Outstanding Resource Waters, and the effects to bull trout and other aquatic life that these waters support.

Regarding these purported mitigation measures, as well as the other mitigation measures relied upon by the USFS, the FEIS fails to provide the detailed analysis of the mitigation measures, including a detailed analysis of their effectiveness, as required by NEPA.

> [NEPA] does require that an EIS discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated." Methow Valley, 490 U.S. at 352, 109 S.Ct. 1835. An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. *Compare* Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) *with* Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 477 (9th Cir.2000) (upholding an EIS where "[e]ach mitigating process was evaluated separately and given an effectiveness rating"). The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. Methow Valley, 490 U.S. at 351–52, 109 S.Ct. 1835(citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009)(rejecting EIS for open pit mine for failure to conduct adequate review of mitigation and mitigation effectiveness).

E. THE FEIS and DROD FAIL TO ENSURE THAT NONDEGRADATION STANDARDS AND ALL CLEAN WATER ACT REQUIREMENTS WILL BE MET.

As expressed in our comments (p. M-380, M-332, and M-336, Volume 3, FEIS), the FEIS fails to ensure compliance with the nondegradation protections for the Outstanding Resource Waters. According to the FEIS, mining will result in reductions in stream flow in Outstanding Resource Waters – rivers and streams within the Wilderness Area. (Tables 94-97). These reductions in flows in Outstanding Resource Waters constitute degradation, which violates Montana's nondegradation protections and the Clean Water Act.

"Under the Montana Water Quality Act, no authorization to degrade may be obtained for outstanding resource waters, such as surface waters within a wilderness." FEIS at 593. Current nondegradation rules adopted pursuant to the Montana Water Quality Act provide that if an activity increases or decreases the mean monthly flow of a stream by less than 15 percent or the 7-day, 10-year (7Q10) low flow of a stream by less than 10 percent such changes are not significant for purposes of the statute prohibiting degradation of state waters (ARM

17.30.715(1)(a)).

The FEIS predicts that drawdown will result in reductions and/or increases in flows in the 7Q10 in a number of Outstanding Resource Waters ("ORW") that exceed the 10% threshold outlined in Montana's nondegradation policy. These streamflow alterations are "degradation" as defined in MCA 75-5-103(7), and therefore violate Montana's nondegradation policy, which prohibits any degradation of ORW. ARM 17.30.705(2)(c).

Under the Organic Act and USFS mining regulations, the agencies cannot approve any mining plan that may result in any exceedences/violations of any environmental standard. "Operator shall comply with applicable Federal and State air quality standards, including the requirements of the Clean Air Act, as amended (42 U.S.C. 1857 *et. seq*.)." 36 CFR 228.8(a); 228.8(b)(same, for water quality requirements/standards and the Clean Water Act).

In addition to the agencies' regulations, under the Clean Water Act (CWA) Section 313, the USFS cannot approve any activity that may result in a violation of a water quality standard.

> Under the Clean Water Act, all federal agencies must comply with state water quality standards, including a state's antidegradation policy. 33 U.S.C. § 1323(a). Judicial review of this requirement is available under the Administrative Procedure Act. Oregon Natural Resources Council v. U.S. Forest Service, 834 F.2d 842, 852 (9th Cir. 1987).

Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1153 (9th Cir. 1998). *See also* Marble Mountain Audubon Soc'y v. Rice, 914 F.2d 179, 182-83 (9th Cir. 1990); Oregon Natural Resources Council v. Lyng, 882 F.2d 1417, 1424-25 (9th Cir. 1989); Hells Canyon Presv. Council v. Haines, 2006 WL 2252554, *4-5 (D. Or. 2006)(USFS mine approvals must comply with CWA standards).

EPA's antidegradation standards, which the USFS 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). As detailed herein, the USFS has not ensured that all instream uses and water quality "shall be maintained." Indeed, as noted herein, the FEIS and Draft ROD admit that many such uses in local streams will either be reduced or eliminated altogether.

In addition, under the Organic Act, and the 36 CFR Part 228 regulations, the agency cannot approve an MPO unless it can be demonstrated that all feasible measures have been taken to "minimize adverse impacts" on National Forest resources, including all measures to protect water quality and habitat. *See* Rock Creek Alliance v. U.S. Forest Service, 703 F.Supp.2d 1152, 1170 (D. Montana 2010) (Forest Service PoO approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries).

Under the CWA and EPA regulations, water quality standards include the protection of beneficial uses. "A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses." 40 CFR § 131.2. The minimal designated use for a water body is the

"fishable/swimmable" designation which "provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U.S.C. § 1251(a)(2).

> The text [of the CWA] makes it plain that water quality standards contain two components. We think the language of § 303 is most naturally read to require that a project be consistent with *both* components, namely, the designated uses *and* the water quality criteria. **Accordingly, under the literal terms of the statute, a project that does not comply with a designated use of the water does not comply with the applicable water quality standards.**

PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 714-15 (1994) (*italics* emphasis in original, **bold** emphasis added). Thus, the CWA prohibits any activity that will not fully protect all of the designated uses for that water body.

Antidegradation policies "shall, at a minimum, be consistent with . . . [e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." 40 CFR §131.12(a)(1). Under this regulation, "'no activity is allowable . . . which could partially or completely eliminate any existing use.'" PUD No. 1, 511 U.S. at 718-19 (*citing* EPA, Questions and Answers on Antidegradation 3 (Aug. 1985)). (*citing* EPA, Questions and Answers on Antidegradation 3 (Aug. 1985)). In addition, because various local waters are designated "Outstanding Waters," the prohibitions against any degradation or impairment apply – something which the project cannot meet. *See* 40 CFR §131.12(a)(3) ("Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.")

In the response to comments, the FEIS states that, "ARM17.30.705 (2) (c) prohibits, in outstanding resource waters, any permanent change in water quality resulting from a new or increased point source discharge. Flow reductions do not result from a discharge and are therefore not subject to this requirement. However, flow reductions may constitute significant degradation. See ARM 17.30.715." FEIS at M-379.

The FEIS is incorrect in saying that flow reductions do not result from a discharge, and are therefore not subject to this requirement. ARM 17.30.705 loosely applies this provision to "any activity of man resulting in a new or increased source which may cause degradation." A new or increased source is loosely defined as "an activity resulting in a change of existing water quality occurring on or after April 29, 1993."

Even if that were not the case, 17.30.705(c) clearly states that for outstanding resource water, no degradation is allowed. Clearly, a reduction in flows, as outlined in the FEIS, constitutes degradation because it will result in harm to beneficial uses, particularly the ability to support aquatic life including threatened bull trout.

The FEIS clearly understands this connection between Montana's nondegradation provision and the loss of flows in Outstanding Resources Waters because it states in another response that it will defer the determination of whether the project would comply until after additional hydrologic analysis is done and the state makes a determination:

> As discussed in Section 3.11.1 of the FEIS, under the Montana Water Quality Act, no authorization to degrade may be obtained for outstanding resource waters, such as surface waters within a wilderness. After additional baseline information was collected by MMC during the Pre-Evaluation and Evaluation phases, the 3D model would be refined and the uncertainty of the model results reduced. The potential effects on surface waters within the CMW would be re-evaluated by the 3D model prior to beginning mine construction. The DEQ will determine whether the mine would degrade state waters in the CMW. Section 3.13.1.2 of the FEIS discussed that MPDES permits, issued by the DEQ, regulate discharges of wastewater by imposing, when applicable, technology-based effluent limits and state surface water quality standards, which include numeric and narrative requirements, nondegradation criteria, and TMDLs.

FEIS at M-381. Thus, as the FEIS recognizes, the nondegradation rule applies to "surface waters within a wilderness." Id. As the USFS knows, there will be no "discharge" into the Wilderness from the Montanore Project, meaning that the nondegradation requirement applies to the loss of flows as well as direct point source discharges. Also, the USFS's deferral of this critical analysis violates NEPA, because it defers the decision until after the FEIS and ROD have been issued.

Importantly, even if Montana eventually allows degradation (under a potentially illegal interpretation of state law), this does not excuse the Forest Service from protecting these nationally-important waters. The USFS has a separate and independent duty to protect the Wilderness and aquatic life from degradation under the Wilderness Act, ESA, Organic Act, Clean Water Act, and related laws and regulations. Allowing such vulnerable, essential and critical bull trout habitat to be degraded by the dewatering certainly does not meet the USFS's duty to protect fisheries and related habitat.

The FEIS makes it clear that dewatering of Outstanding Resource Waters within the Wilderness will be an irretrievable commitment of resources. It states that:

> Any changes to baseflow in the East Fork Rock Creek and East Fork Bull River within the CMW during and after mining would be an irreversible commitment of resources. … All alternatives would irreversibly reduce streamflow in the eligible East Fork Bull River and Bull River Wild and Scenic River segments.

FEIS at 998.

The East Fork Bull River and Rock Creek are the two most important bull trout recovery streams in the lower Clark Fork River region. According to the USFWS, "Currently, the East Fork Bull River and Rock Creek are the only bull trout spawning populations in the Cabinet Gorge reservoir reach in the LCFR. These two local populations represent the strongest populations in this reach and maintaining spawning and rearing success in these two local populations is essential to maintaining the existing survival status and potential for recovery of the LCFR bull trout core area population." Biological Opinion (BIOP) at 122.

The USFWS also emphasized the importance of the EFBR within the Wilderness in its 2011 comments:

> **The East Fork Bull River is the single-most important bull trout spawning and rearing stream in the Lower Clark Fork bull trout core area.** The modeling analysis projects base flows to be reduced by 11 percent at the Cabinet Mountains Wilderness boundary and by 97 percent within the wilderness at Year 52, and to potentially persist for more than 1000 years. When combined with expected climate change impacts of higher stream temperatures, earlier spring run-off, and the increased frequency of rain-on-snow events, such impacts would adversely impact the value of the upper East Fork Bull River for spawning and rearing habitat, including the possibility of serious population reductions or even extirpation of bull trout from the East Fork Bull River. Currently, 80 percent of observed bull trout redds in the East Fork Bull river occur upstream of the wilderness boundary.

FEIS at M-59 (emphasis in original).

According to the BIOP, dewatering from the mine would particularly harm the EFBR within the Wilderness, where most of the bull trout spawning occurs.

"The bull trout population and designated critical habitat in East Fork Bull River would be negatively impacted by predicted streamflow reductions during low flow conditions (Table 4). Current condition for baseflow is “functioning at risk for bull trout” (see Table 4). Maximum baseflow flow reductions in East Fork Bull River of 13 percent are predicted to occur after mine closure. The most seriously affected reach of the East Fork Bull River currently supports much of the bull trout spawning (and egg incubation) known to occur in the drainage, and the adverse impacts due to predicted flow depletions would extend downstream to the mouth through juvenile bull trout rearing habitats.” (p. 104, BIOP)

"Bull trout populations and designated bull trout critical habitat would be negatively impacted by predicted streamflow reductions during low flow conditions. Maximum baseflow reductions in East Fork Rock Creek of 9 percent would occur after mine closure and continue indefinitely (see Table 5). This impact would be significant as this reach supports the known existing spawning habitat for the resident bull trout in Rock Creek.” (p. 103, BIOP)

"As indicated above and in the Effects section of this BO, baseflow depletions in the East Fork Bull River and Rock Creek will have permanent consequences to both of these bull trout local populations due to loss of habitat availability, particularly loss of spawning habitat. Also, these adverse effects are likely to be more severe to the adult migratory component of these local bull trout populations, which is the particular life history form that is emphasized in the draft bull trout recovery plan for purposes of recovery.” (p. 122, BIOP).

There is no remedy once the impact occurs. A 2007 Forest Service memo from Joe Gurrieri to Ray TeSoro emphasizes the impacts that will occur due to dewatering of underground tunnels, and the uncertainties associated with mitigation of hydrologic impacts.

“*Impacts from pumping out and extending the adit are depletion of ground water discharge to springs, wetlands, lakes, and streams. Extrapolating from ERO’s flow model, the locations of concern include springs and wetlands in the upper Libby Creek watershed, baseflows in Libby*

Creek, Libby Lakes, Rock Lake, and surface water features along the Rock Lake Fault between Rock Lake and St Paul Lake." (Guerrieri, 2007)(attached)

"*… it should be noted that once the head distributions and flow dynamics in a fractured bedrock aquifer are disrupted by mining, it is very difficult if not impossible to restore the aquifer to its original condition. In other words, there may be irreversible surface impacts from the project for which no practical mitigation exists*." (Guerrieri, 2007)

The inability to ensure that Outstanding Resource Waters will be protected from degradation is further illustrated by the proposed monitoring plans in the FEIS, which state that:

> MMC would monitor flows from the mine and adits, as well as from individual fractures in the vicinity of the Rock Lake Fault and Rock Lake. If mine and adit inflows greater than 800 gpm occurred over a 2-month period or excessive tailings water occurred in excess of what could be managed by storage in the tailings impoundment, MMC would notify the agencies within 2 weeks. MMC would then implement excess water contingency plans described in Chapter 2, such as grouting or treatment and discharge at the Water Treatment Plant. If the mine void encountered substantial groundwater inflows in the vicinity of the Rock Lake Fault or Rock Lake, MMC would notify the agencies within 5 business days. "Substantial groundwater inflows in the vicinity of the Rock Lake Fault or Rock Lake" means a flow from any individual fracture within 1,000 feet of either the Rock Lake Fault or Rock Lake with total flow greater than an average of 50 gpm over a 24-hour period. The agencies would evaluate the inflow data and direct MMC to take appropriate actions. MMC would then evaluate the possible effect to Rock Creek and Rock Lake and provide an evaluation report to the agencies within 30 days after initial agency notification.

FEIS at C-77.

The proposed monitoring and action plan is not adequate to detect impacts in enough time to implement mitigation measures, all of which (grouting, buffers, bulkheads) are likely insufficient to truly mitigate the impact in the long term, as shown herein. This fails to ensure protection of Outstanding Resource Waters. By the time the agencies are notified, an evaluation report is developed a month later, the impacts to these Outstanding Resource Waters has likely already occurred and there is no available remedy.

Monitoring prior to actual mitigation of impacts merely "serve[s] to confirm the appropriateness of a mitigation measure, but that does not make it an adequate mitigation measure in itself." Alaska Wilderness League v. Kempthorne**,** 548 F.3d 815, 828 (9th Cir. 2008), *vacated as moot*, 555 F.3d 916 (9th Cir. 2009). There is no assurance that the eventual mitigation plan will be subject to public review under NEPA. Id.

> Even if mitigation measures may guarantee that the data will be collected sometime in the future, the data is not available during the EIS process and is not available to the public for comment. Significantly, in such a situation, the EIS process cannot serve its

> larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process.

Northern Plains v. Surf. Transp. Brd., 668 F.3d 1067, 1085 (9th Cir. 2011).

The FEIS admits to the significant adverse impacts to these streams and to the loss of stream functions and uses.

> Long-term decreases in flow in the Libby Creek, Rock Creek, and the East Fork Bull River watersheds are predicted to occur for all action alternatives during and after mine operations. After groundwater levels reached steady state conditions, flow in these streams would be higher than during and after mine operations, but flows in some streams would not return to pre-mine conditions. Mitigation would reduce effects to streamflows and Rock Lake, and would result in flows in most streams returning nearly to existing conditions at steady state. Streamflow in Little Cherry Creek would permanently increase compared to existing conditions with mitigation in Alternative 3. Although some of the predicted flow changes may not be detectable or separable from natural flow variability, any decrease in flow could have adverse long-term effects on the bull trout, redband trout, and westslope cutthroat trout populations by decreasing available habitat in these streams during certain times of the year. Bull trout may be particularly affected by these decreases because the habitat loss would occur during their spawning period. The East Fork Bull River is considered one of the most important bull trout spawning streams in the lower Clark Fork River drainage. Changes would likely not be detectable once steady state conditions are reached in this stream, but decreased low flows would affect habitat availability for these trout in the Operations, Closure, and Post-Closure phases.

FEIS at 465. It should be noted that these impacts are predicted even with the purported mitigation measures. Also, the above passage attempts to minimize concern with these water depletions by discussing flows "once steady state conditions are reached in this stream [East Fork Bull River]." Yet such conditions are not predicted to occur for "1,150 to 1,300 years." FEIS at 466.

The FEIS states that: "The bull trout mitigation plan in Alternative 3 would include multiple projects that are projected to account for the impacts predicted to occur to bull trout populations and critical habitat in the Kootenai and Lower Clark Fork core areas." FEIS at 465. Yet no mention is made of ensuring no loss of flows and habitat in the East Fork Bull River. In fact, the FEIS admits to the severe and irreversible adverse impacts:

> **Alternatives 2, 3, and 4 could irreversibly reduce bull trout and westslope cutthroat trout habitat in Rock Creek and East Fork Bull River drainages due to decreases in flow.** Mitigation would *slightly* reduce effects on streamflows and aquatic habitat in both streams in Alternatives 3 and 4. **Loss of bull trout habitat in the East Fork Bull River in all alternatives could be detrimental to bull trout populations in the lower Clark Fork River because this stream is considered a primary spawning location in this system.** The planned mitigation projects for bull trout are projected to mitigate for the

impacts predicted to occur to bull trout populations and critical habitat in the Kootenai and Lower Clark Fork core areas.

3.6.4.14 Unavoidable Adverse Environmental Effects

Mining of the ore body would unavoidably reduce streamflow and spring flows, and affect lake levels in Rock and St. Paul lakes. Decreased streamflows would result in the loss of aquatic habitat in the Libby Creek, Rock Creek, and East Fork Bull River watersheds. Water levels are predicted to reach steady state conditions 1,150 to 1,300 years after mining ceased. The actual time to reach steady state conditions may be shorter or longer and would be reevaluated using the 3D model after additional data were collected during the Evaluation Phase.

FEIS at 466 (emphasis added). The fact that "mitigation would *slightly* reduce effects on streamflows and aquatic habitat" in Rock Creek and East Fork Bull River does not satisfy the agency's duties. Mitigation to protect other areas, such as the "Kootenai and Lower Clark Fork core areas" does not mean that the agency will protect the habitat and fisheries in Rock Creek and the East Fork Bull River.

These adverse impacts will occur not just to fish populations but the supporting environmental conditions in the affected waters. As the FEIS admits:

> Macroinvertebrate populations are present throughout the reaches potentially affected by mine dewatering, and would be affected by the reduction or elimination of flow that would occur during low flow periods. Headwater streams also perform important ecological functions in terms of transport of organic matter, invertebrates, nutrients, and woody debris to downstream waters (Kline and NewFields 2012). Reductions in flow could adversely impact the ability of these headwater reaches to perform such functions.

FEIS at M-86.

The FEIS admits that, *even with the purported bulkhead/pillar mitigation (and even if such mitigation has been shown to be highly effective, which as noted herein has not been shown),* the cumulative changes to baseflow in critical stream reaches will significantly and irreversibly adversely affect aquatic life, fisheries, and fisheries habitat. For example, **Table 103 shows that "With MMC's Modeled Mitigation" baseflows in the East Fork Bull River within the Wilderness Area will be reduced 97% and 11% just outside the Wilderness boundary (EFBR-500). FEIS 589. Baseflow in the East Fork of Rock Creek within the Wilderness will be completely eliminated (100% reduction), and will lose 59% just outside the boundary.** Id.

In addition, it is likely that Table 103 underestimates loss of baseflow even with the purported mitigation, as it is based on MMC's model, which shows a significantly higher flow (i.e. lower flow reduction) than the more recent model run by Rock Creek Resources (RCR). For example, the RCR model shows a loss of -47% at EFBR-500, compared with -11% in the MMC model. Table 103 and FEIS at 587-88. Thus, although the RCR model "did not model effects with

mitigation" (Table 103 footnote), compared to the MMC model which did, the USFS failed to account for the higher baseflow reductions.

As noted herein, these severe and unmitigated impacts violate the USFS's duties under the ESA, CWA, Organic Act, NFMA, and Part 228 regulations to ensure the protection of valuable fisheries, flows, and habitat.

It should be noted that the agency's duty to protect bull trout and aquatic species and habitat is not limited by the ESA's "no jeopardy" standard. Under the Organic Act, and the 36 CFR Part 228 regulations, the agency cannot approve a PoO unless it can be demonstrated that all feasible measures have been taken to "minimize adverse impacts" on National Forest resources. "The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R.§ 228.8(e)." Rock Creek Alliance v. Forest Service, 703 F.Supp.2d 1152, 1164 (D. Montana 2010) (Forest Service PoO approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries). "Under the Organic Act the Forest Service must minimize adverse environmental impacts where feasible and must require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170. Such protective requirements are not limited to discharges to streams but necessarily include flow reductions, which are shown herein will adversely affect bull trout and other fish species and their habitat.

The USFS also fails to ensure that all other CWA requirements will be met at all times. In addition to the above-noted violations of the CWA, the USFS failed to require that MMC meet the zero-discharge requirements of EPA's New Source Performance Standards for copper milling operations using froth-flotation (the milling method here). Subject to minor exemptions not applicable here:

> "[T]there shall be no discharge of process wastewater to navigable waters from mills that use the froth-flotation process alone, or in conjunction with other processes, for the beneficiation of copper, lead, zinc, gold, silver, or molybdenum ores or any combination of these ores."

40 CFR 440.104(b)(1). As such, any discharge from the mill/plant would violate this CWA requirement and could not be authorized.

In response, the USFS admitted that this requirement applies here, but relies on the tailings seepage and pumpback system to avoid the zero-discharge mandate:

> Section 3.13.1.2.1 of the SDEIS and FEIS discussed that federal ELGs apply to mine drainage and process wastewater that discharge to surface water. Mine drainage is "any water pumped, drained, or siphoned from a mine" (40 CFR 440.132). Process wastewater is "any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate produce, finished product, by-product, or waste product" (40 CFR 401.11). In terms of the ELG requirements for copper mines that use froth flotation for milling, tailings water is

> considered process wastewater. Process wastewater from copper mines that use froth flotation for milling is not allowed to be discharged to state surface waters except in areas of net precipitation where precipitation and surface runoff within the impoundment area exceeds evaporation and except for bleed-off water. Because precipitation and surface runoff within the impoundment area would not consistently exceed evaporation, the impoundment in all alternatives would be designed as a zero-discharge facility though the use of a seepage collection system and pumpback wells. The discharge to groundwater beneath the impoundment would be authorized by a DEQ Operating Permit and a seepage recovery zone would encompass the impoundment footprint and extend to the pumpback wells. Compliance wells would monitor groundwater levels and quality at several compliance points upgradient of the permit area boundary to monitor the effectiveness of the pumpback well system (see Appendix C). If monitoring showed incomplete capture, the pumping rate would be increased and/or an additional pumpback well or wells would be installed to attain complete capture.

FEIS at M-378.

Yet simply collecting the discharge/seepage from the mill at the bottom of the tailings facility (even if all waters could be collected which has not been shown) and directing them to discharge from the Water Treatment Plant does not mean that there will be zero discharge as required by 40 CFR 440.104(b)(1). It merely redirects the discharge from the mill through the tailings and then through the Water Treatment Plant.

Indeed, the agency's plan admits that effluent from the mill will eventually be discharged into local waters. Nothing in the USFS's plan prevents the discharge in the end. As such, because the Project will violate the CWA's "zero discharge" requirement, the USFS cannot approve the Plan of Operations.

F. FAILURE TO COLLECT BASELINE DATA ON GROUNDWATER DEPENDENT ECOSYSTEMS OR PROVIDE MITIGATION MEASURES TO PROTECT GDES.

As stated in our previous comments (p. M 351-352, Volume 3 FEIS) and herein, the FEIS does not contain sufficient baseline data or analysis of the impacts to springs, groundwater dependent ecosystem wetlands, fens, riparian areas and other groundwater dependent ecosystems (GDEs) in the area that would be affected by mine operations, such as groundwater drawdown. The FEIS establishes that groundwater drawdown during and after mining is a significant concern, and therefore we expect that impact to groundwater dependent ecosystems should also be a significant concern. Without monitoring information on GDEs over a long enough period of time to understand natural variability, it is impossible to evaluate the impacts of the various alternatives on important resources, including those within the Wilderness.

The FEIS states that the area will be inventoried after the ROD has been issued (FEIS at C-45). At that time, a GDE inventory will be conducted that would include a vegetation survey to describe and document existing vegetation characteristics and establish a prevalence index used by the Corps to determine wetland vegetation (Corps 2008d). The GDE inventory would help

identify and rank GDEs based on their importance in sustaining critical habitats or species. The prevalence index would be used to assess changes in vegetation composition as described in the GDE inventory and monitoring plan.

For springs it states:

> The inventory area shown on Figure C-3 would be surveyed for springs. In this initial inventory, the flow of each spring would be measured twice, first between mid-August and mid-September during a time of little or no precipitation. The same springs identified and measured in mid- August through mid-September would again be measured when the area was initially accessible (June or July). Any spring with a measurable flow between mid-August and mid-September would be assessed for its connection to a regional groundwater system, based on flow characteristics (*e.g.* possible short-term sources of water supply, such as nearby late-season snowfields or recent precipitation), water chemistry, and the hydrogeologic setting (associated geology such as the occurrence or absence of colluvium or alluvium).

FEIS at C-45.

For wetlands, fens, and riparian areas:

> The inventory area shown on Figure C-3 would be surveyed for groundwater dependent wetlands, fens, and riparian areas. At each critical GDE habitat identified from the inventory, a vegetation survey using the Forest Service Level 2 Sampling Protocol for GDEs (USDA Forest Service 2012b) would be completed. Initial survey data would include site photos and points, GPS site locations, basic site descriptors, and plant species composition, focusing on hydrophytes (plants that are able to live either in water itself or in moist soils).

FEIS at C-45. For stream flow data, the FEIS states that for any stream in the affected area where streamflow data hasn't been collected:

> Measurements would be taken so that gaining stream reaches could be mapped, and then monitoring locations would be refined to focus on gaining reach lengths and flow. Streams would be assessed for their connection to a regional groundwater system based on flow measurements, water chemistry, the associated hydrogeology, such as faults or the occurrence or absence of colluvium and/or alluvium, and possible short-term sources of water supply, such as nearby late-season snowfields or recent precipitation.

FEIS at C-51.

The failure to collect baseline data on GDEs violates NEPA because this information is critical to understanding the potential impacts of the mine as a result of groundwater drawdown, the range of alternatives, and whether additional fish and wildlife impacts may occur as a result of the loss of these resources. According to the USDA Forest Service, "GDEs encompass many of the regionally-and nationally-significant ecosystems on NFS lands and are critical to

management of many threatened and endangered species. In many watersheds, they support a disproportionately large percentage of the total biological diversity relative to their size."[3]

Furthermore, there are no mitigation measures to offset the impacts to GDEs, particularly in the Wilderness, if monitoring activities identify impacts as a result of groundwater drawdown.

In response to comments about the inability to mitigate for these impacts, the FEIS only states "Section C.10 of the FEIS was reworded to make it clear that the monitoring program is intended to detect stress, so that measures could then be taken to reduce stress to flora and fauna from mine dewatering." FEIS at M-357.

Yet, as noted herein, future monitoring activities do not constitute mitigation. Once again, the FEIS violates NEPA because it fails to obtain adequate baseline data on GDEs in the affected area, evaluate the potential effects to these GDEs, identify mitigation measures to protect or offset impacts to GDEs, and evaluate the effectiveness of mitigation measures.

G. FEIS/DROD IMPROPERLY RELY ON BHES ORDER TO DEGRADE WHICH WAS ISSUED TO A DIFFERENT COMPANY FOR A DIFFERENT PROJECT

As expressed in our comments (p. M-383, Volume 3, FEIS) and herein, the FEIS and DROD improperly rely on a BHES order to degrade, which authorizes the Montanore mine to perpetually degrade area streams with certain nutrients and metals. The language of the BHES order allows this degradation for the life of the mine and for as long as necessary. The FEIS predicts that discharges from the Water Treatment Plant may degrade Libby Creek with increased levels of total dissolved solids, nitrogen, phosphorous, chromium, copper, manganese and zinc (p. 707, Volume 1, FEIS). We strongly disagree with the contention that MMC is entitled to rely on a 23-year-old authorization for a project that its predecessor not only failed to construct, but affirmatively abandoned.

In the FEIS response to comments, it states that:

> Section 1.3.2.3 of the DEIS, SDEIS, and FEIS disclosed that MMC's DEQ Operating Permit #00150 and MPDES permit were not terminated because reclamation of the Libby Adit was not completed. MMC later purchased Noranda Minerals Corporation and assumed these permits. Section 3.13.1.1.1 of the FEIS discussed that, according to the BHES Order, it "shall remain in effect during the operational life of this mine and for as long thereafter as necessary." The 1993 changes in the nondegradation law were made in Chapter 595, Laws of 1993. Section 10 of Chapter 595 provides that Chapter 595 "applies to all requests to degrade state waters filed with the department after [the effective date of this act]." Chapter 595 became effective April 29, 1993. Therefore,

[3] U.S. Forest Service, "Groundwater Dependent Ecosystems on National Forest System Lands: Recognizing and Managing a Largely Overlooked Resource," Presented by Christopher Carlson, PhD, National Groundwater Program Leader, USDA Forest Service, http://www.lic.wisc.edu/glifwc/uvhumw/Presentations/Carlson%20EWR%20pres%20for%20USGS.pdf (attached).

> petitions received before April 29, 1993, and pending on that date were to be processed and issued under the law as it read prior to Chapter 595. If the Legislature intended for those authorizations to be issued under the prior law, it could not have intended that passage of Chapter 595 would invalidate authorizations granted before the effective date of Chapter 595. The authorization to degrade for the Montanore Mine was issued on November 20, 1992. The Order established numeric standards for total dissolved solids, chromium, copper, iron, manganese, and zinc in both surface water and groundwater, nitrate (groundwater only), and total inorganic nitrogen (surface water only). For these parameters, the limits contained in the authorization to degrade apply. For the parameters not covered by the authorization to degrade, the applicable nonsignificance criteria established by the nondegradation rules apply, unless MMC obtained an authorization to degrade under current statute.

FEIS at M-383.

However, the BHES Order cannot be applied to the proposal currently before the agencies. The BHES order was issued for a different company for a different project that was abandoned in 2002. On May 14, 1993, the Department of State Lands issued Noranda an operating permit under the Metal Mine Reclamation Act. Despite receiving this permit, the authorization to degrade, and other necessary state and federal authorizations, Noranda failed to construct the Montanore Project. Instead, over the next decade, it allowed most of the permits for the Project to terminate or expire.

In 2002, Noranda notified the U.S. Forest Service that it was relinquishing that agency's authorization to construct and operate the mine. By so doing, Noranda waived any right to build the mine under the conditions in the 1992 approval. Noranda re-affirmed its decision to abandon the project in a letter dated November 21, 2003, and committed to completing reclamation at the site. DEQ required the company to retain the operating permit to complete reclamation. At no time after receiving the 1992 authorization to degrade did Noranda apply for an MPDES permit for the land application system, or for any of the various other point source discharges that construction of the mine would create. The only MPDES authorization Noranda received was for the discharge of nitrates from the abandoned exploration adit.

Permitting laws are continually updated over time to reflect new technology, new scientific understanding of impacts, and new societal standards. This is particularly true with regard to standards, like those set forth in BHES' 1992 order, that are based on "best available technology" standards. By definition, such standards are constantly evolving, and are intended to become more stringent over time as technology improves and costs decrease.

In fact, that's the case with the BHES Order, which authorized degradation only under certain conditions -- authorizing the company to degrade if it used land application to reduce nitrogen by at least 80%. Yet, the preferred alternative does not authorize the use of land application, but requires a water treatment plant.

The mine plan outlined in the preferred alternative is so significantly changed from Noranda's original proposal, that almost none of the major features are the same as that for which the BHES Order was issued. The tailings pond will be located north of Poorman Creek, rather than Little Cherry Creek; the plant site will be located between Libby and Ramsey Creek, two additional

adits will be developed in upper Libby Creek, and water treatment will be accomplished by a Water Treatment Plant, rather than the land application called for in the BHES Order.

Other significant changes have also occurred since the Noranda proposal was permitted and abandoned. Bull trout have been listed in the effected area, critical habitat has been identified and new water quality standards have been established for nutrients.

In 2014, the DEQ developed new total nitrogen and total phosphorus standards to protect beneficial uses, and prevent nuisance levels of bottom-attached algae. The total nitrogen standard is 0.275 mg/L – far below the BHES standard of 1 mg/l for TIN.

The EPA similarly raised concern about the FEIS inappropriate reliance on the BHES Order that allows degradation of resource waters with the release of nutrients, stating:

> We are also concerned that the DEIS appears to inappropriately rely primarily on the water quality standards set in the Montana Board of Health and Environmental Sciences ("BHES") 1992 Order (and confimed in subsequent permit renewals) for the Montanore Mine's Libby Adit discharges to the Libby Creek drainage. The current project proposal includes several additions to the original design, including three additional adits and a tailings impoundment. These new project features will likely result in point source discharges to three additional drainages i.e., Ramsey Creek, Poorman Creek and Little Cherry Creek. Given these new project features, we suggest that the proposed Montanore project, as presented in the Draft EIS, should be considered a "new or increased source" (ARM 17.30.702(18)).

FEIS at M-36.

The EPA further states, that:

> We continue to have the concern expressed in our DEIS comments letter that the 1992 BHES Order instream limit for total inorganic nitrogen (TIN) of 1 mg/l may not be protective of beneficial uses, since the limit is less stringent than MDEQ's draft numeric nutrient criterion of 0.3 mg/l, which identifies a level to protect against aquatic effects of nitrogen in streams. The SDEIS suggests that it is unknown whether TIN concentrations greater than 0.233 mg/l and less than 1 mg/l would increase algal growth to the extent that it would be considered "nuisance" algae.

FEIS at M-79.

In the response to comments, the FEIS states:

> An expanded discussion of the effects of the alternatives due to changes in nutrient concentrations was included in the SDEIS and FEIS in Section 3.6.4.2.3. This discussion disclosed the potential for adverse effects on aquatic life in the Libby Creek watershed, including effects that may occur to fish and invertebrate populations if algal growth increases and dissolved oxygen levels decrease. Quantifying the effect of the increased nutrients on algal growth or fisheries remains complicated based on site-specific factors

> in the project area streams such as total phosphorous concentrations, canopy cover, temperature, growing season and high flow events that scour algae from the streambed. Initial data indicated that total phosphorus levels in Libby Creek are low in analysis area streams. … Under Alternatives 3 and 4, the Water Treatment Plant would be modified to treat nitrogen and possibly phosphorus, and the LAD areas would not be used, decreasing the potential for increased algal growth and effects on aquatic life. The degree of treatment needed for nitrogen and phosphorus would depend on whether MMC applied for and received either a general or individual variance to the base nutrient standards. In either case, MMC would have to comply with the BHES Order limit of 1 mg/L total inorganic nitrogen.

FEIS at M-250.

This fails to ensure that beneficial uses are protected because it continues to rely on the BHES Order and allows the discharge of nutrients above the new DEQ nutrient standards which articulate nutrient levels intended to protect beneficial uses.

Also, as noted herein, the USFS has a separate and independent duty to protect fisheries and habitat – which cannot be met if the USFS authorizes a project which will admittedly violate the current standards. In other words, since the current standards are established to protect beneficial uses, species and aquatic life, a violation of these standards by definition will adversely affect these resources – something which the USFS cannot allow.

The FEIS also states in its response to comments that:

> The BHES Order also states that biological monitoring should be conducted to ensure that applicable standards are met, which includes a narrative standard prohibiting nuisance algal growth. Based on this, the limits set in the BHES Order for TIN could be modified if aquatic life were adversely affected. As noted in Section 3.6.4.3.6 of the FEIS, the BA for bull trout (KNF 2013a) concluded that the potential for detrimental effects to bull trout populations and their critical habitat from nutrient increases would be negligible based on the ability to modify the BHES Order limit if effects were warranted. Sections C.10.4.3, C.11.5 and C.11.7 of the SDEIS and FEIS detailed the proposed monitoring plan that included sampling for water chemistry parameters such as nitrogen and phosphorus, and sampling for periphyton and chlorophyll-a levels based on DEQ protocols. Using future monitoring (as described in Section C.11) of the water quality and aquatic populations to address the uncertainties in the effects of increased nitrogen levels would be reasonable based on the number of site-specific factors which may influence the response of these populations to increased nutrients in this stream.

FEIS at M-250. This is also inappropriate. Once monitoring identifies the growth of nuisance algae and impacts to aquatic life, the harm has been done, and it can take considerable time for algal levels to respond. No mitigation is proposed to prevent this impact from occurring in the first place.

In addition, as part of its Organic Act and Part 228 duties to comply with all state environmental protection requirements, the USFS must comply with the Montana Constitution. The Montana

Constitution grants Montanans inalienable rights. Mont. Const. art. II, § 3. These "include the right to a clean and healthful environment and the rights of pursuing life's basic necessities." Id. Additionally, Article IX, Section 1 provides: "(1) The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations. (2) The legislature shall provide for the administration and enforcement of this duty." Mont. Const. art. IX, § 1.

Reliance on the outdated BHES Order does not meet this standard. For example, as noted herein, levels of pollution that might damage beneficial uses necessarily degrade the clean and healthful environment. As EPA suggested in its comments on the SDEIS, the numeric standards are established for certain contaminants to protect beneficial uses. Since the levels of pollutants such as nitrates contained in current standards are much lower than those permitted by the 1992 BHES Order, allowing discharge of pollutants at the higher levels would damage beneficial uses. If beneficial uses are damaged, the environment involved can no longer reasonably be characterized as clean and healthful. Therefore, DEQ will have failed in its mandate to maintain and improve a clean and healthful environment conveyed by Article IX of the Montana Constitution, as well as the CWA/Organic Act/228 requirements noted herein.

In any event, the BHES Order does not override the USFS' independent duty to protect fisheries, habitat, and water quality at all times under the CWA, ESA, Wilderness Act, NFMA, and Organic Act/228 regulations. Thus, the USFS cannot rely on the BHES Order, or any other exemption allowed by MDEQ, to avoid its responsibilities under federal law.

H. FEIS/DROD FAIL TO PROPERLY ANALYZE AND PROTECT AGAINST IMPACTS TO GROUNDWATER FROM TAILINGS POND SEEPAGE and THE WATER TREATMENT PLANT; FAILURE TO DEMONSTRATE COMPLIANCE WITH WATER QUALITY STANDARDS and NONDEGRADATION PROTECTIONS

As expressed in our comments (p. M-232, M235, FEIS, Volume 1) and herein, we remain concerned about the effects of tailings seepage on surface and groundwater.

The FEIS uses a mass balance calculation to predict potential impacts to groundwater quality as a result of the tailings pond seepage in alternative 3 (P. G-39, Volume 3, FEIS). The results are used to determine whether applicable water quality standards and nondegradation standards are likely to be met.

According to the FEIS, "In all alternatives, seepage not captured by the seepage collection system at the tailings impoundment would mix with the underlying groundwater. The existing groundwater quality would be altered because the seepage water quality would have higher concentrations of nitrate, several metals, and total dissolved solids than existing water quality. Manganese and antimony concentrations in all alternatives are predicted to be higher than nondegradation and BHES Order limits. Concentrations of other metals, after mixing, are predicted to be below nondegradation and BHES Order limits." (p. S-41, FEIS, Volume 1)

The calculations used to make these predictions are based on inappropriate data. The calculations to predict water quality below the Poorman Creek tailings pond (Alternative 3) uses

groundwater quality data from the Little Cherry Creek impoundment site. Furthermore, it uses seepage rates of 25 gpm from Little Cherry Creek "Representative Tailings Water Input from Seepage" for the Poorman Tailings site, even though the Poorman Creek is using thickened tailings, and may result in different seepage rates and seepage concentrations. Without accurate baseline groundwater quality data from this site, site-specific analysis of seepage rates, soils and underlying geology, it is impossible to provide accurate predictions on the potential effects to groundwater from the Poorman Tailings Site.

According to the FEIS, MMC requested a groundwater mixing zone beneath and downgradient of the Poorman Impoundment for changes in water quality, and the FEIS defers the analysis and decision to Montana DEQ, stating that the DEQ would determine if a mixing zone beneath and downgradient of the impoundment would be granted in accordance with ARM 17.30.518 and, if so, would determine its size, configuration, and location. If DEQ granted a mixing zone, water quality changes might occur..."

The decision to defer this analysis to DEQ is inappropriate. The agencies must analyze the potential impacts to groundwater from tailings seepage and determine whether sufficient mitigation measures are in place to protect groundwater, including groundwater below public and adjacent private land. Additionally, as noted herein, the USFS cannot rely on a state-approved mixing zone that will allow federal public land resources to be degraded.

The FEIS also fails to provide sufficient information to analyze the effects of the tailings dam on reductions in flows downstream. According to the 404(b)(1) Analysis in the appendix of the FEIS,

> The primary long-term source of water in the perennial reaches of the four tributaries in the Impoundment Site is one or more springs located within the footprint of the tailings impoundment. After the springs were filled, flow in the perennial reaches down-gradient of the impoundment would likely be reduced, at least during baseflow conditions. **Perennial flow would change to intermittent or ephemeral flows in some segments**. The current locations and periods of intermittent and ephemeral flow are expected to be similar after construction of the impoundment, but the magnitude of flow would be reduced due to significant reductions in drainage area from the tailings impoundment. The reduction of groundwater discharge to the tributaries may increase the temperature of the flow that would remain in the tributaries.

FEIS at L-29 (emphasis added). Thus, the FEIS admits that stream flows will either be eliminated or substantially reduced in these reaches. No mitigation is proposed, let alone analyzed, in violation of NEPA and the USFS' water quality and fisheries protection duties.

The FEIS also states that ten additional springs or seeps were identified in the Poorman Tailings Impoundment site in 2011, but the flow rate of these springs has not been measured and they are not included in Table 97. FEIS at 551. Without this information, it is difficult to accurately determine the reduction in flows to surface water below the tailings facility.

Overall, the USFS relies on the pumpback system to purportedly reduce the predicted pollution impacts to groundwater from the tailings facility, with the pumped water piped to the water

treatment plant in another drainage. Yet there is no mitigation proposed for the loss to area waters from this dewatering and elimination of the springs.

Furthermore, the FEIS fails to provide a detailed design of the proposed pumpback system for alternative 3 to demonstrate that it's technically feasible to protect water quality. The FEIS states that the goal of a pumpback system would be to establish and maintain complete hydraulic capture of all groundwater moving downgradient from the impoundment, as confirmed by measuring water levels at adjacent monitoring wells, but it doesn't provide any supporting data to show that pumpback wells will be able to achieve that level of capture.

It is the USFS's duty to demonstrate that all public land and adjacent private property will not be harmed, and that water quality will be protected – something which has not occurred here. For example, as noted above, the USFS has no plans to protect the stream flows that may be eliminated by the pumping and dewatering.

Similarly, the FEIS does not demonstrate that the discharges from the Water Treatment Plant will protect against adverse impacts to groundwater or surface water. The FEIS proposes to discharge to percolation ponds, but no groundwater data is provided to demonstrate that groundwater would be protected from degradation.

The FEIS also states that the maximum estimated discharge from the WTP would exceed the current design capacity of the Water Treatment Plant, estimated to be 500 gpm. It states that during final design MMC would estimate the maximum discharge rate during the estimated wettest year over a 20-year period using best available precipitation data and modify the WTP such that it would have adequate capacity to treat discharges during a 20-year wet year. MMC would also evaluate the size of the percolation pond at the Libby adit and enlarge it if necessary, to accommodate higher flow rates. The plant would be modified to treat nitrogen and phosphorous and possibly dissolved metals. FEIS at S-13.

This fails to meet NEPA requirements because without adequate information in the FEIS about the size and capabilities of the water treatment plant and percolation ponds as well as current baseline data on receiving waters, it is impossible to determine whether downstream impacts will occur, how large those impacts will be, and what mitigation measures will be used to meet water quality standards. Furthermore, the lack of specificity about whether the WTP will be required to treat for metals makes it impossible to know what metal concentrations will be in the WTP discharge, how large the mixing zone may be, and what the potential impacts are to aquatic life.

Also, if metals treatment is required, there is no analysis of the byproducts of such treatment, including where and how disposal of the byproducts will occur.

As expressed in our comments (FEIS at M-369), we also remain concerned that after the mine void fills, water from the mine would begin discharging in perpetuity into the East Fork Bull River. Discharges of water with metals and nutrients could degrade wilderness rivers and streams.

In the response to comments, the FEIS states "As discussed in Section 3.10.4.3.2, the 3D Model indicates that there would be the potential for water to move from the mine void toward EFBR

assuming there was sufficient fracture permeability between the mine void and the surface, a minimum vertical distance of 3,000 feet. As discussed in Section 3.10.4.3.2. of the SDEIS and FEIS, the agencies mitigation (bulkheads and/or barrier pillars) would significantly reduce or eliminate this potential flow. The bulkheads and/or barrier pillars would not be maintained after mine closure, but water quality monitoring would continue until MMC's final bond was released." FEIS at M-369.

This is inadequate because there is no evidence to demonstrate that bulkheads and/or barrier pillars will work over the long-term, as detailed herein. Furthermore, water monitoring does not constitute mitigation. Therefore, the FEIS cannot demonstrate that water quality protections will be met, and that the East Fork of the Bull River will be protected from degradation.

I. INADEQUATE BASELINE DATA AND ANALYSIS OF IMPACTS TO, AND FAILURE TO PROTECT, SENSITIVE SPECIES and MONTANA SPECIES OF SPECIAL CONCERN, INCLUDING WESTSLOPE CUTTHROAT, INTERIOR REDBAND TROUT, AND TORRENT SCULPIN.

As described in our comments on page (M-247, 256, Volume 3, FEIS; 2009 and 2011 comment letters) and herein, the FEIS and DROD fail to provide adequate baseline data about aquatic life in potentially effected streams; or adequately evaluate and protect against the potential impacts to these important populations.

There is inadequate baseline data in the FEIS to characterize the distribution and density of fish designated by the Forest Service as sensitive species (interior redband trout, Westslope cutthroat, Western pearlshell mussels) or Montana species of special concern (torrent sculpin) in the streams affected by the project.

Interior redband trout

Interior Redband trout are a subspecies of the rainbow trout and designated by the Forest Service as a sensitive species. Baseline data for this species is out-dated and inaccurate. The FEIS presents baseline data from 1988 and 2005 for interior redband trout and Westslope cutthroat trout in Libby Creek, Ramsey Creek, Poorman Creek and Little Cherry Creek. (FEIS at 351). Yet, the FEIS states that because no genetic analyses were performed at the time of the 1988 study, some uncertainty exists as to whether the redband trout were hybrid or pure. Similarly, due to the difficulty of differentiating between redband trout, rainbow trout and their hybrids, the 2005 fish were all recorded as Oncohynchus sp., rather than differentiating between rainbow and redband trout.

The FEIS mentions that additional data was included from the MFISH database (FWP 2012), but this database still does not provide data to differentiate between redband trout and rainbow trout in Libby Creek, stating that results of the specific surveys documented in either the MFISH database (FWP 2012), Kline Environmental Research (2004), or Dunnigan *et al.* (2004, 2005) only record rainbow trout (presumably referring to redband trout, rainbow trout, and their hybrids), as having been collected from the segment of Libby Creek within the analysis area downstream of Libby Falls. (FEIS at 352). In Libby Creek, the last genetic analysis occurred in 2000, revealing that 24 out of 25 fish sampled were redband trout, but that data is limited and

now fifteen years old. (FEIS at 355).

Similarly for Poorman Creek, the last genetic analysis was conducted in 2000, and although it indicated that the trout populations in Poorman Creek consisted of rainbow trout, it did not specify the subspecies. A 2003 memo states that the allele frequencies detected during the genetic analyses are actually characteristic of redband trout, not rainbows, but no current accurate data is available. FEIS at 356.

Fish data for Little Cherry Creek is also sparse and inadequate for these species. The FEIS states that, "Field data for all surveys summarized in the MFISH database and by Kline Environmental Research (2004) document only the collection of redband or rainbow trout, with no specific data pertaining to the collection of bull trout or any other species. Only one additional survey is documented in MFISH other than the results of the initial baseline study. This survey was conducted from a section of Little Cherry Creek about 1 mile upstream from its confluence with Libby Creek and documents 24 redband trout collected from an unknown length of the stream." FEIS at 356. The last genetic analysis to determine redband trout occurred in 2005 – ten years ago. Id. No redband trout redd surveys have been conducted in the Libby Creek or Fisher River watersheds. FEIS at 378.

As a result, there is inadequate information to characterize baseline conditions for distribution and density of interior redband trout in area streams, and thus it is impossible to accurately evaluate the potential effects of the proposed project to this important senstive species.

Torrent sculpin

Torrent sculpin, another Forest Service sensitive species, are limited to the Kootenai River System in Montana. FEIS at 379. The FEIS states that "little data were available to determine the status and distribution of torrent sculpin within the analysis area; thus the discussion of the current status of this species within the analysis area is limited." FEIS at 379. In fact, the data in the FEIS fails to differentiate between slimy sculpin and torrent sculpin. It states that "Although sculpin were identified as common at the downstream Libby Creek site surveyed in 2005 (Kline Environmental Research and Watershed Consulting 2005a), and were also collected in small numbers at the Libby Creek sites further upstream and in Poorman Creek, they were not analyzed to determine if they were slimy or torrent sculpin." FEIS at 379.

The FEIS goes on to say that, "while torrent sculpin are thought to inhabit analysis area streams, little data were available to determine the status and distribution of this species within the analysis area, possibly because of the difficulty in differentiating this species from slimy sculpin morphologically. Based on this, determining the risks to the populations within the watershed is not feasible." FEIS at 392. The lack of data, however, does not excuse the agency from its duty under NEPA to obtain current data in the FEIS.

Westslope cutthroat

The FEIS states that "Westslope cutthroat trout have been occasionally collected near the outlet of Rock Lake, and could potential use the reach immediately upstream of the lake. (Kline Environmental Research and New Fields)." FEIS at 426. The FEIS predicts a large reduction in flow in headwater streams near and upstream of Rock Lake and St. Paul Lake. A maximum

reduction of 97 percent is estimated at EFBR-300. Current baseline data is needed to determine the distribution of westslope cutthroat and other fish in these headwater streams in order to evaluate the extent of impacts.

In the response to comments, the FEIS states that, "Impacts to westslope cutthroat trout and redband trout were assessed qualitatively," and for the most part, the FEIS generically says that any adverse impacts to bull trout would also be applicable to sensitive species and species of concern. According to the FEIS,

> Specific impacts on bull trout as a threatened and endangered species, and on westslope cutthroat trout and redband trout as sensitive species, were discussed in the "Threatened and Endangered Species" and "Sensitive Species" subsections of Section 3.6.4.
>
> The BA also stated that impacts to bull trout from changes to nutrient levels would be negligible, and the impacts from and effects on stream temperatures resulting from the alternatives was uncertain but assumed to be minimal. Effects to westslope cutthroat trout and redband trout from these factors would be similar. Qualitative discussions of the potential effects of nutrient and stream temperature increases on aquatic habitat and populations resulting from project alternatives were updated in the FEIS in sections 3.6.4.2.3 and 3.6.4.2.5, respectively.

FEIS at M-256 to 257.

> The agencies' fisheries and bull trout mitigation projects are proposed to offset any loss of bull trout and other fish species and their habitat, as described in sections 2.5.7 and 3.6.4.3.6. The success of the proposed mitigation projects would be based on monitoring data to confirm that the value of the projects exceeded documented and predicted impacts to bull trout populations and critical habitat to account for this uncertainty, as discussed in Section 3.6.4.3.6 and the BA for bull trout (KNF 2013a).

FEIS at 257.

This is inadequate. NEPA requires that adequate baseline data be collected to the agencies take a hard look at the potential effects of the project. This has not been done for these species, and without it, it is impossible to evaluate the potential effects of the project or the effects of various alternatives, or the adequacy of mitigation measures. Furthermore, these sensitive species don't always occur in the same streams as bull trout, therefore mitigation measures to offset the impacts to bull trout may not effectively provide mitigation for sensitive species such as red band trout. Without this type of species-specific analysis, it is impossible to determine whether appropriate mitigation is in place for the sensitive species and species of special concern.

For example, the FEIS states that within the Kootenai Core Area, mitigation projects would focus on offsetting any decreases in bull trout habitat and populations that may occur in the reach of Libby Creek upstream of Libby Falls, where the isolated resident population currently exists. On-site mitigation within this reach of Libby Creek would be the preferred option, but if it fails, the contingency plan would be to locate a mitigation project in Flower Creek. FEIS at 432.

Yet, the FEIS states that only bull trout were collected in Libby Creek upstream of the Falls.

FEIS at 352. And, the FEIS doesn't include sufficient information on redband trout or torrent sculpin, to demonstrate that mitigation measures in Flower Creek would provide any benefits to these fish. FEIS at 364. The FEIS doesn't include the presence of redband trout in this stream, and states that torrent sculpin have only been found there rarely.

J. INADEQUATE BASELINE DATA ON BULL TROUT POPULATIONS; SPAWNING; ETC.

As described in our comments (p. M-264-267, Volume 3, FEIS) and herein, the FEIS does not contain adequate baseline information and analysis on bull trout and the ability to evaluate potential impacts.

In the response to comments, the FEIS states "Baseline data describing fish species abundance or densities were presented in Section 3.6.3.5 of the DEIS and FEIS for all analysis area streams. Multiple fish population surveys were completed on many of the streams. Surveys on some streams also provided data on fish genetics and spawning activity. This section was updated in the FEIS to include the results of more recent fish surveys conducted in analysis area streams by FWP, MMC, Avista and others." FEIS at M-267-68

However, according to the FEIS, the most recent spawning surveys occurred in 2007 & 2008, and only a single site has been monitored for bull trout redds on Little Cherry Creek, Poorman Creek and Ramsey Creek, where no redds were found. The 2008 survey was the most recent spawning survey for Libby Creek as well. FEIS at 366. This violates NEPA. Significant changes may have occurred over the last seven years, and current baseline data is needed.

According to the FEIS, the BA categorized the Libby Creek, Big Cherry Creek and Bear Creek bull trout subpopulation sizes as functioning at risk based on low numbers, particularly migratory adult trout, degraded habitat in some areas, and the possibility of catastrophic flooding events occurring. Ramsey and Poorman Creek were listed as having subpopulations that were functioning at risk and functioning at unacceptable risk, respectively. According to the FEIS, "Limited data suggest discontinued use of Poorman Creek. Other tributaries had insufficient data available to determine the risk to the population in those streams." FEIS at 369.

This violates NEPA because adequate baseline data is needed on bull trout populations in Libby, Poorman and Ramsey Creek to understand the potential impacts of the project on this important threatened species.

The FEIS also contains insufficient data on bull trout in the Fisher River watershed to analyze the impacts of the proposed power line. "Bull trout appear to be less numerous in the Fisher River watershed than in the East Fork Bull River or Rock Creek watersheds, but data are limited for this drainage. FEIS at 370.

In the response to comments, the FEIS states that, "As noted in section 3.6.3.5.3 the presence of fish in the East Fork Bull River has been documented up to the Placer Creek confluence, indicating about 7 miles of fish habitat would be affected to varying extents in this stream. Fish populations may also exist in reaches further upstream or in Placer Creek, **but no records of surveys conducted in these areas were located**." FEIS at M-264 (emphasis added).

This is inadequate. Current and accurate baseline data on bull trout populations are needed in the most upstream reaches of the EFBR, because impacts from dewatering are expected to occur in those reaches.

K. FAILURE TO FULLY EVALUTE THE EFFECTS OF CLIMATE CHANGE ON AQUATIC LIFE, PARTICULARLY THREATENED BULL TROUT.

As expressed in our comments (FEIS at M-277) and herein, the FEIS lacks adequate analysis about the potential cumulative and other effects of climate change on aquatic communities. The FEIS also failed to fully analyze the potential impacts to aquatic life from increased temperatures and increased frequency of storm events resulting from climate change. The FEIS states that due to the possible range in effects of climate change on the aquatic resources and the many factors that could affect that outcome, quantifying the combined impacts of Alternative 3 and climate change was not feasible. FEIS at 428.

This fails to meet the requirements of NEPA. Simply because it's difficult to make these evaluations, does not absolve the agency of doing so. Scientists have used a number of modeling efforts to predict the effects of climate change to salmonids, including bull trout. Given the importance of the Cabinet Mountains Wilderness as critical habitat for threatened bull trout, and the East Fork Bull River and East Fork Rock Creek's role as the two most important bull trout recovery streams in the lower Clark Fork River region, it is reasonable to take a hard look at the potential cumulative impacts.

According to the Biological Opinion, cold water temperatures play an important role in determining bull trout habitat, as these fish are primarily found in colder streams (below 59° Fahrenheit (F)), and spawning habitats are generally characterized by temperatures that drop below 48 degrees F in the fall (Fraley and Shepard 1989, Pratt 1992, Rieman and McIntyre 1993).

Thermal requirements for bull trout appear to differ at different life stages. Spawning areas are often associated with cold-water springs, groundwater infiltration, and the coldest streams in a given watershed (Pratt 1992, Rieman and McIntyre 1993, Baxter and Hauer 2000, Baxter and McPhail 1997, Rieman et al. 1997). Optimum incubation temperatures for bull trout eggs range from 35 to 39 degrees F, whereas optimum water temperatures for juvenile rearing range from about 46 to 50 degrees F (McPhail and Murray 1979, Goetz 1989, Buchanan and Gregory 1997).

The Ninth Circuit has rejected the agency's attempt to avoid reviewing impacts by simply discussing general effects (and even that was not done in the FEIS):

> As we have observed on multiple occasions, "general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Klamath–Siskiyou*, 387 F.3d at 993–94 (quoting *Ocean Advocates*, 361 F.3d at 1128). 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.

Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1134 (9th Cir. 2007).

The USFS cannot fail to protect these resources simply by saying that it is "uncertain" whether the impacts may occur.

> [W]e [the federal courts] nonetheless have a responsibility to ensure that an agency's decision is not arbitrary. **It is not enough for the Service to simply invoke "scientific uncertainty" to justify its action**. As the Supreme Court has explained, "[r]ecognizing that policymaking in a complex society must account for uncertainty ... does not imply that it is sufficient for an agency to merely recite the terms 'substantial uncertainty' as a justification for its actions." State Farm, 463 U.S. at 52, 103 S.Ct. 2856. The Service must rationally explain why the uncertainty regarding the impact of whitebark pine loss on the grizzly counsels in favor of delisting now, rather than, for example, more study. *See* id. Otherwise, we might as well be deferring to a coin flip.

Greater Yellowstone Coalition v. Servheen, 665 F.3d 1015, 1028 (9th Cir. 2011)(emphasis added).[4] Also, the uncertainties concerning the extent of impacts does not relieve the Forest Service of the responsibility under NEPA to analyze the mitigation of likely impacts at the outset. South Fork Band Council v. U.S. Department of the Interior, 588 F. 3d 718 (9th Cir, 2009).

> BLM argues that an effectiveness discussion was not required because it is impossible to predict the precise location and extent of groundwater reduction, and that problems should instead be identified and addressed as they arise. But NEPA requires that a hard look be taken, if possible, *before* the environmentally harmful actions are put into effect. *National Parks & Conservation Association v. Babbitt,* 241 F.3d 722, 733 (9th Cir.2001).
>
> In this instance, the EIS states that BLM has identified fifty perennial springs and one perennial creek that are the most likely to dry up, though among these it is impossible to "conclusively identify specific springs and seeps that would or would not be impacted." **That these individual harms are somewhat uncertain due to BLM's limited understanding of the hydrologic features of the area does not relieve BLM of the responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset**. *See National Parks,* 241 F.3d at 733("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain

[4] This rule applies to all of the instances noted herein, where the USFS fails to fully protect affected resources because the predicted impacts are based on modeling, or that long-term impacts are uncertain.

> it.") Even if the discussion must necessarily be tentative or contingent, NEPA requires that the agency give some sense of whether the drying up of these water resources could be avoided.

South Fork Band Council, 588 F.3d at 727 (emphasis added). Here, the lack of an adequate analysis of the impacts to fisheries and habitat, ground water, surface water, and their dependent resources noted herein, along with the lack of an adequate mitigation discussion (including effectiveness) violates NEPA.

In fact, the BIOP emphasizes the significance of this risk to bull trout populations in the core areas, stating, "Regarding climate change**,** and considering the current extent of occupied bull trout habitat, predicted summer maximum water temperature increases in spawning and rearing habitat of 33.8° to 37.4° F would have profound impacts on the bull trout populations (USDI Fish and Wildlife Service 2008). Headwater bull trout streams in this region are typically groundwater- influenced, but climate change is expected to have a larger impact in this region than many other places in western Montana, due in part to lower elevations and precipitation patterns that appear conducive to high frequency of rain-on-snow conditions. In addition, there's already major concern with mainstem Clark Fork River water temperatures that are marginally suitable for bull trout during midsummer and a shrinking amount of habitat suitable for bull trout in the mainstem reservoirs. Combined, these factors favor introduced species and increase fragmentation of bull trout." (P. 79, BIOP)

As demonstrated by the extensive of research in this area (attached), the implications of climate change on salmonids, including bull trout, are profound. Rieman *et al*. (2007) predicted that climate warming could result in 18 to 92 percent loss of thermally suitable habitat for bull trout. Wenger *et al*. (2011) used a hydrological model to predict the effects of changes in the flow regime and stream temperatures resulting from climate change on cutthroat trout, brook trout, brown trout, and rainbow trout. These species were predicted to lose between 35 and 77 percent of their current habitat due to increased temperatures beyond the species' thermal limits, negative biotic interactions, and increases in winter flood frequency.

Jones et al. developed a spatial stream temperature model to predict stream temperatures throughout the Flathead River Basin, estimate thermal regimes for bull trout habitats, and predict thermal changes under a range of future climate warming scenarios. Model results can be used to focus conservation and management efforts on populations of concern, by identifying critical habitats and assessing thermal changes at a local scale.

Isaak et al. (2010) employed spatially explicit, spatial statistical models to retrospectively estimate the effects of climate change and wildfire on stream temperatures and critical bull trout habitats in the Boise River Basin in central Idaho. The models estimated that from 1993 to 2006 bull trout lost 11–20% of headwater spawning and rearing streams.

The Intergovernmental Panel on Climate Change (2007) determined that changes in temperature and precipitation have occurred in northwest Montana and are likely to continue to occur in the future. Warmer stream temperatures and changes in flow regimes would directly affect some cold water fish species, including bull trout, cutthroat trout, and other salmonids by contracting and shifting the range of habitat suitable for such fish and increasing the risk of egg scour.

Williams et al. (2009), examined how increased summer temperatures, uncharacteristic winter flooding, and increased wildfires—are likely to affect broad-scale population persistence among three subspecies of cutthroat trout Oncorhynchus clarkii. Those results suggest that as much as 73% of the habitat currently occupied by Bonneville cutthroat trout O. c. utah, 65% of that occupied by westslope cutthroat trout O. c. lewisi, and 29% of that occupied by Colorado River cutthroat trout O. c. pleuriticus will be at high risk from one or more of the these three factors.

Scientists repeatedly call for resource managers to take these issues into account in their management and decision-making. The Rocky Mountain Research Station has already mapped predictions of water temperature increases as a result of climate change in the Cabinet Mountains Wilderness Area at this interactive website: http://www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html# (attached).

Yet, these are major changes that aren't accounted for in the cumulative effects analysis, yet are critical to understanding the potential impacts to threatened bull trout and other aquatic species, when considered in conjunction with the adverse, and long-term effects of the proposed Montanore project on aquatic life, particularly bull trout.

The FEIS also fails to evaluate the potential for adverse effects from more frequent storm events. As in our previous comments (M-352, Volume 3, FEIS), we continued to be concerned that the storm water diversions in the FEIS, which are sized to handle a 10-year/24 hour storm event or 100-year/24 hour storm event, will be inadequate to protect water resources from stormwater runoff and major storm events.

In the response to comments, the FEIS states that:

> MMC would design all ditches and sediment ponds that would contain process water or mine drainage for a 100-year/24-hour storm. Overflows from the sediment ponds would only occur during high flow events when there would already be naturally elevated sediment loads in streams. Given that precipitation and snowmelt events create highly variable flow regimes, with flooding regularly occurring and resulting in elevated suspended sediment levels, it is likely that additional sediment from sediment pond overflows would have negligible effects on aquatic resources or habitat and would not be distinguishable from background levels. A qualitative analysis of possible changes in stream water quality during storm runoff events was completed. Streamflow would be very high during such an event, with facility discharges to streams likely less than 5 percent of the peak stream flow. Any discharges from stormwater retention ponds would be sampled and regulated. In addition, the tailings impoundment would be designed to retain runoff from the 2-week Probable Maximum Precipitation event plus snowmelt under all alternatives.

FEIS at M-372.

This fails to properly analyze the inadequacy of stormwater controls on surface water resources and aquatic life. The U.S. Bureau of Land Management and Montana Department of Environmental Quality have given presentations on the impacts of climate change and extreme

weather events on hardrock mining at recent mining conferences.[5] A 2012 presentation by the U.S. Bureau of Land Management at the Mines, Design Operations and Closure conference specifically points out the inadequacy of designing for the "100-year, 24-hour storm event" at a Montana mine, where the sediment control structure and other mine facilities failed during a large storm event.[6]

L. FEIS FAILS TO ANALYZE THE IMPACTS OF GROUNDWATER DRAWDOWN TO HYPORHEIC FLOW TO BULL TROUT SPAWNING

As described in our comments, (2011 Frissell Letter (p. 11-12) and (p. M-324 and M-345, Voume 3, FEIS)) and herein, the FEIS does not adequately analyze effects to Bull trout from groundwater drawdown, particularly the effects on hyporheic flow exchange and upwelling of alluvial groundwater that determines habitat suitability for bull trout spawning. "It is very important that analysis of the Montanore project thoroughly elucidate the potential effects on both the spring sources and the tributary water tables and hyprheic flow exchange."

According to the BIOP, bull trout redds are often constructed in stream reaches fed by springs or near other sources of cold groundwater (Goetz 1989, Pratt 1992, Rieman and McIntyre 1996).

The Biological Opinion identifies the habitat components that are essential for the biological needs of bull trout. The first characteristic listed for bull trout critical habitat are the presence of springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia. (P. 41, BIOP)

Groundwater dynamics are likely to impact seasonal streamflows, as emphasized in the BiOp, but will likely also affect hyporheic flow exchange and upwelling of alluvial groundwater that determines habitat suitability for bull trout spawning (Baxter et al. 1999, Baxter and Hauer 2000), rearing, migration, and overwinter survival. Altered linkages of surface flows (expressed as reduced surface flow volume in the low flow season) are also likely to adversely affect summer and winter temperatures in ways that harm migrating, spawning, and rearing bull trout, as described in more detail in my comments on the SDEIS (Frissell 2011).

The FEIS focuses solely on the effects of groundwater drawdown to habitat availability, but fails to provide adequate information to evaluate the effects of groundwater drawdown on these important habitat requirements for bull trout.

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[5] U.S. Bureau of Land Management, "Climate Change: Extreme Conditions: Do Plans of Operations Need to Include an Ark?" Presented by David Williams at Mines, Design, Operations and Closure Conference, April 29-May 3, 2012. Available at: http://www.mtech.edu/mwtp/conference/2012_presentations/Dave%20Williams.pdf; Montana Department of Environmental Quality, "Zortman: Dealing with Extreme Weather Events," Presented by Warren McCullough and Wayne Jepson at Mines, Design, Operations and Closure Conference, April 29-May 3, 2012. Available at: http://www.mtech.edu/mwtp/conference/2012_presentations/Warren%20McCullough.pdf

[6] Ibid.

This is inadequate. According to Frissell (2011), two kinds of field assessments are necessary to accurately project the effects of changes in groundwater to the EFBR and EFRC. The objectives of these assessments are twofold: 1) to establish the net overall contribution of deep groundwater to the streams in question across seasons, under prevailing pre-project catchment conditions; 2) to establish the spatial distribution of deep groundwater contributing sources within the lengths of these two streams inhabited by bull trout.

Understanding the overall direct contribution of deep groundwater (that which would be depleted by the mine) to the streamflow regimes of EFRC and EFBR is very feasible today using a relatively new but simple method called *endmember mixing analysis* of geochechemical trace elements (Frisbee 2010, Winter et al. 2007, Liu et al. 2014). Elements found in groundwater (relatively long residence time), shallow groundwater (shorter or mixed residence time) and surface runoff (very short residence time); the relative concentrations of these in stream water, spring water, and ground water sampled from wells can provide a great deal of information on the role of deep groundwater sources in sustaining stream flow both across seasons, and from headwaters to downstream areas. Simple water sampling and chemical analysis could provide a highly reliable estimate of the baseline contribution of deep groundwater to present-day streams, including a map of the critical locations of spring sources where groundwater charges the surface streams. This map of course could then be overlaid on projections of mine-related alteration of the deep groundwater system to reveal what specific habitats in each stream would be affected by groundwater alterations, and to what relative seasonal magnitude. These analyses would also reveal the total proportion of present-day stream volume that is charged by deep groundwater, hence allow validated estimation of the expected proportional depletion of surface flows.

Synoptic streamflow measurements conducted at regular intervals up and down the length of EFBR and EFRC are a simple way of further quantifying and identifying locales of flow contribution from groundwater sources. (Opsahl et al. 2007, Clow et al. 2003, Kondolf et al. 1987).

Frissell's previous comments (adopted by the Objectors) recognized importance of the process of exchange of water between shallow alluvial aquifer and surface waters, known under the technical term of hyporheic flow, for supporting high-quality native salmoninds, especially bull trout. The subsurface component of hyporheic flows is charge both by the downwelling, of stream surface water through the substrate and soils, but also is charged by deeper groundwater feeding shallow alluvial aquifer across the valley floor. Modeling reported in the FEIS greatly simplifies the connection between deep groundwater that will be affected by mining, accounting only for emergence of groundwater in surface springs that feed streams. The multitude of deep groundwater flow contributions to shallow subsurface valley floor alluvial aquifers that strongly control hyporheic flow processes is not accounted for. In other words, what are essentially subsurface springs feed shallow groundwater just as springs that emerge at the surface feed surface streams. The concern with this omission from the analysis is that reduced contribution of groundwater to shallow alluvial aquifers is likely to result in strong unpredicted effects, including loss of surface stream flow and potential desiccation of stream reaches that now maintain perennial flow, and reduced hyporheic upwelling resulting in greatly increased summer warming and winter freezing.

Groundwater depletion, therefore, can have far more far-reaching consequences than the simple direct effect on the volume of surface flow in affected streams, which is the only effect actually accounted for in the FEIS analysis. Groundwater dynamics are likely to impact seasonal streamflows, but also affect hyporheic flow exchange and upwelling of alluvial groundwater that determines habitat suitability for bull trout spawning (Baxter et al. 1999, Baxter and Hauer 2000), rearing, migration, and overwinter survival (Jakober et al. 1998). Altered linkages of surface flows (expressed as reduced surface flow volume in the low flow season) are also likely to adversely affect summer and winter temperatures (Poole and Berman 2001, Wright et al. 2005) in ways that harm migrating, spawning, and rearing bull trout, as described in greater detail in my comments on the SEIS.

The complexity of linkages between regional or catchment-scale groundwater, which would be altered by the Montanore proposal, is difficult to quantify, and impossible to quantify in the absence of field data and stream-specific assessments. Two kinds of field assessments are necessary to accurately project the effects of changes in groundwater to the EFBR and EFRC. The objectives of these assessments are twofold: 1) to establish the net overall contribution of deep groundwater to the streams in question across seasons, under prevailing pre-project catchment conditions; 2) to establish the spatial distribution of deep groundwater contributing sources within the lengths of these two streams inhabited by bull trout.

Groundwater dynamics are likely to impact seasonal streamflows, as emphasized in the BiOp, but will likely also affect hyporheic flow exchange and upwelling of alluvial groundwater that determines habitat suitability for bull trout spawning (Baxter et al. 1999, Baxter and Hauer 2000), rearing, migration, and overwinter survival (Jakober et al. 1998). Altered linkages of surface flows (expressed as reduced surface flow volume in the low flow season) are also likely to adversely affect summer and winter temperatures in ways that harm migrating, spawning, and reading bull trout, as described in more detail in my comments on the SDEIS.

The USFS could have very feasibly gathered field information on the affected streams that would more accurate assessment of potential effects of groundwater impacts on stream habitat that is critical to native fishes. However as obviously important as this issue is, based on any review of the relevant scientific literature, the Forest Service did not collect or report any of the necessary information. Understanding the overall direct contribution of deep groundwater (that which would be depleted by the mine) to the streamflow regimes of the affected streams is very feasible today using a relatively new but simple method called *endmember mixing analysis* of geochechemical trace elements (e.g., Frisbee et al. 2011). Elements found in groundwater (relatively long residence time), shallow groundwater (shorter or mixed residence time) and surface runoff (very short residence time); the relative concentrations of these in stream water, spring water, and ground water sampled from wells can provide a great deal of information on the role of deep groundwater sources in sustaining stream flow both across seasons, and from headwaters to downstream areas. Simple water sampling and chemical analysis could provide a highly reliable estimate of the baseline contribution of deep groundwater to present-day streams, including a map of the critical locations of spring sources where groundwater charges the surface streams. This map could then be overlaid on projections of mine-related alteration of the deep groundwater system to allow analysis of what specific habitats in each stream would be affected by groundwater alterations, and to what relative seasonal magnitude. These analyses would also

reveal a far more valid projection of total proportion of present-day stream volume that is charged by deep groundwater, hence allow validated estimation of the expected proportional depletion of surface flows.

Synoptic streamflow measurements conducted at regular locations up and down the length of EFBR and EFRC would be a straightforward and easily implemented way of further quantifying and identifying locales of flow contribution from groundwater sources. (Opsahl et al. 2007, Clow et al. 2003, Kondolf et al. 1987). Although recognized for many years as an appropriate method for synoptically assessing the stream flow impacts from watershed alterations, this information apparently was not collected or reported in preparing the FEIS-- other than at a handful of selected locations, far fewer than would be necessary to draw reliable inference.

This type of baseline information and analysis is essential to understanding the potential effects of the proposed Montanore Project on bull trout. *See also* Frissell, May 12, 2015 Comments on FEIS (attached and incorporated into this Objection). The Regional Office must fully respond to Dr. Frissell's analysis and comments.

In the response to comments, the FEIS states:

> Appendix C of the SDEIS and FEIS provided a detailed discussion of the agencies' conceptual monitoring plans for Alternative 3 and includes surface and groundwater monitoring (Section C.10) that would be required to be conducted during the Pre-Evaluation and Evaluation Phase to assess the effects of mine inflows on groundwater levels and streamflows, as well as effects on surface water and groundwater quality. As discussed in Section 3.8.2 of the FEIS, the Construction Phase would begin after MMC analyzed the data from the Evaluation Phase, collected the necessary data for final design, submitted final design plans to the agencies, and received agency approval to implement the Construction Phase. MMC would update the mine area and impoundment area 3D models after additional data were collected during the Evaluation Phase.

FEIS at M-345.

This is inadequate. This type of data and analysis should be part of NEPA, and considered for determining alternatives, the effects of the proposed project, and effective mitigation.

M. FEIS RELIES ON BIOP REQUIREMENTS FOR TAKE THAT CAN'T BE MITIGATED

As described in our comments and hrein, the USFS fails to maintain and protect threatened bull trout. The Forest Service relies on the Biological Opinion (BIOP) to meet requirements of Endangered Species Act. According to the BIOP, predicted decreases in baseflows, changes in water temperature (Libby Creek), and increases in sedimentation related to mining activities are anticipated to adversely affect and likely result in a take of the egg, larval and juvenile life history stages by harming or impairing feeding, breeding and sheltering patterns of adult and juvenile bull trout.

FWS anticipates certain activities associated with the proposed mining operation would result in some incidental take of bull trout in the form of harm related to expected degradation of aquatic habitat conditions including spawning habitat, egg incubation habitat, juvenile rearing habitat and food supply and the related risk to bull trout life history stages. The Fish and Wildlife Service uses surrogates to measure the amount or extent of incidental take that will be authorized.

The BIOP outlines the extent and magnitude of baseflow depletions that will be used as a surrogate to determine the level of anticipated take that may result from the Proposed Action. The FWS BIOP states that "Take will be exceeded if the measured level of baseflow depletions exceeds the predicted baseflow depletions described for each stream (see Table 5) and each "Streamflow Impact Estimate Location" (see Figure 9). Take will also be exceeded if the length of affected stream reach is more than that described for each affected stream.

For the Kootenai River Core Area, and specifically for Libby Creek, the Service predicts that stream flow during baseflow conditions would decrease 9.3 percent during the Construction Phase, 20.4 percent during the Operations Phase, 18.5 percent during the Closure Phase, and 13 percent decrease in baseflows would likely occur indefinitely. These predicted flow depletions would affect 13,186 feet of Libby Creek occupied by bull trout between the Cabinet Mountains Wilderness Boundary downstream to the Libby Adit Water Treatment Plant outflow point to Libby Creek (see Figure 3).

For Poorman Creek, the Service predicts that stream flow during baseflow conditions would decrease 3.2 percent during the Construction Phase, 10.3 percent during the Operations Phase, 9.7 percent during the Closure Phase, and a 11.6 percent decrease in baseflows would occur into an indefinite future. These predicted flow depletions would occur in occupied bull trout habitat (predicted flow depletions were modeled at a point 1,069 feet upstream of the confluence of Poorman Creek with Libby Creek, see Figure 9) and would affect an unknown distance of Poorman Creek upstream of that point.

For the Lower Clark Fork River Core Area, and specifically for East Fork Rock Creek, the Service predicts (see Table 5) that stream flow during baseflow conditions would decrease 8.9 percent during the Post-Closure Phase and this baseflow depletion would occur into an indefinite future. At a minimum, these predicted flow depletions would affect 4,792 feet of East Fork Rock Creek, occupied by bull trout, located between the confluence of the East Fork and West Fork Rock and extending upstream to the RC-3. Impacts of streamflow depletions were not estimated for the stream reach located upstream of this location (KNF BA 2013), however, some level of impact would likely occur for some unknown distance upstream, potentially affecting another 12,067 feet of occupied bull trout habitat.

For the mainstem Rock Creek, the Service predicts (see Table 5) that stream flow during baseflow conditions would decrease 2.4 percent during the Closure Phase, and a 7.7 percent decrease in baseflows would occur during the Post-Closure Phase and into an indefinite future. These predicted flow depletions would intermittently occur, at some unknown level, in occupied bull trout habitat located within 28,008 feet of Rock Creek with perennial flow downstream of the confluence of the East Fork and West Fork Rock Creek.

For the East Fork Bull River, the Service predicts (see Table 5) that stream flow during baseflow conditions would have a maximum decrease of 1.9 percent during the Operation Phase, 4.3 percent during the Closure Phase, and a 12.9 percent decrease in baseflows would occur during the Post-Closure Phase and into an indefinite future. Predicted flow depletions, at levels less than the maximum estimates, are estimated at three sites on the East Fork Bull River. Therefore, predicted flow depletions at various levels at or less than the stated maximum values would occur in the 36,378 feet of occupied bull trout habitat of the East Fork Bull River.

Yet, this fails to ensure protection of threatened bull trout, as required by law as noted herein, because adequate baseline data for these wilderness streams hasn't been collected or provided in the FEIS, and it will take a considerable number of years of data collection to provide representative data.

More importantly, there's no way to mitigate against exceedances of take (e.g., larger than allowed baseflow reductions) because mitigation measures aren't available to prevent groundwater drawdown upon mine closure, when underground tunnels are filling with groundwater. The FEIS makes it clear that grouting and bulkheads have not been demonstrated to work over the long-term, and once the underground tunnels are dewatering at the end of mining, it's too late. *See also* above discussion including Dr. Chambers May 2015 report (attached).

If the BIOP can't demonstrate that bull trout can be protected by providing measures of take that are enforceable, the project cannot be approved.

The BIOP also relies on sediment levels as a surrogate for "take," yet neither the FEIS nor the BIOP include baseline data for sediment levels in the effected streams. The collection of baseline data is proposed to occur after the ROD has been issued, which violates NEPA.

As noted herein, it should also be noted that compliance with the ESA no-jeopardy standard, even if true (which is not the case here), does not meet the USFS's other substantive standards. Under the Organic Act, and the 36 CFR Part 228 regulations, the agency cannot approve a PoO unless it can be demonstrated that all feasible measures have been taken to "minimize adverse impacts" on National Forest resources. **"The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R.§ 228.8(e)."** Rock Creek Alliance v. Forest Service, 703 F.Supp.2d 1152, 1164 (D. Montana 2010) (Forest Service PoO approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries)(emphasis added). "Under the Organic Act the Forest Service must minimize adverse environmental impacts where feasible and must require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170. Such protective requirements are not limited to discharges to streams but necessarily include flow reductions, which are shown herein will adversely affect bull trout and other fish species and their habitat.

N. FAILURE TO EVALUATE IMPACTS OF, AND PROTECT AGAINST, SEDIMENT ON BULL TROUT AND BULL TROUT SPAWNING, ESPECIALLY DURING THE EVALUATION AND CONSTRUCTION PHASES.

As noted in the previous comments and herein, the FEIS has inadequate baseline data for sediment levels in substrate in the effected area. Furthermore, the FEIS fails to evaluate the potential impacts of increased sediment on bull trout during the Evaluation and Construction Phases.

Sediment impacts from roads required to implement the Proposed Action and those proposed to be closed under the Wildlife Mitigation Plan were modeled by KNF and DEQ (2013) using the Water Erosion Prediction Project (WEPP) (Elliot 2004). The modeled results represent an estimate of delivery potential from each road based on regional and project-specific variables that were incorporated into the model (Table 6). All streams, with the exception of East Fork Bull River, would be adversely impacted by sediment before the benefits of the Proposed Action were realized. Sediment input would increase during the evaluation phase only (2 years) in Libby Creek, Bear Creek, Cable Creek, Midas Creek, Poorman Creek, and West Fisher Creek.

Sediment input would increase during the evaluation phase and the first two years of construction (4 years) in Big Cherry Creek, Ramsey Creek, and Fisher River. Sediment input would increase in East Fork Rock Creek and Rock Creek (mainstem) during the first two years of construction.

The FEIS dismisses these increases in sediment, based on long-term reductions in sediment once the mitigation measures are put into place. Yet, the BIOP indicates that these short term increases could have significant impacts:

"Given the existing degraded baseline condition of the watershed, a temporary (2 years) increase in sedimentation could adversely affect about one half of the designated bull trout critical habitat in Bear Creek as critical habitat is located downstream of sediment producing activities in Cable Creek."

The FEIS also misrepresents likely effects of instream flow changes on Bull Trout habitat and populations. As noted in Dr. Frissell's previous comments, the USFS's methods to analyze the effects of instream flow reductions on bull trout were inadequate. For the BA, the Forest Service borrowed a model previously developed and tested in Idaho, but which has not been validated or calibrated for northwest Montana, including the streams in question. The substantive conclusion reported from this analysis was that even under existing flow conditions, both the EFBR and EFRC are flow-limited and for that reason should not support consistent returns of river- or lake-migrant adult bull trout. As a result, the FEIS predicts only incremental rather than threshold changes of bull trout abundance.

Bull trout in the Lower Clark Fork have clearly and consistently succeed in adapted to prevailing conditions, migrating and spawning successfully in both systems (DeHaan and Bernall 2013, Al-Chokhachy et al. 2015). The fact that the record clearly establishes that taken together, these streams receive the vast majority of migrant bull trout in the Lower Clark Fork Complex Core Area is *prima facie* evidence the instream flow model's assumptions are incorrect and the model

is not valid for analysis of flow effects on bull trout in those streams—certainly not without local calibration and adjustment. While the model used in this analysis appears to incorrectly predict that these streams should not support migratory bull trout, it is no doubt true that even marginal losses of surface flow could greatly impact these migratory fish and cause disproportionate harm to the populations. Bull trout in the East Fork Bull River and its tributaries and the Rock Creek drainage exist in streams where summer and fall baseflows are just above a tipping point. That is, reduction in streamflow from current conditions is more likely to produce abrupt, threshold losses of abundance of bull trout than the small, incremental changes the FEIS reports.

Despite Dr. Frissell's detailed comments in the SEIS raising the matter, and despite recognition of its importance for bull trout in the Biological Opinion for the Montanore project, the Forest Service failed to attain critical information pertinent to assessing the distribution of groundwater-surface water connections and the distribution of hyporheic upwelling zones that are of critical importance to bull trout spawning and egg incubation (Baxter and Hauer 2000), as well as overwinter habitat (Jakober 1998). While sediment core samples are relevant to assessing the permeability of streambeds for hyporheic flow exchange, the FEIS does not consider this linkage, so it fails to asses and disclose how worsening short-term fine sediment conditions in some important streams could lead to deteriorating hyporheic flow condition. Reduced hyporheic flow exchange can further lead to harmful summer temperature increases and winter temperature decreases (Poole and Berman, 2001, Wright et al. 2005, Poole et al. 2008). The direct and the indirect hydrologic effects of fine sediment accumulation will act concurrently to reduce the quality of spawning and egg incubation habitat in streams affected by short-term sediment inputs. These harms are likely to be severe enough to threaten the persistence of already depressed populations of bull trout and westslope cutthroat trout.

The Forest Services' reliance on an instream flow model imported from a different region, without defensible validation or calibration to the streams affected by Montanore, appears arbitrary, capricious, erroneous, likely gravely consequential to the populations at risk, and results in a distorted characterization of the likely effects of Montanore project on several fish populations that are critical for conservation of bull trout and westslope cutthroat trout. Given the large scope of impact of this project on streams, the great importance of the affected streams to current bull trout populations and recovery, site-specific information on variation in streamflow, fish migration, and spawning over time and space should have been required so that accurate and validated site-specific analyses of habitat use could be done. Such studies are not extremely expensive or difficult, and can be carried out over two or three field seasons at reasonable cost. *See also* Frissell, May 12, 2015 Comments on FEIS (attached and incorporated into this Objection). The Regional Office must fully respond to Dr. Frissell's analysis and comments.

Overall, as noted herein, the USFS failed to fully review these impacts to bull trout and adequately protect the species and its habitat in violation of NEPA, the ESA, NFMA, and the Organic Act/228 regulations.

O. FAILURE TO FULLY EVALUATE AND MITIGATE THE EFFECTS OF TEMPERATURE

As expressed in our comments and herein, increases in water temperature as a result of mine operations will illegally harm bull trout and other aquatic life, and no mitigation measures have been identified or adequately evaluated to address those impacts.

Bull trout are found in the coldest waters and among the most limited range of temperatures. Bull trout require water temperatures ranging from 36°F to 59°F, with temperatures at the low end of this range required for successful incubation (USFWS 1998). Constant temperatures greater than 60°F have been shown to be intolerable for bull trout (Maret *et al*. 2005).

> Stream temperature is an important criterion for aquatic life and Montana has surface water aquatic life standards for temperature that restrict temperature changes. For bull trout, water temperatures ranging from 36° to 59°F are needed, with adequate thermal refugia available for temperatures at the upper end of this range. Constant temperatures greater than 60°F have been shown to be intolerable for bull trout (Maret *et al*. 2005).

FEIS at 676 to 677. Yet, according to the FEIS, "Based on measured temperatures of the Water Treatment Plant influent, discharges from the Water Treatment Plant during the Evaluation, Construction, and Operations phases may occur at temperatures up to 65°F." According to p. 31, Appendix L, FEIS, the temperature of the discharge of mine and adit water is expected to be between 56°F and 65°F based on measured temperatures of the Water Treatment Plant influent.

The amount of water released from the Water Treatment Plant into Libby Creek is considerable – predicted to increase base flows at LB 300 by 79% during the construction phase (p. 625, Volume 1, FEIS), and by 138% during the Operations phase (p. 630).

According to the BIOP, "This predicted flow augmentation of warm water (exceeding stream ambient water temperature during bull trout reproductive and rearing time periods) would affect 1,144 feet of Libby Creek from the Libby Adit Water Treatment Plant outfall downstream to Libby Creek Falls. No estimate of the magnitude of expected flow augmentation at baseflow conditions or water temperature influence downstream of Libby Creek Falls was provided in the KNF BA. It is anticipated that both factors (increased flow and increased water temperature) would be detectable and potentially affect bull trout for some distance downstream of the Libby Creek Falls."

The impacts to bull trout are especially problematic as the BIOP states that there is a known spawning location at the discharge point, "These relatively warm water inflows would occur at the 'existing outfall' (see Figure 3) near LB-300 (see Figure 9) where a significant volume of water augmentation is predicted (see Table 5) to occur at baseflow conditions at a known bull trout spawning location."

"These relatively warm water inflows would occur at the "existing outfall" (see Figure 3) near LB-300 (see Figure 9) where a significant volume of water augmentation is predicted (see Table 5) to occur at baseflow conditions at a known bull trout spawning location." (p. 95 BIOP). "The addition of warm adit water to Libby Creek is likely to have a harmful effect on bull trout

spawning success and egg incubation, which would result in a negative causal effect to the population of bull trout that is currently maintained at a low persistence level in Libby Creek." (p. 124 BIOP).

"During baseflow conditions (fall and winter) the adit water is projected to double the baseflow with water that is significantly warmer than the stream water temperature. This impact occurs in a bull trout spawning and egg incubating section of Libby Creek. The Service does not agree that impacts of this level of water temperature change can be "assumed to be minor". The temperature of adit water is well above known water temperatures at which bull trout spawn and well above water temperatures of optimal bull trout egg incubation. Potential impacts include delay or postponement of spawning and decreased egg incubation survival. Both impacts could significantly affect reproduction of the relatively small population of bull trout residing in the impact zone and the upstream portions of Libby Creek." (p. A-40, BIoP).

Montana law does not allow waivers or mixing zones that would cause such impairment.

> WATER QUALITY ASSESSMENT (1) No mixing zone will be granted if it would threaten or impair existing beneficial uses. Before any mixing zone is allowed, the applicant must provide information, as requested by the department, to determine whether a mixing zone will be allowed as well as the conditions which should be applied. (2) In making its determination, the department will consider the following factors: (a) Biologically important areas: the presence of fish spawning areas or shallow water nursery areas within the proposed mixing zone or a "shore hugging" effluent plume in an aquatic life segment will support a finding that the mixing zone may be inappropriate during the spawning or nursery periods.

ARM 17.30.506. As shown herein, the exceedence of the temperature standard and discharges will certainly "threaten or impair [the] existing beneficial uses" of bull trout and its habitat.

The FEIS states that the DEQ will determine effluent limits for each outfall during the MPDES permitting to protect aquatic life. Yet, the FEIS fails to identify and evaluate potential mitigation measures for how to reduce effluent temperatures to meet these effluent limits to protect fisheries. It merely speculates that it can be accomplished by discharging to infiltration percolation ponds adjacent to Libby Creek or by direct discharge and a mixing zone (FEIS at 677), with no supporting data to demonstrate that these mitigation measures will be sufficient to protect bull trout and its habitat.

Despite this, the FEIS admits that it did not fully review these critical issues, stating that: "Due to the numerous factors affecting stream temperatures and the constantly changing stream temperature regime that occurs, it is difficult to predict how the project may alter stream temperature, or to what extent stream temperatures may be changed." FEIS at 677.

Such elevated temperatures of 56 to 65 degrees F, over 15 to 25 degrees F above the roughly 40 degree F temperature in the Libby Creek receiving water (*see* FEIS Appendix K data) not only fail to protect bull trout and other fish species and aquatic life, it violates the applicable state temperature standard. Under Montana law and regulation, only "a 1ºF maximum increase above naturally occurring water temperature is allowed within the range of 32ºF to 66ºF." ARM

17.30.623(2)(e).

Under NEPA, the fact that the state agency may in the future require mitigation for the temperature violation does not excuse the USFS's failure to fully review this during the NEPA process. The USFS is required under NEPA to obtain this critical information. The USFS repeats the fundamental error previously found by the Ninth Circuit, that the federal agency cannot defer to a state permitting process that never underwent the rigorous public and agency review requirements in NEPA.

> A non-NEPA document – let alone one prepared and adopted by a state government- cannot satisfy a federal agency's obligations under NEPA. Klamath-Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 998 (9th Cir.2004).

South Fork, 588 F.3d at 726. The Ninth Circuit rejected as "without merit" arguments that the USFS may avoid its NEPA duties where a "facility operates pursuant to a state permit under the Clean Air Act." Klamath-Siskiyou, 387 F.3d at 998.

The USFS asserts that this satisfies its duty to conduct "detailed analysis" NEPA. This ignores the rule in South Fork, as well as the Ninth Circuit's holdings in Klamath-Siskiyou, 387 F.3d at 998, Kern v. BLM, 284 F.3d 1062, 1073 (9th Cir. 2002)("tiering to a document that has not itself been subject to NEPA review is not permitted"), and Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 811 (9th Cir. 1999) ("Such reliance is impermissible under the NEPA regulations, which only permit tiering to prior EIS's.").

Under NEPA: "If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement." 40 CFR §1502.22(a). "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under §1502.22(b)." Native Village of Point Hope v. Jewell, 740 F.3d 489, 499 (9th Cir. 2014).

Simply referring to the future state MPDES permit process, FEIS at 677, is not a substitute for the USFS's duties under NEPA and CWA/Organic Act/228 to ensure against any potential water standard violation or impairment of beneficial uses. At a minimum, the vague reference to the discharge water meeting standards "when mixed with receiving creek water" does not protect bull trout and other fish species and supporting aquatic life, nor represent an adequate NEPA analysis of impacts and mitigation.

Overall, under these USFS mandates protecting water uses and quality, the agency cannot allow any discharge that might exceed the 1 degree standard, as well as any other action authorized by the USFS which would raise stream temperatures a similar amount (e.g., lowering of flows resulting in temperature increases).

P. FAILURE TO MAINTAIN AND PROTECT FISHERIES AND WILDLIFE; FAILURE TO PROVIDE MITIGATION MEASURES TO PREVENT THESE IMPACTS; FAILURE TO ANALYZE THE EFFECTIVENESS OF MITIGATION MEASURES

In addition to the herein noted failures to adequately review the baseline conditions, direct, indirect and cumulative impacts, and protect against adverse impacts to fisheries, aquatic life, wildlife, surface and ground water, and habitat, the FEIS and DROD suffer from the following errors, as noted in our previous comments and herein.

The DROD, Attachment 7, outlines the terms and conditions required by the USFWS to meet the ESA. It states that "Prior to FS authorization to initiate the Resource Evaluation Phase for the Montanore Project, MMC will prepare for FS approval, in consultation with the Service and Montana Fish Wildlife and Parks (MFWP), a bull trout mitigation guidance plan specific to each bull trout Core Area potentially affected by the Project. The Core Area Bull Trout Mitigation Guidance Plans (Kootenai River and Lower Clark Fork River Core Areas) will identify and quantitatively evaluate potential bull trout population effects, potential habitat effects, and overall bull trout conservation effects of specific mitigation concepts described below in the "Conceptual Bull Trout Mitigation Plan" section. These potential beneficial effects of proposed mitigation actions will be compared to predicted adverse effects to bull trout populations identified in the KNF BA (2013) and this BO." (Draft ROD, p. 3, Attachment 7).

Attachment 7 further admits that the bull trout mitigation plan has not yet been developed, requiring that **after the FEIS and ROD are completed**, only then will the USFS and MMC "[i]dentify and implement, in a timely manner, means to minimize predicted adverse project effects to bull trout in the action area." DROD Attachment 7 at 1. Thus, according to the FWS, the "identification [of] means to minimize predicted adverse project effect to bull trout" has not yet occurred.

This directly contradicts the USFS's conclusion in the FEIS and DROD that the USFS has fully complied with its duty to "minimize adverse environmental effects" under the Organic Act and part 228 regulations. In other words, how can the USFS's assertion be valid when the DROD admits that the "identification of means to minimize adverse effects" has not yet been done? As such, and as noted herein, the USFS cannot issue the ROD until all such "identification" and mitigation measures have been fully reviewed and subject to public and agency comment under NEPA.

Attachment 7 further states that for numerous affected resources, the required mitigation plan has yet to be submitted. "Within one calendar year of issuance of the FS authorization to implement the Resource Evaluation Phase of the Montanore Project, MMC will prepare for FS approval …." DROD Attachment 7 at 3-4. For example, such future mitigation plan includes the requirement to prepare:

> [A] feasibility assessment of actions needed (with tasks, costs, scheduling, etc.) to further develop mitigation planning and implementation of the Libby Creek mitigation project, see "Conceptual Bull Trout Mitigation Plan", below. Prior to submittal to the FS for approval of the Libby Creek mitigation project feasibility assessment, MMC will conduct

> a meeting to facilitate consultation with the MFWP, FS, Service, and other appropriate regulatory agencies and stakeholders as determined by the FS. Final designs by MMC and construction authorizations by FS, if the project is deemed feasible by the FS in consultation with the agencies, will be completed within one year of FS approval of the feasibility assessment.

DROD Attachment 7 at 3.

This is followed by similar requirements for "feasibility assessments for mitigation plans" for Flower Creek, Rock Creek Invasive Species Eradication Project, Copper Creek project feasibility assessment, and West Fork Rock Creek Feasibility Assessment project. Id. at 3-4.

As noted herein, this violates NEPA because this type of analysis should have been done as part of the EIS process to understand the potential impacts of the project, analyze mitigation measures, and evaluate the effectiveness of those mitigation measures. At present, there is no way to determine whether these mitigation projects are feasible, whether they could effectively offset the impacts to bull trout from the proposed project, and what the alternatives are if these aren't successful.

The DROD also states that "Within 5 years of MMC receiving FS authorization to commence the Construction Phase, MMC will fully complete, unless otherwise agreed to by FS in consultation with the Service, implementation of mitigation measures identified, and approved by FS in consultation with FWS, in the overall Bull Trout Mitigation Plan (KNF BA 2013), the two Core Area Bull Trout Mitigation Guidance Plans (specifically including the Libby Creek, Flower Creek, Rock Creek, Copper Gulch, and West Fork Rock Creek mitigation projects, see 1. a, and 1. c. thru g, above), and continuation of the Fisheries Monitoring Plan (see 8, below). DROD Attachment 7 at 7.

The DROD further states that "During the Operation phase, MMC will fully complete, unless otherwise agreed to by FS in consultation with the Service, implementation of mitigation measures and activities identified, and approved by FS in consultation with the Service, in the overall Bull Trout Mitigation Plan (KNF BA 2013), the two Core Area specific Bull Trout Mitigation Guidance Plans and the Fisheries Monitoring Plan." DROD Attachment 7 at 8.

Once again this violates NEPA and the Organic Act/Part 228 because there is no analysis showing that these mitigation measures will successfully offset the impacts of the project. Furthermore, it includes uncertainty that the FWS and Service may not implement the plan as described.

Finally, the DROD states that "Prior to authorization of the Closure and Reclamation phase, MMC will prepare an overall bull trout mitigation audit report detailing and quantifying progress toward accomplishment of bull trout mitigation objectives. The audit report will include documentation of the extent and magnitude of take that occurred to bull trout as a result of the Proposed Action. Findings and MMC recommendations will be presented for approval by the FS, in consultation with the Service and MFWP. The purpose of the mitigation audit report will be to determine if and what adaptive management changes will be required by the FS to the Bull Trout Core Area Mitigation Guidance Plans, Fisheries Monitoring Plan, or MOU(s) (see 2. b,

above) prior to authorization of the Closure and Reclamation phase in order to meet the objectives of the Bull Trout Mitigation Plan (KNF BA 2013)." DROD Attachment 7 at 8.

This also violates NEPA, because impacts could occur during the evaluation, construction and operation phase, which won't be identified until Closure of the mine. If mitigation measures have failed, the audit won't make that determination until mine closure. At that time, the agencies will have little leverage to compel the company to take action.

The DROD further describes the conceptual mitigation projects that may be considered as mitigation: "The following outlines conceptual mitigation projects and some technical mechanisms and details that should be considered for inclusion in Bull Trout Core Area Mitigation Guidance Plans. Development of these Plans by MMC and approval by the FS, in consultation with the Service, is required prior to FS authorization to initiate the Resource Evaluation Phase (see VIII. D. 1. a., above). If initial fish population and habitat surveys, see Fisheries Monitoring Plan (VIII. D. 10., below), or other studies and considerations on subject streams indicate that any of the proposed conceptual mitigation measures are not feasible, then the Service requires that additional mitigation measures on that stream or on other bull trout occupied or historically occupied streams within the subject bull trout Core Area may be substituted for these initial mitigation measure concepts (see "adaptive management", VIII. D. 8., above). The Service further requires that any substitute mitigation actions be comparable in function and magnitude to those listed below. It is anticipated that the Bull Trout Mitigation Plan (KNF BA 2013), Core Area Bull Trout Mitigation Guidance Plans, Fisheries Monitoring Plan and supporting MOU(s) and other MMC commitments may be modified or amended on a recurring three year basis throughout the life of the mine (see "bull trout mitigation audit reports", above)." DROD Attachment 7 at 10.

Once again this is inadequate. The FEIS should include a bull trout mitigation plan that is more than conceptual. It should take a hard look at the ability to mitigate for impacts, and provide analysis on the effectiveness of these mitigation measures. The public can have no confidence that mitigation measures are available or will be completed with a conceptual plan that won't be evaluated until far into the future.

In the response to comments, the FEIS states that:

> Potential mitigation projects were revised for the FEIS and presented in sections 2.5.7.3 and 3.6.4.3.6. Further details on the possible mitigation options were provided in the BA. The various mitigation options included on-site and off-site mitigation in which genetic reserves for bull trout populations were created or secured, factors limiting bull trout populations were identified and rectified, or non-native fish eradication methods were employed. **If successful**, these mitigation projects would offset the impacts to bull trout and their critical habitat and be beneficial to bull trout populations within the affected core areas. **The effectiveness of the mitigation would be assessed through monitoring.**

FEIS at M-266 (emphasis added). The FEIS also admits that the USFS has not yet determined the effectiveness of the mitigation for bull trout. "Mitigation has been proposed to account for any impacts that occur to bull trout upstream of these discharges in Libby Creek. **Mitigation success would be determined by monitoring results** to ensure that impacts to bull trout

populations are accounted for appropriately." FEIS at M-258 (emphasis added). "As presented in the BA and in Section 3.6.4.3.6 of the FEIS, mitigation projects have been proposed to account for the adverse impacts to bull trout in both streams, and, **if successful**, would be expected to offset the projected impacts. **The success of these projects would be based on data from continued monitoring efforts**." Id. (emphasis added).

However, as noted herein, post-approval monitoring is not a substitute for fully analyzing the effectiveness of mitigation measures during the NEPA process. Yet monitoring prior to actual mitigation of impacts merely "serve[s] to confirm the appropriateness of a mitigation measure, but that does not make it an adequate mitigation measure in itself." Alaska Wilderness League v. Kempthorne**,** 548 F.3d 815, 828 (9th Cir. 2008), *vacated as moot*, 555 F.3d 916 (9th Cir. 2009). There is no assurance that the eventual mitigation plan will be subject to public review under NEPA. Id.

> Even if mitigation measures may guarantee that the data will be collected sometime in the future, the data is not available during the EIS process and is not available to the public for comment. Significantly, in such a situation, the EIS process cannot serve its larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process.

Northern Plains, 668 F.3d at 1085.

Regarding these purported mitigation measures, as well as the other mitigation measures relied upon by the USFS, the FEIS fails to provide the detailed analysis of the mitigation measures, including a detailed analysis of their effectiveness, as required by NEPA.

> [NEPA] does require that an EIS discuss mitigation measures, with "sufficient detail to ensure that environmental consequences have been fairly evaluated." Methow Valley, 490 U.S. at 352, 109 S.Ct. 1835. An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective. *Compare* Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1381 (9th Cir.1998) (disapproving an EIS that lacked such an assessment) *with* Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 477 (9th Cir.2000) (upholding an EIS where "[e]ach mitigating process was evaluated separately and given an effectiveness rating"). The Supreme Court has required a mitigation discussion precisely for the purpose of evaluating whether anticipated environmental impacts can be avoided. Methow Valley, 490 U.S. at 351–52, 109 S.Ct. 1835(citing 42 U.S.C. § 4332(C)(ii)). A mitigation discussion without at least *some* evaluation of effectiveness is useless in making that determination.

South Fork Band Council v. Dept. of Interior, 588 F.3d 718, 727 (9th Cir. 2009)(rejecting EIS for open pit mine for failure to conduct adequate review of mitigation and mitigation effectiveness).

Within the Kootenai core area, mitigation projects are proposed for Upper Libby Creek and Flower Creek. On the West side, possible mitigation projects include West Fork Rock Creek and

the main stem of Rock Creek to account for losses that may occur in EFRC, with Copper Gulch was the location chosen for mitigation of any losses in the EFBR. (p. 432, volume 1, FEIS).

The Draft ROD outlines potential mitigation measures for specific drainages in the Lower Clark Fork and Kootenai Core areas. These mitigation measures are inadequate. For example, in section 2.5.7.3 (p.184+) the FEIS describes the general outline of measures prescribed "to fully offset" adverse impacts to bull trout populations and critical habitat expected from the Montanore mine project. This mitigation proposal is critically lacking in three important respects, placing bull trout and other fishery resources in the affected streams in serious danger of extirpation from these waters. First, the mitigation measures are only very vaguely specified, and very little of the necessary evidence is provided that they can as a practical matter actually be implemented. In other words, the so-called mitigation measures are little more than wishful thinking. Second, there is little evidence provided from the scientific literature and other sources that verifies that the kinds of mitigation measures specified have ever been, or are likely to be, effective in restoring depressed or depleted bull trout and cutthroat trout populations. Third, even if they were successful the proposed mitigation measures and monitoring called on to inform them would take many years or decades to implement, while the harmful impacts to bull trout and other fish populations are in many cases manifest in the initial years or decades of the project. Virtually no assurance is provided these populations can survive the short-term impacts in order to benefit from long-term improvements generally called for in the mitigation measures.

The FEIS admits to vast uncertainty in many critical aspects of the project's short-term impact, explaining that this large measure of uncertainty justifies the lack of specific or quantitative analysis in the FEIS of effects of the project on fishes. The list of short-term impacts includes at least the following: effects of fine sediment increases on already depleted and marginally viable bull trout populations, the potential discharge of copper and other toxins into Libby Creek, and the adverse effect of expected, flow reductions in Rock Creek and East Fork Bull River on fish populations. In the absence of effective short-term mitigation measures to ensure that sensitive bull trout and other fish population can survive the known short- and medium-term impacts of mine development and operations, the projected longer-term benefits of monitoring and so-called "adaptive management" of mitigation measures are and biologically meaningless, and stand as empty claims. Unless near-term uncertainty of survival in the face of short-term impacts can be resolved and population persistence assured, projections of long-term benefit to these affected species are spurious.

Given the recognized precarious present biological status of these populations, in particular of bull trout, simply assuming they will survive a short-term burden of additional impacts to their habitat is unsupported. In particular, bull trout are federally listed as a threatened species for the very reason that most populations, including those affected by this project, exist with marginally viability and a high probability of extinction by virtue of past and ongoing harms to habitat—notwithstanding newly introduced harms as exemplified by the Montanore project. The FEIS provides no information to substantiate that the affected fish populations are recovering or that they exist in a demographic state that will allow them to persist under the burden of additional impacts to their habitat.

In fact even if those impacts are deemed to be "short term," they would be imposed on a collection of populations whose extant status is highly precarious, demographically speaking.

The short-term impacts acknowledged in the FEIS could greatly increase the likelihood of local extinction not only of Bull trout in the directly affected tributaries, but in Bull River, Rock Creek, and the Libby Creek watersheds. As discussed in the previous comments and herein, this project specifically endangers several of the most important remaining core populations of bull trout in the Lower Clark Fork and the Kootenai River basins in Montana—including those few that originate within designated wilderness and therefore are largely protected from land and water developments other than mining. Moreover, other populations of bull trout within these basis that are not directly affected by this project are for the most part more in diminished, fragile and precarious condition, and each of them faces extant, untreated threats that increase the likelihood of their loss, and none of them is effectively protected from future adverse impact from landscape development, roads, invasive species, and climate change. These same concerns apply readily to native cutthroat trout within the affected streams, and careful assessment with a modicum of biological data would likely show they also apply to sculpin and redband rainbow trout.

For example, sediment impacts have been recognized as particularly important and pervasive for bull trout viability, distribution and abundance (e,g.,Watson and Hillman 1997, Baxter et al. 2000, among many others), but while the FEIS offers projection of sediment delivery resulting from the project, the extensive treatment of fishery impacts (FEIS Chapter 3.6) still lacks any quantitative or systematic analysis of expected biological impact of those erosion and sediment conditions on the fish populations that would be affected by the project. Given the importance and potential long term or irreversible (in the case of local population extinctions) consequences of sediment delivery to sensitive trout habitat, an EIS of this scope should rely on more than vague guesswork and hand-waving about sediment impacts and their possible mitigation.

Alternatively, for mitigation to be effective, the FEIS must demonstrate that if local extinction of populations occurs, bull trout and cutthroat populations can be re-established through reintroduction measures. This is problematic, as the literature on reintroductions of native trout is replete with failures and unanticipated setbacks (see Harig and Fausch 2002). The scientific record for man-made reintroductions of bull trout are so far particularly lacking in any example of successful re-establishment of a self-sustaining, viable population, despite a number of documented attempts (at least one reintroduction is currently in progress, but it is too early to evaluate the results).

The mitigation sections in the FEIS spell out no clear means by which reintroduction could be accomplished, while at the same time recognizing that the presence of competing non-native fish species may hinder the ability of native fishes to persist and recover. Available scientific research suggests that the primary factor hindering further expansion of introduced brook trout might be the persistence of robust populations of native bull trout and westslope cutthroat trout in streams with very high-quality habitat (Adams and Frissell 2002, Adams et al. 2000, Hitt et al. 2003). It shows that native trout reintroductions have been particularly unsuccessful in cases where habitat has been adversely altered by past or ongoing actions, where habitats remain accessible to colonization by nonnative fish in the ecosystem (Clancy et al. 1997), and where reintroduced populations are confined to small, headwater streams naturally vulnerable to fish population loss from floods, fire, or severe drought (Harig and Fausch 2002, Dunham et al. 2011). All three conditions prevail in streams throughout the area surrounding the Montanore

project. Dunham et al. (2011) provided an objective framework for evaluating the feasibility and likely success of bull trout reintroductions, but despite its presumed importance for proposed mitigation, no formal evaluation of this kind was apparently completed for this FEIS.

Rather than acknowledging uncertainty and developing a management strategy that provides some certainty of preserving existing fish populations that are the necessary building blocks for future post-project recovery, this FEIS cites uncertainty to obscure its analysis of risks and impacts. This FEIS cites uncertainty and rests on vagueness of its own scientific assessments to justify imprecise and rudely described mitigation measures to be based on unspecified analysis of future monitoring results, rather than relying on interim protections derived from best available scientific data and established conservation biological principles.

The Ninth Circuit has rejected the agency's similar attempt to avoid reviewing impacts and mitigation:

> As we have observed on multiple occasions, "general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Klamath–Siskiyou*, 387 F.3d at 993–94 (quoting *Ocean Advocates*, 361 F.3d at 1128). 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.

Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1134 (9th Cir. 2007).

The USFS cannot fail to protect these resources simply by saying that it is "uncertain" whether the impacts may occur.

> [W]e [the federal courts] nonetheless have a responsibility to ensure that an agency's decision is not arbitrary. **It is not enough for the Service to simply invoke "scientific uncertainty" to justify its action**. As the Supreme Court has explained, "[r]ecognizing that policymaking in a complex society must account for uncertainty ... does not imply that it is sufficient for an agency to merely recite the terms 'substantial uncertainty' as a justification for its actions." State Farm, 463 U.S. at 52, 103 S.Ct. 2856. The Service must rationally explain why the uncertainty regarding the impact of whitebark pine loss on the grizzly counsels in favor of delisting now, rather than, for example, more study. *See* id. Otherwise, we might as well be deferring to a coin flip.

Greater Yellowstone Coalition v. Servheen, 665 F.3d 1015, 1028 (9th Cir. 2011)(emphasis added). Also, the uncertainties concerning the extent of impacts does not relieve the Forest

Service of the responsibility under NEPA to analyze the mitigation of likely impacts at the outset. South Fork Band Council v. U.S. Department of the Interior, 588 F. 3d 718 (9th Cir, 2009).

> BLM argues that an effectiveness discussion was not required because it is impossible to predict the precise location and extent of groundwater reduction, and that problems should instead be identified and addressed as they arise. But NEPA requires that a hard look be taken, if possible, *before* the environmentally harmful actions are put into effect. *National Parks & Conservation Association v. Babbitt,* 241 F.3d 722, 733 (9th Cir.2001).
>
> In this instance, the EIS states that BLM has identified fifty perennial springs and one perennial creek that are the most likely to dry up, though among these it is impossible to "conclusively identify specific springs and seeps that would or would not be impacted." **That these individual harms are somewhat uncertain due to BLM's limited understanding of the hydrologic features of the area does not relieve BLM of the responsibility under NEPA to discuss mitigation of reasonably likely impacts at the outset**. *See National Parks,* 241 F.3d at 733("lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.") Even if the discussion must necessarily be tentative or contingent, NEPA requires that the agency give some sense of whether the drying up of these water resources could be avoided.

South Fork Band Council, 588 F.3d at 727 (emphasis added).

Specific Comments on Proposed Mitigation Measures by Location The following is excerpted from Frissell, May 12, 2015 Comments on FEIS (attached and incorporated into this Objection). The Regional Office must fully respond to Dr. Frissell's analysis and comments.

Specific Comments on Proposed Mitigation Measures by Location

Copper Gulch (FEIS, p.185): The FEIS identifies actions in this stream as mitigation for losses of fish habitat and populations in the East Fork Bull River. The FEIS acknowledges that 1) if bull trout ever occurred in this stream they were extirpated and apparently no longer remain; 2) the stream is affected by long term sediment accumulation and streambed aggradation (commonly the result of streamside and watershed erosion, sometimes in tandem with large or frequent natural landslides); 3) non-native brook trout are present and would have to be "eliminated" for bull trout to prosper. While various actions involving genetic assessment are mentioned, none of these address the core question of why the agencies think populations of native fish in Copper Gulch specifically could be increased.

Several bodies of fact undermine that FEIS presumption. First, restoring native trout populations to streams where they have disappeared has proven to be very seldom successful; in most cases, whatever factors that eliminated trout in the first place of prevented them from naturally recolonizing remain in effect. These sometimes prove very difficult to identify. If suitable habitat existed, migratory bull trout would likely already have naturally recolonized Copper

Gulch from the Bull River. Second, there is no known means of physically altering and stabilizing stream channels in highly aggraded, sediment-impacted alluvial floodplain systems so that they provide high-quality habitat for native fishes. Once altered to this condition, reduction of watershed-wide erosion and streamflow sources, protection and regrowth of vegetation and re-establishment of soils and wood debris on floodplains and stream banks, coupled with many decades and perhaps centuries of natural flood flows are likely necessary to restore high-quality habitat conditions in streams like lower Copper Gulch. Third, it is well known there are no recognized feasible means of eliminating brook trout from streams of this size and type (Clancy et al. 1997). There is much complexity of habitat and commonly areas of groundwater upwelling that make removal by chemicals or electrofishing always less than 100 percent effective; more important, the stream would presumably remain vulnerable to recolonization by brook trout (and brown trout) from Bull River. Investigation of Bull River tributaries by AVISTA (2010) has shown that some reduction of brook trout abundance is possible through selective electrofishing, but because many fish escape removal and live to reproduce relatively rapidly, maintaining suppressed numbers and benefits to native fish will require application of treatment on a semiannual basis in perpetuity, plus unproven and undeveloped technologies including weirs or barriers of adequate design to reliably selectively block undesired fish during higher stream flows, while allowing desired native species to pass. The AVISTA findings are consistent with those of numerous other studies showing that benefits of selective species suppression commonly reverse within a few years after treatment ceases (Clancy et al. 1997).

As a relatively small watershed, Copper Gulch is likely inherently limited in its ability to support a self-sustaining bull trout population because the length of suitable habitat for bull trout is short and the stream lacks side tributaries that can serve as refugia for fish when the main stream is impacted by floods, debris flows, severe drought, or other disturbances. Smaller streams with such unbranched channel networks are less likely to support self-sustaining bull trout populations than larger streams with multiple branches (Dunham and Reiman 1999, Reiman and McIntyre 1995). Moreover, the lower miles of Copper Gulch and surrounding lands are in private ownership and lack public access. There appears to be no assurance in the record that the landowners have an interest in granting access to the stream and its many acres of floodplain land for purposes of fishery restoration for mine mitigation. In my opinion these factors converge to make it extremely unlikely that bull trout or cutthroat trout can be successfully reintroduced or enhanced through feasible habitat and invasive species control measures in Copper Gulch.

West Fork Rock Creek (FEIS, p. 185) The FEIS states that this stream appears to be "underutilized" by bull trout, and prescribes a "limiting factors analysis" to identify what measure could be taken to increase bull trout abundance there to compensate for losses in Rock Creek downstream anticipated form the Montanore project. First, I know of few cases where such a "limiting factors analysis" results in an unequivocal conclusion about what aspects of the system can be treated to increase fish abundance. I know of many fewer cases where such a diagnosis led to actions that successfully increased fish depleted fish populations—except in cases where limiting factors were as obvious as depleted streamflow or thermal or chemical pollution from point sources. In many cases, the conclusion of such studies is that populations in streams like West Fork Rock Creek are limited by habitat conditions outside of the stream itself, which limit survival or movement of migrating juvenile or adult bull trout, as one simple example. I have visited and surveyed the West Fork Rock Creek and Rock Creek mainstem, and

in my opinion the most obvious and parsimonious explanation for lower-than-expected bull trout abundance in West Fork Rock Creek is that present-day high sediment loads and resulting discontinuous stream flows through sediment-aggraded riffles in the mainstem of Rock Creek limit the migration of both adult and juvenile bull between West Fork Rock Creek, mainstem Rock Creek, and the Clark Fork River system. Short-term sediment releases from mine development are expected to *increase* sediment loads and aggravate already harmful conditions in mainstem Rock Creek,
In fact worsening the condition that most likely limits bull trout in West Fork Rock Creek.

The notion that some mysterious, presently unknown factor that can be identified and corrected through unspecified mitigation measures can be both identified by future monitoring, then treated in such a way that it could effectively overcome the obvious limiting conditions imposed by the sediment-choked mainstem of Rock Creek is frankly little more than wishful thinking, and is not anchored in citation or specifically cited experience, or sound scientific reasoning. As a conservation or mitigation measure I can only characterize it as very far-fetched.

Rock Creek (Mainstem) (FEIS, p. 186)

Based on speculation that brook trout invasion of upper Rock Creek is prevented by seasonally intermittency of some reaches of mainstem Rock Creek, the FEIS proposes removal of brook trout mainstem Rock Creek to benefit bull trout by fending off a presumptive invasion by brook trout that has not heretofore occurred. The FEIS suggests that brook trout removal could "could contribute to offsetting losses to upstream populations of bull trout…" However, this presumptive benefit is based on sheer speculation; there is no evidence presented to showing the magnitude of adverse effect, if any, that brook that the extant brook trout population in mainstem Rock Creek is currently having on bull trout. The presumption of biological competition is highly suspect, because in order to biologically compete with brook trout, bull trout first have to be able to survive the physical rigors of their habitat. Given the extremely unstable, summer-warm, and silt-laden spawning and rearing habitat present in mainstem Rock Creek, it is doubtful that many young of the year bull trout survive to be vulnerable to competitively displaced, eaten, or otherwise harmed by brook trout. The far more likely situation is that habitat conditions are highly unfavorable to bull trout reproduction and survival, but marginally favorable for brook trout reproduction and survival. Moreover, as stated above, brook trout removal is not eradication. Removal repeated *in perpetuity* would likely be necessary to sustain any gains that might arise from brook trout removal in Rock Creek. Moreover, having studied brook trout dispersal and invasion intensively in my own research (Adams and Frissell 2002, 2001, Adams et al. 2000), I strongly doubt that a summer and fall seasonal barrier alone will hinder brook trout movement effectively enough to permanently prevent reinvasion. Brook trout also move upstream during spring and early summer, and fall months in wet years when Rock Creek flows continuously with snowmelt and rain-generated runoff, and fish are free to distribute throughout the system. It is foolhardy to speculate that a transient seasonal flow discontinuity alone is sufficient to prevent reinvasion by brook trout, if indeed eradication could ever be achieved.

In my opinion the proposed mitigation measures for mainstem Rock Creek are ill considered and are highly unlike to be effective in producing the desired outcomes. Bull trout recovery in mainstem Rock Creek is will certainly not occur as long as the unstable, aggraded, fine-

sediment-choked stream channel conditions prevail-- a consequence of past and ongoing soil and vegetation disturbance and erosion from poorly constructed and ill-maintained roads, logging, and other sources in the watershed. Even if watershed conditions are improved and man-caused sediment sources are eventually reduced, the accumulations of bedload sediment and trapped fines will only be removed slowly, hence is likely to hinder recovery of habitat conditions and bull trout populations in mainstem Rock Creek for many decades to come. Furthermore given their current precarious status, I question whether bull trout will persist in Rock Creek for the many years necessary to benefit from theoretical distant future improved habitat given that near-term their habitat would be even more severely impacted by additional sediment from mining sources. To have any reasonable likelihood of success, mitigation must be based reasonable assessments and sound biological data and analysis, not speculation and overoptimistic hopes.

Libby Creek (FEIS, p. 186)

The FEIS notes that the impacts of flow reductions in Libby Creek could "hypothetically could be off-set" by installing wood aggregate structures to stabilize what is currently an unstable, sediment-rich reach. The FEIS cites no published papers or comparable successful examples of such treatments working to improve bull trout habitat in problems in streams that have been so impacted by channel destabilization, nor in streams that have been impacted by flow reductions. In fact it is well-recognized in the scientific literature—including in my own published work evaluating numerous projects of this type in the field (Nawa and Frissell 1997), and the work of others specifically focused on bull trout mitigation (e.g., McPhail and Baxter 1996) —that instream structures of this kind (or any known kind) are ineffective at stabilizing streams impacted by loss of channel stability, sediment aggradation. Even when they remain in place, artificially installed wood accumulations often have opposite the intended site-specific effect-- that is, they can promote increased gravel deposition and shallowing of the stream in the area of the structure, rather than deepening. The outcomes of structural placements in aggraded, sediment rich streams are highly unpredictable, and there is no certainty at all of benefit that is sufficiently extensive and persistent to increase survival and abundance of bull trout.

Moreover I am aware of no published studies to substantiate the premise that placement of artificial structures in streams can reliably compensate for the depletion of stream flows. Stabilizing a specific length of eroding streambank through site-specific measures as in the Libby Creek Demonstration Upper Cleveland, and Lower Cleveland Projects (FEIS p. 332) bears scant resemblance to and does not substantiate a capability of stabilizing and restoring an entire ediment-aggraded reach or segment of stream. Streamflow volume is the ultimate determinant of fish habitat suitability and productivity, and any benefits that might in theory accrue from installation of artificial structures in practice would have little capacity to persist. In unstable channel situations, any beneficial effects of structures are commonly cancelled out by unanticipated and biologically harmful side effects. Moreover, climate change in the region has already led to reduced summer streamflows, with the expectation this trend will continue in the future (Arrigoni 2010, Rieman et al. 2007, Hamlet et al. 2005).

The only effective means of restoring habitat in aggraded, sediment-laden alluvial stream reaches is to reduce human-elevated sediment sources in the watershed broadly speaking, and allow the channel, floodplain, and riparian zone to gradually move sediment out of the system and adjust

to stabilizing watershed conditions—a slow and incremental process which we know takes decades. Conditions for bull trout Libby Creek overall are affected by a plethora of roads, logging and other activities in Libby Creek drainage that are managed for multiple other purposes than mining and remain beyond the scope of this mitigation plan and FEIS. Considering the sum of these factors, in my opinion it is extremely likely that continued climate-driven streamflow reduction, acting in tandem with mining-related streamflow losses, will far more than offset any potential marginal benefit from installing log structures kn Libby Creek is highly unlikely to produce any significant net benefit to bull trout, in the near term or long term.

Flower Creek (FEIS, p. 186)

The FEIS states that Flower Creek would only be considered for mitigation in the event that mitigation measures in upper Libby Creek failed to produce the desired results. Therefore Flower Creek would only be treated at some time many years after project initiation, meaning that the likely failure of mitigation measures in Libby Creek would result in long window of time during which a presently marginally viable bull trout population is subject to worsened habitat conditions that will inhibit recovery, Mitigation measures can only be successful in the long term if bull trout survive the initial period of years of increased adverse impact to their habitat. In my opinion, that is far from a given, and in fact extinction of the Libby Creek population of bull trout is a rather likely event under the scenario proposed in the FEIS.

Flower Creek is reported to be a "historical bull trout stream," but whether or not it presently supports any remnant of bull trout seems to be unanswered in the FEIS. It is easy from an examination of maps and Google Earth or other aerial imagery of land cover that Flower Creek is a highly disturbed and developed watershed. The stream is truncated in its middle by an impassable water supply dam. Introduce brook trout occur in Flower Creek both above and below this dam. The dam and reservoir alter flow and thermal regimes of Flower Creek in ways that are harmful to native fishes, and have very likely promoted the proliferation of nonnative fishes (Stanford et al. 1996). It does not appear that withdrawal of water at the reservoir is likely to be reversed, given it constitutes a significant portion of Libby's water supply, and the dam is already undergoing reconstruction without the bypass features suggested in the FEIS. Not mentioned in the FEIS is that a large area of watershed below the dam is outside of national forest, in private ownership, threaded by a high density and growing road network that fuels ongoing exurban residential and commercial construction, forest clearance, and land use conversion. I visited the watershed in April of 2015 and it was evident that roads on both private and national forest land in the watershed are poorly designed and ill-maintained, receive heavy use, and serve as both chronic and intermittent catastrophic sediment sources to Flower Creek and its tributaries. Moreover, the mainstem of Flower Creek lies in a deep canyon surrounded in its lower reaches by private lands with restricted access. Accessibility of Flower Creek mainstem for purposes of actions intended to improve bull trout habitat or reduce introduced species appears to be very limited.

This long list of ongoing and multiple sources of impact and limitations to access and intervention in Flower Creek cast strong doubt on the notion floated in the FEIS that Flower Creek is a likely candidate for restoration of bull trout. In my opinion, existing impacts and ongoing development in Flower Creek make it extremely unlikely that even with aggressive

restoration actions a viable and self-sustaining bull trout population could be restored in Flower Creek within the this century. Flower Creek is an extremely poor candidate for a "genetic reserve' or contingency habitat in event Libby Creek suffers catastrophic loss in the face of spills or failures. [end of Frissell Comments]

In addition, as noted herein, the purported mitigation involving bulkheads and pillars lacks the required scientific support, lacks evidence of an analysis of its effectiveness, and indeed will likely not work. The SDEIS and FEIS looked at potential mitigation measures to reduce those effects, including grouting and bulkheads. With respect to grouting, the agencies state in the response to comments (p. M-336) that "the effectiveness of grouting over the long term (i.e., 100 years or more) is uncertain. Fracture grouting of storage facilities typically use a design life of 50 years, and the effectiveness of grouting may decrease beyond 50 years. Because this mine would be of room-and-pillar design, grouting of fractures would be difficult, but technically feasible." Thus grouting can only be considered a temporary mitigation that would prevent water inflows during mining, but would not protect and provide necessary mitigation to the wilderness hydrologic system in perpetuity, as it must.

"The agencies' evaluation of the constructed bulkheads … concluded that man-made concrete bulkheads would **unlikely** provide the necessary mitigation over the long-term." FEIS at 156 (emphasis added). It further states that, "There is limited information on functionality of hydraulic barriers once mining is completed, and there are no data on the design life of these structures." FEIS at 583.

In the FEIS, the agency incorporated a new mitigation measure to try to offset the dewatering effects of the proposed mine. It proposes to use barrier pillars with constructed bulkheads in the underground tunnels, concluding that leaving a pillar of unmined ore with characteristics similar to the constructed bulkheads simulated in the modeling would **likely** provide the necessary mitigation over the long-term, again assuming the hydrologic modeling was representative of underground conditions." FEIS at 156 (emphasis added).

The FEIS concludes that, "Leaving barrier pillars overcomes some of the limitations associated with constructed bulkheads, such as long-term effectiveness (Werner 2014). It further states that "Although a constructed bulkhead would be made of concrete and grout and a barrier pillar would be made of in-place unmined rock, they both would function in a similar manner to reduce the hydraulic conductivity between sections of the mine void. Consequently, the agencies considered the modeling of the bulkheads to be an equivalent simulation of the agencies' mitigation of leaving one or more barriers, if necessary, during the Operations Phase and constructing bulkheads at the access openings at closure." FEIS at 583.

The agency's analysis and conclusions fail to meet the requirements of NEPA because there is no data to support the agency's conclusion that the barrier pillars with constructed bulkheads will last longer or be more effective than the constructed bulkheads. After all, this mitigation measure still ultimately relies on the long-term effectiveness of bulkheads.

The only document cited in the FEIS discussion of the long-term efficacy of the mitigation alternatives categorically states that bulkheads are not proven to be effective in the long-term. Werner (2014)(attached) states that **"The long-term effectiveness of constructed low**

permeability bulkheads is not documented as there are no available data on service life for time horizons commensurate with the Post-Closure modeling scenario."

Relying on Werner fails to support and undercuts the FEIS' conclusions. The proposed mitigation measures are undemonstrated and it is therefore uncertain whether they will be able to effectively reduce the effects of groundwater drawdown and its subsequent impacts. The agency's decision to consider bulkhead modeling to be a reasonable equivalent simulation of the agencies' new mitigation proposal is unsupported. (*See* FEIS Volume 1 p. 569-70). Whether alone or combined with barrier pillars - the use of bulkheads is flawed because their use is undemonstrated and unproven and their long-term efficacy is unknown. Rather than demonstrate the efficacy of bulkheads in the rock wall, the FEIS actually undercuts the FEIS' conclusion that bulkheads are a demonstrated technology to control water.

The timeframes for re-establishing groundwater recharge of the mine void and steady state conditions are estimated by the groundwater modeling at over 1,000 years (See FEIS section 3.10.4.3.3, Post Closure Phase). Werner states that "Because the bulkheads would be installed within the mine and because access adits would be plugged well before any significant hydraulic head developed, there likely would be no practical means of monitoring or assessing whether the bulkheads would function as designed, or any options for taking corrective action if they proved to be ineffective post-closure. The inability to monitor the success of a bulkhead, or to remediate a potentially ineffective bulkhead would render its near-and long-term functionality unknown as an effective and reliable groundwater control system."

Werner (2014) goes on to say that the service life of concrete and grout is variable depending on the materials used in the concrete and grout mixes, construction specifications, and environmental conditions. As a result, there is no documented consensus on design life due to the multitude of variables affecting bulkhead longevity. A reasonable estimate is about 100 years. This timeframe coincides with the development of reinforced and special-mix concrete as a reliable building material. If 100 years is used for the bulkhead design life, then even before the bulkheads are subjected to the anticipated final hydraulic head, the concrete materials and grout would potentially begin to deteriorate and seepage through and around the bulkhead system could increase.

The FEIS fails to provide any supporting data to show that the proposed barrier pillars and constructed bulkheads will last longer or be any more effective than the bulkheads or grouting proposed in the SDEIS. The FEIS asserts that by leaving a wall of rock in place and using smaller bulkheads, it decreases the probability of failure. To the contrary, Werner (2014) makes it clear that a safe assumption is to expect failure within 100 years.

The FEIS actually raises more questions than it provides as answers regarding management of pressure (water head) with bulkhead and/or chambers. A primary unanswered question is whether the probability of total failure decreases as the pressure differential decreases between chambers? It seems likely that the overall pressure will equilibrate within and between bulkheaded chambers - but that will not reduce the total pressure that could build up. If one link in the bulkhead/chamber chain fails, it is reasonable to conclude that a significant flow path for groundwater could be the result. This is demonstrated by the FEIS modeling which purportedly showed that a handful of barrier pillars and plugs would reduce the ground and surface water

losses due to mine drainage. (FEIS Volume 1, p. 575). This also strongly suggests that seepage through a plug or the fractures in a barrier pillar (e.g. due to blasting) could significantly increase the ground and surface water losses. What matters most is that the FEIS does not provide sufficient support to conclude with any reasonable certainty what is likely to happen. This includes, but is not necessarily limited to, pressure levels within bulkheaded chambers, pressure between bulkheaded chambers, or reasonable worst-case scenarios if one or more chamber/bulkhead should fail.

Regarding the efficacy of the rock wall, it is presumed to be sufficient but that is not demonstrated, particularly given the mining activities potential to cause fracturing, etc. The FEIS fails to provide any supporting data to show that the proposed barrier pillars and constructed bulkheads will last longer or be any more effective than the bulkheads or grouting proposed in the SDEIS. The FEIS asserts that by leaving a wall of rock in place and using smaller bulkheads, it decreases the probability of failure. In fact, Werner (2014) makes it clear that a safe assumption is to expect failure within 100 years.

Werner (2014) identifies that the service life of concrete and grout is variable depending on the materials used in the concrete and grout mixes, construction specifications, and environmental conditions. The FEIS relies on many of Werner's conclusions - but the FEIS does not support its proposed design alternative(s) with design or other data that actually supports a conclusion that the rock wall and/or bulkheads in the rock will prove effective or durable. Werner's report cited by the FEIS instead underscores the multitude of variables affecting bulkhead longevity – meaning that it is highly likely that over time the concrete materials and grout would potentially begin to deteriorate and seepage through and around the bulkhead system would thereby increase.

The timeframes for re-establishing groundwater recharge of the mine void and steady state conditions are estimated by the groundwater modeling at over 1,000 years (See FEIS section 3.10.4.3.3, Post Closure Phase). Werner (2014) states that: "Because the bulkheads would be installed within the mine and because access adits would be plugged well before any significant hydraulic head developed, there likely would be no practical means of monitoring or assessing whether the bulkheads would function as designed, or any options for taking corrective action if they proved to be ineffective post-closure. The inability to monitor the success of a bulkhead, or to remediate a potentially ineffective bulkhead would render its near-and long-term functionality unknown as an effective and reliable groundwater control system." As a result, the FEIS fails to demonstrate that the bulkhead/chamber design will actually work or prove durable -- and if a failure is detected it is largely impossible to correct the problem

For a more detailed analysis of these issues and critique of the FEIS and USFS rationales, *see* Dr. David Chambers, "*Comments on the use of plugs in the Final Environmental Impact Statement for the proposed Montanore mine to mitigate long-term surface and groundwater losses*", May 5, 2015 (attached). Dr. Chambers' comments are adopted and incorporated as part of this Objection and must be fully addressed by the Regional Office.

Thus, the FEIS fails to demonstrate that there are any mitigation measures available to reduce the impacts of groundwater drawdown on the rivers, streams and lakes in the affected area though

out mine operations, closure and post-closure. And, the agency's decision to consider the modeling of the bulkheads to be an equivalent simulation of the agencies' new mitigation proposal is unfounded. As a result, the FEIS cannot rely on the proposed mitigation measure when determining the effects of dewatering on the Wilderness, groundwater dependent ecosystems, overlying Outstanding Resource Waters, and the effects to bull trout and other aquatic life that these waters support.

As described in our comments (FEIS at M-254) and herein, the FEIS fails to maintain and protect fisheries and wildlife, fails to analyze mitigation measures and provide adequate mitigation.

According to the FEIS, the Biological Assessment (USDA Forest Service 2013a) concluded that the project may affect, and is likely to adversely affect, bull trout in twelve streams: Libby Creek, Big Cherry Creek, Bear Creek, Cable Creek, Midas Creek, Poorman Creek, Ramsey Creek, West Fisher Creek, Fisher River, Rock Creek, East Fork Rock Creek, and the East Fork Bull River under Alternative 3. (p. 429, Volume 1, FEIS).

The BA, BIOP and FEIS disclose that adverse impacts to bull trout populations in the Kootenai and Lower Clark Fork Core areas would be expected to occur with the project mainly through the decreased streamflow during the low flow period of the year.

In the FEIS Summary the FEIS acknowledges the harm to fish habitat in all alternatives:

> In all alternatives, reduced streamflow would reduce habitat availability at low flow in Ramsey, Poorman, Libby Creek above the Libby Adit, East Fork Rock Creek, Rock Creek and East Fork Bull River, particularly during closure and post-closure phases. Reduction in habitat availability would range up to 20 percent. The agencies' bull trout mitigation plan would mitigate for the reduction in habitat availability in Alternatives 3 and 4.

FEIS at S-46.

This is also stated in the response to comments (M-255):

> Decreases in habitat resulting from changes in flows during the low flow period of each year would occur and would adversely affect bull trout populations in west side streams under all alternatives. Such impacts would also impact bull trout populations in the east side streams, including the resident populations in Libby Creek upstream of Libby Falls.

Estimated impacts on bull trout habitat availability due to a reduction in base flows in analysis area streams in Alternative 3 are outlined in Table 76. Towards the end of the Operations Phase impacts resulting in decreased flows would be greater to all east side streams in Alternative 3. Such decrease would result in substantial reductions in habitat availability and quality for fish populations. Upstream of the Water Treatment Plant discharges to Libby Creek, baseflows would decrease to their maximum extent (20 percent) at the end of the Operations Phase, resulting in decreased habitat availability for the resident bull trout that inhabit a portion of this reach up to the CMW boundary. Based on the BA analysis, habitat availability for these trout would

decrease in this of Libby Creek by an estimated 8, 10 and 20 percent for adult, juvenile and spawning habitat, respectively.

"Decreased streamflow during low flow conditions would affect bull trout populations in Rock Creek and the East Fork Bull River. Flow reductions would affect reaches of both streams that support much of the bull trout spawning known to occur currently in these streams. Spawning habitat was estimated to decrease up to 9 and 13 percent in the East Fork Rock Creek and East Fork Bull River, respectively (Table 76). The East Fork Bull River supports the highest densities of bull trout in the Bull River drainage (Washington Water Power Company 1996) and is considered a stronghold for bull trout populations in the Lower Clark Fork Core Area." FEIS at 431.

The FEIS should have included a bull trout mitigation plan that is more than conceptual. It should take a hard look at the ability to mitigate for impacts, and provide analysis on the effectiveness of these mitigation measures. The public can have no confidence that mitigation measures are available or will be completed with a conceptual plan that won't be evaluated until far into the future.

In the response to comments, the FEIS states that:

> Potential mitigation projects were revised for the FEIS and presented in sections 2.5.7.3 and 3.6.4.3.6. Further details on the possible mitigation options were provided in the BA. The various mitigation options included on-site and off-site mitigation in which genetic reserves for bull trout populations were created or secured, factors limiting bull trout populations were identified and rectified, or non-native fish eradication methods were employed. If successful, these mitigation projects would offset the impacts to bull trout and their critical habitat and be beneficial to bull trout populations within the affected core areas. The effectiveness of the mitigation would be assessed through monitoring.

FEIS at M-266. However, as noted herein, post-approval monitoring is not a substitute for fully analyzing the effectiveness of mitigation measures during the NEPA process.

Within the Kootenai core area, mitigation projects are proposed for Upper Libby Creek and Flower Creek. On the West side, possible mitigation projects include West Fork Rock Creek and the main stem of Rock Creek to account for losses that may occur in EFRC, with Copper Gulch was the location chosen for mitigation of any losses in the EFBR. FEIS at 432. As noted herein, these mitigation measures are inadequate.

In its response to comments, the FEIS further states:

> The effect of water quantity changes on habitat availability for bull trout were evaluated quantitatively based on the analyses presented in the BA (KNF 2013a). Maximum changes in low flows and the resulting changes in habitat availability for bull trout that would occur at stream sites in the analysis area during each phase were modeled rather than presenting a range of effects, to represent when the greatest effects would occur during each phase. Changes in sediment delivery to analysis area streams as a result of the project were assessed quantitatively

> using the WEPP analysis (KNF 2013b), with the resulting effects on aquatic life evaluated qualitatively. The cumulative effects of all of these factors on bull trout populations and habitat were discussed in the BA (KNF 2013a) and summarized in the "Threatened and Endangered Species" subsections of section 3.6.4 of the FEIS. The BA determined that the short-term sediment increases in some locations could adversely affect bull trout and their habitat, but that these increases were adequately mitigated by the long-term sediment decreases to streams that would benefit bull trout habitat. Changes to water quality, **other than temperature**, were considered to be negligible, and **the effect of the project on stream temperatures was considered uncertain**. **Decreases in habitat resulting from changes in flows during the low flow period of each year would occur and would adversely affect bull trout populations in west side streams under all alternatives. Such impacts would also impact bull trout populations in the east side streams, including the resident populations in Libby Creek upstream of Libby Falls.**

FEIS at M-255 (emphasis added). In addition to the previous concerns noted with these conclusions and the lack of preventative mitigation, the FEIS admits that impacts to temperature due to low flows are of significant concern. Yet, "the effect of the project on stream temperatures was considered uncertain." M-255. As noted herein, the agency cannot simply avoid its NEPA duties (and substantive duties to protect fisheries and habitat) by labeling this critical impact "uncertain." Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1134 (9th Cir. 2007); Greater Yellowstone Coalition v. Servheen, 665 F.3d 1015, 1028 (9th Cir. 2011); South Fork Band Council v. U.S. Department of the Interior, 588 F. 3d 718, 727 (9th Cir, 2009).

Overall, the dewatering and water losses resulting from the Mine, both predicted and potential, for all waters discussed herein, violates the USFS' duties "to maintain and protect fisheries and wildlife which may be affected by the operations." 36 CFR 228.8(e). In addition, these impacts violate the agencies' duties to protect sensitive, threatened, and endangered species, and their habitat, under the Endangered Species Act (ESA), Organic Act of 1897, and the National Forest Management Act (NFMA)(including Forest Plan standards protecting fish and wildlife habitat). These impacts also violate the USFS' duties to "minimize adverse environmental impacts on National Forest surface resources," including water resources, fish and wildlife, and habitat, under 36 CFR 228.8.

In addition, the USFS cannot allow any operation that may violate any water quality standard, including the protection of beneficial uses, under Section 313 of the Clean Water Act. Due to the predicted elimination and/or significant reduction of these waters, and the aquatic life dependent on these waters, the project cannot be approved.

O. ROCK LAKE WOULD BE DEGRADED IN VIOLATION OF MONTANA'S NONDEGRADATION LAW AND THE WILDERNESS ACT

As described in our comments (M 331-334, and M-336, Volume 3, FEIS) and herein, the USFS has failed to ensure against the adverse effects of the project to the overlying Cabinet Mountains Wilderness Area, including Wilderness lakes such as Rock Lake. According to the FEIS, mining

of the ore body would unavoidably reduce streamflow and spring flows, and affect lake levels in Rock and St. Paul lakes.

> Mining of the ore body would unavoidably reduce streamflow and spring flows, and affect lake levels in Rock and St. Paul lakes. Decreased streamflows would result in the loss of aquatic habitat in the Libby Creek, Rock Creek, and East Fork Bull River watersheds. Water levels are predicted to reach steady state conditions 1,150 to 1,300 years after mining ceased.

FEIS at 466.

According to the FEIS, all mine alternatives would reduce groundwater discharge to area streams and Rock Lake due to mine and adit inflows and lowering of the potentiometric surface **during all five mine phases** (Evaluation, Construction, Operations, Closure and Post-Closure). FEIS at 719. In Alternative 3, the 3D model predicted a decrease of 47 acre-feet per year (14,989,165 gallons) of groundwater flowing into Rock Lake without mitigation (36 acre-feet with mitigation) during operations (year 6-25). Effects on Rock Lake during the post closure phase would be a reduction in groundwater flow to the lake and reduction in water stored in the lake. FEIS at. 639. The Geomatrix groundwater modeling study (2011) showed that the largest groundwater drawdown in the modeling domain (1,000 ft) and 100 feet of permanent groundwater lowering is within several hundred yards of Rock Lake.

Without mitigation, the FEIS predicts that the potentiometric surface surrounding Rock Lake would continue to decline after mining ceased, and the groundwater flow direct would reverse once it decreased below the lake surface. As a result, water would flow out of the lake toward the mine void, resulting in a loss of water volume in winter, which would occur for about 130 years after mining ceased. FIES at 639.

The lake level would decline by 1.2 feet, although given substantial uncertainties in the groundwater model, we believe this is not a conservative estimate (p.M-346). Littoral vegetation if present in the shallow area of Rock Lake may experience drier conditions late in the growing season. Total groundwater inflow would be reduced by 24 acre-feet a year. FEIS at 640.

The FEIS states that, "Reductions in lake levels and volume would be 5 percent or less and would probably not have a detectable effect on the aquatic biota of Rock Lake. It states that while the lake level is projected to be permanently reduced by 2 percent without mitigation, aquatic habitat changes would likely be difficult to separate from those caused by natural variability in lake levels. This would be due to in part to the large influxes of surface water runoff that occur every year to Rock Lake during spring snowmelt and storm events, which would not be affected by the mine. When groundwater levels reached steady state conditions, lake levels and volume would, with mitigation, return to pre-mine conditions.

However, the FEIS's conclusion that the loss of groundwater inflow would probably not have a detectable effect on aquatic biota in Rock Lake relies solely on physical changes (i.e., the loss of water in terms of lost habitat). However, the reduction in groundwater inflow constitutes degradation because it fundamentally alters the physical, biological and chemical qualities of the lake.

According to the FEIS, "Lakes located in or near the CMW are quite dilute; the primary source of dissolved solids and nutrients is bedrock groundwater (Gurrieri and Furniss 2004). Groundwater entering the lakes can be the major source of nutrients for phytoplankton in the lakes. An investigation of Rock Lake completed in 1999 (Gurrieri and Furniss 2004) found that during the ice-free season, groundwater contributed 71 percent of the minerals to the lake, surface water contributed 25 percent, and rainfall contributed 4 percent. Seasonal variations in the water quality of Rock Lake indicate that the volume of inflow from various sources (snowmelt, rainfall, shallow and deep groundwater) varies proportionally during the year. Because the watershed above Rock Lake consists of highly resistant bedrock with little vegetation and soil cover, snowmelt and surface water entering the lake are very dilute (very low dissolved solids)." FEIS at 679.

The loss of groundwater flow to lakes is emphasized once again in the description of "unavoidable adverse environmental effects," which categorically states that, "If less groundwater were contributed to Rock Lake, the lake total dissolved solids, silica (needed by diatoms), and nutrient concentrations may decrease in the lake." FEIS at 836.

Degradation of Wilderness Lakes by Montanore operations are in violation of ARM §17.30.705(2)(c), which prohibits any degradation of Outstanding Natural Resource Waters by any "new or increased source." That term is broadly defined as any "activity resulting in a change of existing water quality occurring on or after April 29, 1993." ARM § 17.30.702(16). Since the excavation of the Montanore mine workings would obviously occur well after April 29, 1993, and would change existing water quality in Rock Lake (and other Wilderness waters), it would constitute a "new source."

The FEIS apparently agrees that no degradation is allowed in Outstanding Resource Waters, but suggests monitoring activities to detect degradation. This fails to meet the requirements of the law as noted herein. Once degradation shows up in monitoring, degradation has already occurred. The FEIS also inappropriately relies on unproven mitigation measures to offset reductions in groundwater drawdown.

P. FEIS/DROD FAIL TO CONDUCT ADEQUATE REVIEW OF IMPACTS TO WILDERNESS UNDER NEPA OR PREVENT IMPAIRMENT OF WILDERNESS AS REQUIRED BY THE WILDERNESS ACT

The Montanore Project will improperly adversely impact wilderness character, dewater wilderness lakes and streams, place wilderness lands at risk of subsidence, and impact air quality in the Class I Airshed.

As described in our comments (pgs. M-236, M-244, M-256, M-297, M-319, M-328, M-330, M-334-337, M-347), and herein, the USFS failed to conduct adequate analysis on impacts to Wilderness features, the failed to protect against adverse, irretrievable harm to the Cabinet Mountains Wilderness, failed to minimize impacts to protect the surface resources in accordance with the general purpose of maintaining the wilderness unimpaired for future use and enjoyment as wilderness, improperly relied upon unproven mitigation measures, and failed to analyze the effectiveness of mitigation measures.

In 2009, the KNF completed the Cabinet Mountains Wilderness Management Plan. The goal statement for the plan directs that the CMW "will be managed according to the Wilderness Act to allow natural processes to operate freely where the evidence of man's activity is substantially unnoticeable" (KNF 2009).

According to FEIS, "All mine alternatives have the potential to indirectly affect wilderness qualities. Alternatives 3 and 4 would be conducted to protect the surface resources, including aquatic resources. All alternatives would be in accordance with the general purpose of maintaining the wilderness unimpaired for future use and enjoyment as wilderness and to preserve the wilderness character consistent with the use of the land for mineral development and production in compliance with 36 CFR 228.15 and the Wilderness Act."

We disagree with the characterization that these are indirect effects, or that alternative 3 would be conducted to protect the surface resources, including aquatic resources. All mine alternatives will result in direct impacts to surface water resources by excavating underground tunnels that will divert groundwater that would naturally recharge surface water, including the Outstanding Resource Waters and groundwater dependent ecosystems within the Wilderness Area.

Furthermore, the results are predicted to be irretrievable effects.

> Mining of the ore body would unavoidably reduce streamflow and spring flows, and affect lake levels in Rock and St. Paul lakes. Decreased streamflows would result in the loss of aquatic habitat in the Libby Creek, Rock Creek, and East Fork Bull River watersheds. Water levels are predicted to reach steady state conditions 1,150 to 1,300 years after mining ceased.

FEIS at 466. Thus, the project constitutes impairment of future uses of the Wilderness, and fails to preserve the wilderness character.

Further, according to the FEIS:

> The consumptive use of groundwater by the project would unavoidably reduce the total water yield from this portion of the Cabinet Mountains. The anticipated consumptive use would be small relative to the total water yield of this area. Water yield would remain reduced until the project no longer consumptively uses water, and then slowly return to the pre-mining yield as the mine void filled, which would require about a predicted 493 years and longer with the agencies' mitigation. Without mitigation, water levels over portions of the mine void would permanently remain greater than 100 feet below pre-mine conditions and between 500 and 1,000 feet in a small area north of Rock Lake. Without mitigation, water levels closest to Rock Lake (in mining block 18) are predicted to remain 45 feet below pre-mine conditions, and less with mitigation. Total yield would be the same after the mine void reached steady state conditions, when recharge equaled discharge.

FEIS at 591.

In addition to water consumptively used, the estimated increase in groundwater storage due to the mine void would be about 34,600 acre-feet. This volume of groundwater required to fill the

mine void would be an irretrievable commitment of resources.

The effects of these changes to the Wilderness, Outstanding Resources Waters, and the threatened species they support are profound. These impacts will substantially harm natural processes.

The FEIS states that:

> The agencies mitigation would be effective in minimizing adverse effects on surface resources in the CMW, maintaining the wilderness unimpaired for future use and enjoyment as wilderness a[sic] and preserving the wilderness character consistent with the use of the land for mineral development and production in compliance with 36 CFR 228.15. Mitigation measures such as increasing the buffer zones near Rock Lake and the Rock Lake Fault, and the agencies' monitoring coupled with final design criteria submitted for the agencies' approval, would reduce the risk of subsidence and measurable hydrological indirect effects to the surface within the wilderness.

FEIS at 985.

This is incorrect. First, the FEIS provides no evidence to support its assumption that buffer zones will mitigate hydrologic impacts. Second, even with mitigation, the FEIS predicts reductions in baseflow in Outstanding Resource Waters as illustrated in Table 112 on page 636, Volume 1, FEIS. These reductions in flow, even with mitigation, will adversely affect aquatic life.

Some of the most severe reductions will occur in westside streams. The FEIS predicts an enormous reduction in flow in headwater streams near and upstream of Rock Lake and St. Paul Lake:

> The reduction in low flows and aquatic habitat would increase in the west side streams in the Closure and Post-Closure phases compared to the previous phases (Table 111 and Table 112). Effects on aquatic habitat would be greatest in the headwater reaches of these streams, including those stream reaches near and upstream of Rock Lake and St. Paul Lake. A maximum reduction of 97 percent is estimated at EFBR-300. Westslope cutthroat trout have been occasionally collected near the outlet of Rock Lake, and could potential use the reach immediately upstream of the lake. (Kline Environmental Research and New Fields)(p. 526, Volume 1, FEIS). Headwater streams perform important ecological functions in terms of transport of organic matter, invertebrates, nutrients and woody debris to downstream waters, as discussed in Kline Environmental Research and New Fields (2012). Reductions in flow could adversely affect the ability of these headwater reaches to perform such functions
>
> In the Rock Creek drainage downstream of Rock Lake, low flows would be decreased by an estimated 62 percent during the Closure Phase and 100 percent during the Post Closure Phase in the reach near the CMW Boundary (EFRC-200) without mitigation. With mitigation the reduction in flow is estimated to be 59% in the Post Closure Phases. According to the FEIS, the reduction in low flow in the EFRC following closure of the

> mine would decrease aquatic habitat and adversely affect westslope cutthroat populations within this reach, with habitat utilization potentially eliminated seasonally in at least some years during the Post-Closure period without mitigation. With mitigation, the Post-Closure effects on aquatic habitat and assemblages in this portion of the East Fork Rock Creek would be less, but may still be substantial.

FEIS at 426-427.

The agency acknowledges that St. Paul Lake may be impacted by the proposed Montanore Mine, but has decided to not pursue that possibility further. In the response to comments (M-348), the FEIS states, "Section 3.11.2.3.2 of the SDEIS and FEIS disclosed that St. Paul Lake is located within glacial moraine material, which causes the lake level to fluctuate to a much greater extent than does Rock Lake. St. Paul Lake goes dry in some years. As a result, effects predicted by the 3D model would likely not be separable from the large natural lake level variations."

This is inadequate. The FEIS and ROD fail to fully account for and review potential impacts to St. Paul Lake, which is an Outstanding National Resource Water. Loss of Lake values would violate the Wilderness Act, CWA, Organic Act/228 regulations, and the NFMA.

Regarding the significant adverse effects to the East Fork Bull River, the FEIS admits that:

> Predicted reductions in flow in the East Fork Bull River would also be greater during the Closure and Post-Closure phases compared to previous phases as the mine void filled (Table 111 and Table 112), and aquatic habitat for bull trout and other salmonids would be adversely affected. Low flows at EFBR-500 are estimated to decrease by 4 percent and 11 percent during the Closure and Post-Closure phases, respectively, with or without mitigation. Decreases in bull trout habitat availability would be similar for the reach near the Isabella Creek confluence (EFBR-2) and the reach near the CMW boundary (EFBR-500) with decrease of 4-5 percent predicted in both reaches for adult and juvenile bull trout habitat and 11 percent in spawning habitat (Table 76). Wetted perimeter at EFBR 2 is preceded to decrease by 26%, which indicates that aquatic habitat for other salmonids and macroinvertebrates would be adversely affected. EFBR is considered a stronghold for bull trout populations within the lower Clark Fork core area and surveys indicate that the effected reach supports much of the bull trout spawning.

FEIS at 427.

According to the FEIS, future mitigation projects would "offset" all of these risks:

> Mitigation projects in the Kootenai and Lower Clark Fork Core areas are planned to offset the risk of the population declines estimated to occur from the project. As described in more detail in the BA appendix (USDA Forest Service 2013a) and in section 2.5.7.3, *Bull Trout*, these projects are designed to increase resident and migratory bull trout populations in the Kootenai and Lower Clark Fork Core Areas. The proposed projects would be in areas where bull trout populations were historically but not currently present, are currently present but only at low population densities, are present but at risk

> from the presence of non-native fish species, or are present but expected to be detrimentally affected by the project. Proposed mitigation actions for these areas **could include** creating secure genetic reserves through bull trout transplant or habitat restoration, incorporating actions to correct any limiting factors in streams so that higher abundances of bull trout would be supported, or eradicating non-native fish. The impact analysis provided in the BA was used as a guideline to evaluate effects, but mitigation success for all of these projects would be monitored to determine that the value of the projects actually exceeds any predicted impacts on bull trout populations.

FEIS at 431-32 (emphasis added).

As noted herein (*see, e.g.* Frissell 2015 attached comments), such potential mitigation measures are inadequate and not supported by valid scientific analysis.

Q. FAILURE TO PROVIDE BASELINE DATA TO EVALUATE THE POTENTIAL EFFECTS OF SUBSIDENCE; FAILURE TO PROVIDE MITIGATION MEASURES TO ENSURE PROTECTION OF WILDERNESS FROM SUBSIDENCE

As noted in our previous comments (M-295-296, Volume 3, FEIS) and herein, the FEIS does not adequately review subsidence issues nor does the DROD protect against subsidence of the overlying Wilderness Area, including the lack of mitigation measures to prevent subsidence. In the response to comments, the FEIS acknowledges that it can't predict with absolute certainty that subsidence won't occur. Instead, it relies on unproven mitigation measures and future analysis.

> The agencies cannot predict with absolute certainty that subsidence would not occur, however the analytical and empirical data point to subsidence not occurring at Montanore provided mitigations are followed. The underground data collected during the evaluation phase would help refine the subsidence analysis, and may result in changes to the mine plan. The agencies' mitigation includes the requirement for MMC to fund an independent technical advisor to assist the agencies in review of MMC's subsidence monitoring plan, underground rock mechanics data collection, and MMC's mine plan. MMC would fund and facilitate biannual surveys of the underground workings that would be completed by an independent qualified mine surveyor. After completing the monitoring survey, the independent surveyor would submit maps of the workings to the agencies and would report any underground disturbances that crossed the established extralateral rights boundary, entered into designated buffer zones, or deviated from agency approved mine design.

FEIS at M-296. Yet such future studies and reviews can be, and should have been, done during the NEPA process.

The inadequacy of predicting the effects of subsidence on important public resources is illustrated by the Troy and Stillwater Mines, two major underground mines in Montana, where

subsidence occurred despite predictions that it would not.[7] Subsidence events have continued to occur at the Troy Mine, with new subsidence featured found on Forest Service lands in the 2014 field report, which the company has been unable to prevent.[8]

The FEIS also states that, "A minimum of 500 feet of cover is required over the Montanore mine workings. This minimum buffer would be reevaluated during final design, after additional data are collected during the Evaluation Phase. The agencies' mitigation for subsidence, which was revised in the FEIS (Section 2.5.2.5.4), was designed to minimize the likelihood of subsidence affecting surface resources." FEIS at M-295.

The FEIS calls for baseline data to be collected after the ROD to characterize existing conditions, so that subsidence effects can be identified if it occurs. It also calls for further analysis after the evaluation adit, and adjustments for mitigation, which would be outside the NEPA analysis.

Once subsidence has occurred, the impacts to the overlying Wilderness will have occurred, and no mitigation will be available to protect the Wilderness. Furthermore, this baseline data and analysis should be collected and included in the FEIS, rather than outside of the NEPA process.

R. FAILURE TO COLLECT ADEQUATE BASELINE DATA AND RELIANCE ON UNFOUNDED ASSUMPTIONS TO CALIBRATE THE GROUNDWATER MODEL

As stated in our previous comments (p.M-304, M-317-324, M-328-329, M-348,Volume 3, FEIS) and herein, there is inadequate baseline data and consequently over-reliance of unsubstantiated assumptions to calibrate a descriptive and predictive model of groundwater behavior during and after mining. This is critical information because the proposed Montanore Project is predicted to reduce stream flows in six streams, including East Fork Rock Creek, Rock Creek, East Fork Bull River, Libby Creek, Ramsey Creek and Poorman Creek in all mine alternatives (p. S-31, Volume 1, FEIS).

Section ***3.10.4.3.5 Groundwater Model Uncertainty*** (p. 580, Volume 1, FEIS) states "There is uncertainty associated with the hydraulic properties of the bedrock and faults; predictions of mine inflows and impacts on water resources are sensitive to permeability of major fault zones. With the data currently available, the model results provide a potential range of mine dewatering and pumping (in the case of the tailings impoundment model) rates and streamflow impacts. They are the best currently available estimates of impacts and associated uncertainty that can be obtained using currently available data in the groundwater models."

We agree with this assessment of uncertainty within the model (see more details below) but disagree that these are the "best currently available estimates of impacts" because it is possible to collect data during the application process that would have reduced the model uncertainty significantly.

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[7] Blodget, Steve and James R. Kuipers, P.E., "Technical Report on Underground Hardrock Mining: Subsidence and Hydrologic Environmental Impacts" February 2002. (attached).
[8] MTDEQ, Troy Mine Field Review, July 31, 2014. Available at MTDEQ Troy Mine File. (attached).

While the agencies required groundwater modeling to help predict the effects of mining on groundwater elevations and recharge to streams, they did not require adequate levels of stream, spring, and groundwater monitoring, or adequate characterization of faults and fractures to be able to make those predictions, except at a very broad and uncertain level. The repeated agency response to our comments is that additional data collection, model refinement, and impact assessment will occur after the pre-evaluation and evaluation phases. This does not meet the requirements of NEPA. The agency is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. §1502.15. As noted herein, the establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process.

Given a lack of measurements with which to calibrate the model, it must rely on assumptions, many of which are untested. The arrangement of hydraulic conductivity zones and recharge rates and spatial distribution, in particular, can have a significant effect on modeled flow direction and volume, and in this model, we are concerned that they are based on assumptions with little backing. One example is the response to our comments 328-2 and 333-7 on p. M-317 (Volume 3, FEIS), contesting the use of low hydraulic conductivity zones surrounding fractures and faults. This has the effect of limiting flow to the underground workings. The agencies response is that they "are also concerned about this specific simulation, particularly as it may be related to the hydrologic function of the Rock Lake Fault." Their response was to increase the initial buffer distance, but justification for the buffer distance is lacking.

Another example is the response to our comment 333-22 on p. M-320 (Volume 3, FEIS), contesting the Geomatrix (2011) assumption of fracture flow decreasing with depth. This is an important assumption because if it is true, it means that less water would discharge to the mine workings and there would be less drawdown of groundwater and less dewatering of streams. The agencies response was to agree that detailed analysis of Libby adit flows do not support the depth/fracture flow relationship, yet this assumption is still embodied in the model.

The model calibration is also compromised by a lack of accurate calibration targets. In response to our comment 328-2 on p. M317-18 (Volume 3, FEIS) about uneven spatial distribution of modeling residuals (i.e. errors) over the modeling domain, the MMC response was that two of the target wells, "H-19 and H-26 were noted as having water levels between 5400 and 5500 feet. Thus a target of 5450 was used in the model for residual calculations." It is obviously difficult to achieve good calibration and therefore a reliable prediction) if the monitoring targets (i.e. known groundwater elevations) are only known within 100 feet. Further, in response to comment 328-3 on p. M-318 (Volume 3, FEIS), MMC (or their consultant) responds that "The limited site data and other model input assumptions create model results that have very large errors and confidence limits. The large inherent error and associated uncertainty preclude use of the groundwater model as a predictive tool as presented in the SDEIS." Yet the agencies do just that, and use the model for predictive purposes and as the basis of the BiOp.

S. FAILURE TO COLLECT BASELINE DATA ON STREAM FLOWS VIOLATES NEPA

As stated in the previous comments (p. M-349, M-351, and M-364, Volume 3, FEIS) and herein, there is inadequate baseline data to characterize stream flows within the project area. This is critical information because the proposed Montanore Project is predicted to reduce stream flows in six streams, including East Fork Rock Creek, Rock Creek, East Fork Bull River, Libby Creek, Ramsey Creek and Poorman Creek in all mine alternatives (p. S-31, Volume 1, FEIS).

According to the agency's response to comments, "Because none of the analysis area streams have been continuously gaged for more than 2 years, **hydrographs have not been developed and baseflow and average low flow values have not been estimated.**" FEIS at M-344 (emphasis added).

Further, in the same section, "Tables showing analyses of effects on low flows ($7Q_{10}$ and 7Q2) during the various mine phases were provided in Section 3.11.4 of the SDEIS and FEIS, ***but measured baseflows are not provided in any of the analysis tables because they have not been estimated based on actual measurements at many locations***." FEIS at M-344 (emphasis added).

This violates NEPA because this is essential baseline data necessary to evaluate the effects of the project on surface waters, accurately analyze alternatives and evaluate mitigation measures.

The stream reaches within the Wilderness are designated as Outstanding Resource Waters and provide critical habitat for threatened bull trout. Impacts to aquatic species, including threatened bull trout, were assessed based on the results of the hydrologic analysis (p. 320 Volume 1, FEIS).

There is no viable reason why stream flow data hasn't been collected. Although stream gauges may not be present in the Wilderness, there is nothing to prevent the agencies from going into the field and manually collecting this flow data. We fail to understand why this hasn't been done over the many, many years from the DEIS, SDEIS to FEIS. Continuous measurement of streamflow would have gone a long way toward establishing baseflow conditions and associated variability, and therefore improving the ability to detect statistical change in baseflow due to mining.

Section 3.11.4.4.6 ***Uncertainties Associated with Detecting Streamflow Changes due to Mine Activities*** (FEIS at 642) describes the necessity for sufficient quality and quantity of streamflow measurements to reduce the percent error of the measurement, and thereby increase the chances of detecting a trend. This section is quoted in the response to comments (M-364), "…a sufficient number of streamflow measurements could be collected to determine whether the streamflow that may be affected by mining is statistically different from the streamflow that occurred pre-mining, regardless of variability." Yet, there is no discussion of how a sufficient number of measurements would be determined. Furthermore, "Based on an analysis of streamflow data from streams with gaging stations located at the periphery of the analysis area on the KNF, Wegner (2007) reported the average variability in low flow values is 20 percent. In stream reaches when and where the only source of water to streams is deep bedrock groundwater, it is expected that flow variability would be less." FEIS at 643. Yet because there is so little data

from the headwater streams, the agencies don't actually know if flow variability is lower or higher than 20%.

The longer the record of measurement, the better handle the agencies would have in detecting statistical change from mining sooner. Given the fact that the East Fork Bull River and East Fork Rock Creek are wilderness streams and ORWs with relatively low baseflows to begin with, and given the fact that mining-related changes to baseflow will have a lag time of 5-10 years and may be irreversible, it is hard to understand why high-quality and high-frequency stream monitoring was not required by the agency or instigated by the applicant at the outset of this project.

The FEIS defers the collection of baseline data of streamflows until after the FEIS and ROD are issued, and the company has entered the Evaluation Phase. This does not meet the requirements of NEPA. The agency is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. §1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process.

T. FAILURE TO INCLUDE RECLAMATION BOND CALCULATIONS and SUBJECT THEM TO PUBLIC REVIEW UNDER NEPA

As stated in our previous comments (p. M-229, Volume 3, FEIS) and herein, the FEIS improperly failed to disclose the bond calculations for reclamation/mitigation and closure of the Montanore Project. The Forest Service's 36 CFR part 228 regulations, USFS bonding policy (attached), as well as Kootenai Forest Plan Standards require the Forest Service to establish an adequate reclamation bond. Bonding costs need to be detailed in the FEIS for each alternative.

The bond must be substantive enough to cover the worst possible impacts to the area's fragile ecosystem as well as the area surrounding the transportation route and processing site. The Forest Service needs to describe the reclamation process and all associated costs in detail. This analysis should include the volume and type of material to be moved, equipment needed, location for stockpiling, and sequence for reclamation.

The U.S. EPA also strongly criticized the Forest Service for not including bonding in the NEPA process – noting that such a failure violates NEPA.

> Financial assurance information for mine closure and remediation is not provided in the DEIS. Long term post-closure monitoring, water treatment, and other remedial actions may be necessary to protect water quality, and specific assurances are needed that a sufficient financial instrument will be maintained to ensure adequate funds are available as long as they may be needed for this purposes. Given the history of adverse environmental effects resulting from some hardrock mines, and the expenditure of public funds used in some cases to address environmental problems caused by mining, EPA believes it is necessary to analyze these factors in the DEIS. Financial assurance could make the difference between a project sufficiently managed over the long-term by the site operator and an unfunded/under-funded post-closure site that becomes an unreclaimed

liability for expenditure of public funds.[9]

The USFS responded by adding a section that provides information about the agencies approach to calculating a bond amount in Section 1.6.3.2, but without a calculated amount. FEIS at M-230.

Yet such analysis is what the NEPA process mandates for other aspects of each action alternative. For example, the FEIS arguably reviewed the different environmental impacts, including from the reclamation activities, of each alternative. There is nothing about estimating the costs of reclamation for each alternative that would be harder than reviewing the environmental impacts from each alternative. In fact, once the latter is done, calculating the costs would be easier, as the cost of each alternative is a factor that must be considered in the FEIS anyway.

The current failure to include the bond in the DROD or FEIS contradicts the previous position of this Forest, as a detailed bonding analysis was included in the ROD for the Rock Creek Project in 2003 (attached). No credible reason has been given to exclude bonding issues from the FEIS and DROD for the Montanore Project.

We are particularly concerned, as described in our comments (FEIS at M-231), about the potential for water treatment in perpetuity, and how the bond will ensure that funds are available to cover water treatment costs long after mine operations have ceased. The agencies response merely says that "Based on the current level of information, the agencies would likely estimate costs for water collection and treatment in perpetuity when calculating the reclamation bond. Section 1.6.3.1 of the SDEIS and FEIS disclosed that the bond would be determined after an alternative has been selected for implementation and a ROD or decision is issued by each agency."

This is inadequate. Without adequate information to demonstrate that the bond will cover the full cost of reclamation and closure, the agency cannot demonstrate that the mine will be reclaimed, as required by law. There are abundant examples of mines on public lands in Montana, including the Zortman Landusky Mine, where reclamation has not been completed and extensive impacts to the environment have occurred as a result of inadequate bonding.[10]

Similarly, the Beal Mountain Mine, located on Forest Service land, has not been reclaimed as a result of inadequate financial assurance, costing the public over $12 million in costs, and resulting in significant impacts to water quality.[11]

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[9] US EPA, Letter from Carol Rushin, Acting Regional Administrator to Mssrs. Bradford, Opper and Winters, re: Draft Environmental Impact Statement for the Montanore Project (CE # 20090048), June 29, 2009.

[10] Funding summary of Zortman Landusky expenses from 1999-August 2014, provided by Tom Livers, MTDEQ. (attached)

[11] U.S. Forest Service, Bob Wintergrerst, Annual Beal Mountain Reclamation Update, July 2014; U.S. Department of Agriculture, Engineering Evaluation/Cost Analysis: Beal Mountain Mine, Beaverhead Deerlodge National Forest, March 2010. (attached).

U. FAILURE TO MITIGATE IMPACTS OF SEDIMENT; COLLECT ADEQUATE BASELINE DATA; FAILURE TO PROTECT IMPAIRED STREAMS;

As described in our comments (p. M-246, 331-8) and herein, the FEIS failed to fully review impacts of sediment on fish populations, particularly bull trout, failed to collect adequate baseline data to evaluate the impacts of increased sediment, and failed to properly mitigate against these impacts and protect fisheries and habitat.

Comments: 331-8 Libby Creek is already approaching the sediment threshold where bull trout incubation would be impacted. Any increase in sediment delivery to the stream as a result of the road grading and construction would send Libby Creek above the threshold of 30 percent fines and further impact bull trout incubation.

In the Response to comments, the FEIS states:

> While some reaches of Libby Creek that were sampled had percent fines near the 30 percent threshold, other reaches of Libby Creek had percent fines well below that threshold, as presented in Section 3.6.3.1 of the DEIS and FEIS. The BA for bull trout (KNF 2013a) concluded that existing sediment levels were functioning at unacceptable risk within Libby Creek, as disclosed in the updated Section 3.6.2.12.2 of the FEIS. The potential for short-term increases in sediment and effects to bull trout and other salmonid populations from such increases, including effects to incubation, was discussed in sections 3.6.4.2.1, 3.6.4.3.1, and 3.6.4.4.1 of the SDEIS and FEIS and also disclosed in sections 3.6.4.3.8, 3.6.4.4.6, and 3.6.4.5.6. BMPs and road access changes would result in substantial long-term decreases of an estimated 57 percent in sediment delivery to project area streams in Alternatives 3 and 4 over the life of the project. These decreases would benefit the bull trout habitat and populations. While some **adverse effects to successful incubation of bull trout embryos may occur during the Construction Phase**, these effects would be expected to be short-term. Additionally, the high flows that occur during runoff and storm events would flush accumulated sediment downstream.

FEIS at M-246 (emphasis added).

SOC SDEIS Comment: 331-15 Sediment would also impact the water quality of many of these streams. Sediment generated by runoff and road and transmission line construction could have serious and long-term consequences to the fisheries habitat in many of these streams and creeks.

SOC SDEIS Comment 331-21 This sediment would impact fisheries in adjacent streams. We are concerned about impacts to redband and Westslope cutthroat trout, as well as to the population of sculpin that provides a winter food base for bull trout. In the event that a large runoff-producing storm occurred during the initial reclamation period, soil losses along roads and road cuts may be locally moderate to severe. SDEIS, page 163

USFS Response:

Changes in the amount of sediment delivered to streams as result of the action alternatives were discussed in Section 3.13.4 of the SDEIS and were revised in the FEIS. Some **short-term increases in sediment were predicted to occur**, but these would be minimized through the implementation of BMPs. The high flows that occur as a result of snowmelt and large precipitation events in the Libby Creek watershed would flush accumulated fine sediments downstream. The adverse effects of the potential short-term increases on fisheries habitat and populations, including bull trout, redband trout, and westslope cutthroat trout populations, were discussed in Section 3.6.4 under the "Sediment", "Threatened and Endangered Species", and "Forest Service Sensitive Species" subsections for each mine and transmission line alternative in the DEIS. These sections were updated with the results of further analysis and discussion in these sections of the SDEIS and FEIS. The mechanisms through which changes in sedimentation rates could adversely affect habitat for fish and invertebrates within the Libby Creek watersheds were disclosed in Section 3.6.4.2.1. Less data were available to determine the status of sculpin within the analysis area, but effects on fish populations in general and on the invertebrate populations which also serve as a food source for bull trout were described in the "Sediment" subsections**. Over all phases of the project**, sediment delivery to streams from roads under the project alternatives would be reduced substantially in the long- term compared to existing conditions over that same time period through BMPs and road access changes. Decreases in sediment delivery from roads were estimated to range from 47 percent from existing conditions with Alternative 2 to 57 percent with Alternatives 3 and 4. These **long-term reductions** would increase habitat quality in analysis area streams, and would benefit trout and other aquatic populations.

Transmission line alternatives would also decrease sediment delivery from roads to streams **in the long-term** with mitigation and the implementation of BMPs, which are included under all action alternatives. **Short-term increases would be expected to occur** as a result of road upgrades (see the "Sediment" subsections of Section 3.6.4 of the SDEIS and FEIS for the transmission line alternatives). Sediment decreases were estimated to be up to 23 percent under Alternative D-R over all phases of the project. The quote provided from page 163 (Comment 331-21) of Section 3.6.4.9.1 of the SDEIS refers specifically to effects from potential increases in sediment delivery to streams that might occur under Transmission Line Alternative E-R for road construction and reconstruction, although this language is included under other alternatives as well. Under Alternative E-R, a 20 percent decrease was estimated to occur in road-related sediment delivery to streams **over all phases** as compared to existing conditions over the same time frame. As stated by the commenter, the potential for short-term adverse effects would increase during large runoff producing storm events as soil losses along roads and road cuts occurred during the initial reclamation period**.** As large storm events would also substantially increase stream flows in streams in the area, some of the sediment would be flushed downstream and outside of the project area. With all transmission line alternatives, structural and non-structural BMPs would be used to minimize sediment delivery to streams, a Stormwater Pollution Prevention Plan would be implemented, and the DEQ would initiate inspections of perennial stream crossings associated with the alternatives to determine what methods would minimize inputs to streams. These actions would be expected to minimize sediment reaching area streams during construction and

> decommissioning of the transmission lines under most conditions, including large runoff-producing weather events (Section 3.13.4.8). Some roads that are currently open would be closed prior to the Construction phase to mitigate for effects on grizzly bears. Road removal might increase sediment delivery to streams initially, but would have beneficial effects in the long-term to both water quality and fisheries habitat in analysis area streams.

FEIS at M-247 (emphasis added).

SOC SDEIS Comment 331-19 Road closures are being used as mitigation for sediment. Would these road closures be permanent? Would the road closures allow mine related traffic? Would there be timber sales that would allow log trucks to use the roads in question? Who would have keys? Would there be seasonal access?

Response: Road closures for mitigation would be for the life of the project. Most of the closures would be year-round, but some would be seasonal (see sections 2.4.6.3 of the FEIS and 2.5.7.4 of the FEIS). Roads closed year-round would not be accessed by mine related or timber related traffic. Access would be controlled by the KNF. In Alternatives 3 and 4, MMC would check the status of the closure device twice-a- year (spring and fall), and repair any gate or barrier that was allowing access.

SOC SDEIS Comment 331-20 What are the time frame parameters for the short-term exemption? Was the expected increase in turbidity included in sediment predictions for surface water? It would seem the sediment predictions included in the SDEIS would be seriously flawed if the agency permitted MMC to exempt sediment increases occurring during this waiver from the mine sediment analysis. The activities included in the waiver, including the tailings impoundment, are those that would be predicted to produce the most sediment. The waiver does not preclude an analysis of how much sediment would be generated during the activities granted under the exemption. We need to know how much sediment would be generated during this turbidity. The waiver would likely impact bull trout, redband, and Westslope cutthroat trout. Why is MDEQ considering a waiver that would allow impacts to fisheries? In any event, the mandates upon the USFS to protect fisheries and water quality noted herein do not contain any exemption for "short-term" or "temporary" violations of water quality standards and other protective requirements and thus cannot be allowed.

Response: "The waiver referred to in Section 1.6.2.1.1of the SDEIS and FEIS is authorized on a short-term basis under DEQ's discretion and is reviewed on a case-by-case basis. Based on the MCA (75-5-318), if the exemption was authorized, it would include site-specific conditions to ensure that the designated beneficial uses of the state waters are protected and maintained. As such, effects on aquatic life would be considered before the waiver was authorized. Additional discussion of the 318 exemption was added to Section 3.13.1 of the FEIS." FEIS at M-249.

For each of these issues and response, the USFS failed to minimize all adverse impacts to, and protect, fisheries and habitat, including threatened species and sensitive species in the selection of its preferred alternatives. The acknowledged short-term increases of sediment from the

chosen project alternatives violates the USFS's duties under the CWA, Organic Act/228, NFMA, and ESA.

As noted in the quoted sections above and herein, the FEIS admits that there will be increases in sediment during the initial phase(s) of the project. *See, e.g.*, FEIS at J-4 (even with mitigation, there will be "short-term increases and long-term decreases in sediment" from the transmission line facility). As noted herein, the FEIS/DROD acknowledges that sediment increases will occur in the short-term (but hopefully will be reduced in the long-term, or over the life of the project). As noted herein, the USFS cannot excuse short-term adverse impacts from sediment under the guise that long-term impacts may be reduced.

The CWA as implemented by Montana prohibits detrimental increases in sediment:

> No increases are allowed above naturally occurring concentrations of sediment or suspended sediment (except as permitted in 75-5-318, MCA), settleable solids, oils, or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife.

ARM §17.30.623(2)(f). The federal court in Montana has expressly ruled that the USFS violates the Organic Act and Part 228 regulations if approval of a mining plan of operations would violate this standard. Rock Creek Alliance v. U.S. Forest Service, 703 F.Supp.2d 1152, 1164-1170 (D. Montana 2010).

As noted extensively herein, Bull trout, a listed species, and Westslope Cutthroat Trout and Redband rainbow trout, both species of concern, will be adversely impacted by sediment generated and discharged to streams in the project area. This sediment will adversely effect successful incubation of eggs and survival of young by degrading the habitat, including designated critical habitat. Increases in sediment also may cause a decrease in the available food base resulting in lower growth rates and higher mortality rates.

Sediment impacts from roads required to implement the Proposed Action and those proposed to be closed under the Wildlife Mitigation Plan were modeled by KNF and DEQ (2013) using the Water Erosion Prediction Project (WEPP) (Elliot 2004). The modeled results represent an estimate of delivery potential from each road based on regional and project-specific variables that were incorporated into the model (Table 6). All streams, with the exception of East Fork Bull River, would be adversely impacted by sediment before the benefits of the Proposed Action were realized. Sediment input would increase during the evaluation phase only (2 years) in Libby Creek, Bear Creek, Cable Creek, Midas Creek, Poorman Creek, and West Fisher Creek.

Sediment input would increase during the evaluation phase and the first two years of construction (4 years) in Big Cherry Creek, Ramsey Creek, and Fisher River. Sediment input would increase in East Fork Rock Creek and Rock Creek (mainstem) during the first two years of construction. (p. 96-98 of BIOP).

FEIS 3.6.4.3.1, pg. 418. As with Alternative 2, the Libby Creek watershed would be at risk due to short-term impacts from increased sediment. Potential sediment impacts would be reduced in

Alternative 3 compared to Alternative 2, but would impact the fish and other aquatic populations through the same mechanisms as discussed for that alternative.

FEIS, pgs 396-397. Any sedimentation that were to occur from roads, sediment pond overflows, or other sources would have the potential to alter aquatic habitat by decreasing pool depth and habitat complexity, changing substrate composition by filling in interstitial spaces, and increasing substrate embeddedness (Rieman and McIntyre 1993; Waters 1995). These changes to stream habitat can affect salmonid reproductive success by degrading and decreasing spawning and rearing habitat, and by increasing egg and juvenile mortality (Shepard *et al.* 1984; Fraley and Shepard 1989; Weaver and Fraley 1991; Waters 1995; Watson and Hillman 1997; Montana Bull Trout Scientific Group 1998; Muck 2010). Optimal bull trout spawning and rearing areas should have less than 20 percent of the substrate consisting of fine particles of 6 mm or less for the habitat to be functioning appropriately (USFWS 1998), and less than 30 percent fines (<6.35 mm) has been reported to be necessary for successful bull trout incubation (Parametrix 2005). Behavioral effects can also result from increased suspended or deposited sediment as fish may avoid stream reaches with high sediment levels, or their migration, foraging, or predation behaviors may be altered, resulting in population declines or mortality over time (Muck 2010).

Benthic macroinvertebrate communities can be affected by increases in fine sediment, with decreases in abundance, taxa richness, EPT taxa richness, and diversity observed as fine sediment increases and substrate suitability for many taxa decreases (Angradi 1999; Kaller and Hartman 2004; Harrison *et al*. 2007; Larsen *et al*. 2009; Bryce *et al*. 2010). Changes in invertebrate metrics were associated with percent fine sediment increases as low as less than 5 percent to 30 percent of the substrate composition. A reduction in macroinvertebrate abundance or changes in the composition of the macroinvertebrate population can also indirectly have deleterious effects on fish populations by causing slower growth rates, higher mortality, and reduced fecundity (Berkman and Rabeni 1987; Waters 1995; USFWS 2003a; Muck 2010). Large increases in suspended sediment can directly result in mortality of fish and invertebrates by clogging gills and causing respiratory impairment (Muck 2010).

In addition to the sediment generated during the construction phase of the project, Libby Creek also could be impacted by sediment created from surface developments including heavily used roads, service facilities, a large waste impoundment and water treatment facility, diversion of flows away from filled natural channels and wetlands, possible contaminated mine runoff, and a new power transmission line. Transmission corridors impact streams primarily by permanent clearance of overstory vegetation and loss of shade at stream crossings, and by sedimentation from service roads that are constructed and maintained to low use standards and are sited to service the line infrastructure, not to minimize potential erosion and sediment delivery. (*See* Christopher Frissell, 2011 comments on the SDEIS for Montanore.)

Transmission Alternative D-R would require 5.1 miles of new roads. Sediment delivery from this chosen transmission line alternative is 103.7 tons, with BMPs. (FEIS, Table 132.). The transmission line would cross four perennial streams and 18 other streams, making 22 streams vulnerable to sediment delivery.

FEIS 3.6.4.8.1, pg 445. Sediment: "The modifications incorporated into Alternative D-R would

reduce potential impacts from sedimentation by reducing the clearing necessary to construct new access roads and decreasing erosion by altering the transmission line alignment. The transmission line would cross four perennial streams and 18 other streams (Table 77). Estimated sediment delivery is 103.7 tons with road closures and BMPs (Table 132), which would be a 23 percent decrease from existing conditions **during the 30-year analysis period**." (emphasis added).

FEIS, pg 446. Road Construction and Reconstruction:

> Alternative D-R would require 5.1 miles of new roads (Table 77). This alignment also would cross less area with soils that are highly erosive soils and those with potential for high sediment delivery and slope failure than Alternative B (see Table 166, p. 855). New access roads and closed roads with high upgrade requirements would disturb 2.6 acres of soils having severe erosion risk, and 0.5 acres of soils with high sediment delivery potential. Most of the soils having severe erosion risk that would be crossed by access roads occur along West Fisher Creek and the Fisher River. The majority of soils with high sediment delivery potential along access roads occur along Libby Creek and the Fisher River (Figure 84). No perennial streams and smaller stream would be crossed by new roads in Alternative D-R (Table 77). Following Environmental Specifications, using BMPs and the agencies' road closures for wildlife mitigation are predicted to reduce sediment delivery from roads used during construction (see Table 132, p. 725). Similar effects would occur during line decommissioning**.**

An additional source of sediment would be created with the removal of roads, planned as mitigation for grizzly bears, until roads are revegetated.

FEIS, page 720. 3.13.4.6.2 Mitigation for Changes in Sediment Delivery to Streams:

> In Alternatives 3 and 4, MMC would develop and implement a Road Management Plan addressing all roads used, closed, and stabilized in the alternative. MMC would complete reclamation work at five sites in Libby Creek, Little Cherry Creek, and Poorman Creek to reduce sediment delivery to analysis streams. Twenty-five roads would be closed, some before the Evaluation Phase, some before the Construction Phase, and some during the Closure Phase to mitigate for project access effects on grizzly bears. After roads were stabilized and revegetated, sediment delivery to area streams would cease and overall sediment delivery to analysis area streams would be about 90 tons less to analysis area streams after all of the roads were closed.

The Forest Service also failed to minimize impacts to an impaired stream and prevent discharges of sediment to a 303(d)-listed stream.

Most segments of designated critical habitat on Libby Creek are on Montana's 303(d) list of water quality-impaired streams with impairment limiting their capacity to support coldwater fisheries. Libby Creek from the proposed Libby Plant site downstream through the project area is impaired for sediment and on the 303(d) list. FEIS Figure 76. Under the CWA, further discharges of sediment to this stream reach are prohibited without a compliance plan in place to

reduce the other sediment sources in the water to meet the limits established in the Total Maximum Daily Load (TMDL) established for Libby Creek.

The USFS and MDEQ cannot authorize or allow any discharge into an impaired water body, including those listed under Section 303(d) of the Clean Water Act (CWA), when the discharge(s) may impair or exacerbate conditions which caused the water to be so impaired. This is the rule set forth by the Ninth Circuit in Friends of Pinto Creek v. U.S. EPA, 504 F.3d 1007 (9th Cir. 2007), which rejected a discharge permit for discharges of copper into a stream impaired for copper. This is a mandate under the CWA to MDEQ, as the NPDES agency under the CWA, as well as to the USFS, pursuant to CWA Section 313 and the Organic Act/Part 228 (prohibiting the USFS from allowing any operation that may violate water quality protections or standards, including the protection of beneficial uses such as aquatic life and its habitat).

The USFS cannot allow discharges into an impaired water since such discharges may "cause or contribute" to a water quality violation. 40 CFR §122.4(i). As the Ninth Circuit has stated, the CWA "restricts the issuance of new permits or increased discharges for WQLSs, which are already in violation of state water quality standard. This comports with the regulatory requirement precluding issuance of new permits for new sources that will cause or contribute to a violation of water quality standards. *See* 40 C.F.R. § 122.4(i)." Friends of the Wild Swan, Inc. v. U.S. EPA, 74 Fed. Appx. 718: 2003 WL 21751849 (9th Cir. 2003).

The Ninth Circuit recently rejected the EPA's and the mining industry's argument that new discharges could be allowed in an impaired water. Friends of Pinto Creek v. EPA, 504 F.3d 1007 (9th Cir. 2007). The federal court in Hells Canyon specifically held that the Forest Service violated the CWA when it approved mining operations with discharges into impaired waters.

> This court cannot find support in the record for the Forest Service's position that implementation of the requirements to the PoOs as outlined in Alternative 4 of the ROD will protect water quality and result in no measurable increase in sedimentation. This court finds the Forest Service's decision to allow new mining operations on § 303(d)-listed streams arbitrary and capricious.

Hells Canyon Preservation Council v. Haines, 2006 WL 2252554, *5 (D. Or. 2006).

Yet the FEIS and DROD would authorize sediment discharges that would affect the impaired waters.

> As disclosed in Section 3.13.4.2.1 of the SDEIS and FEIS, the sediment delivery from roads to Libby Creek in all mine alternatives would be reduced substantially due to road mitigation and implementation of BMPs. The DEQ and EPA have established a sediment TMDL of 4,234 tons/year average annual load for Libby Creek from the US 2 bridge to the confluence with the Kootenai River. MMC would implement BMPs included in the MPDES permit to meet the sediment wasteload allocation of 24 tons/year developed in the TMDL for the project.

FEIS at M-88 (responding to EPA concerns). Under the controlling Pinto Creek decision from

the Ninth Circuit, however, without a compliance plan for the other sources, any increase in sediment loading from the project is prohibited. There is no evidence in the record that the other sediment sources in the Creek have reduced their loadings to the point that the Creek is no longer impaired for sediment, let alone any evidence of the compliance plans required by the Ninth Circuit's ruling.

This is especially critical here, as the project will result in short-term increased sediment loading into Libby Creek and its tributaries. The fact that sediment may purportedly be reduced in the long-term as noted in the FEIS does not excuse the admitted fact that sediment loadings will be increased in the short-term.

The Forest Service is abdicating its responsibility to protect water quality and fisheries under the CWA, Organic Act, and 228 regulations by allowing MMI to operate under a water quality waiver of turbidity authorized by MDEQ that will increase sediment.

As noted above, ARM 17.30.623(2)(f) prohibits sediment discharges which may be "harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife." The USFS apparently believes that it may rely on the potential for Montana DEQ to authorize a water quality waiver of sediment or turbidity caused by the project. The USFS argued that the 318 Authorization/Waiver applies to the Montanore project:

> The DEQ may authorize short-term surface water quality standards for total suspended sediments and turbidity for construction of the powerline, access roads, the tailings impoundment, and other stream crossings (75-5-318, MCA). Any exemption would include conditions that minimize, to the extent practicable, the magnitude of any change in water quality and the length of time during which any change may occur. The authorization also would include site-specific conditions that ensure that the activity is not harmful, detrimental, or injurious to public health and the uses of state waters and that ensure that existing and designated beneficial uses of state water are protected and maintained upon completion of the activity. The DEQ may not authorize short-term narrative standards for activities requiring a discharge permit.

FEIS at 22. Yet such a waiver of ARM 17.30.623(2)(f) under 75-5-318 is only applicable "stream-related construction activities or stream enhancement projects," 75-5-318 MCA, not mining projects.

Further, the waiver requires that the agency must "ensure that the activity is not harmful, detrimental, or injurious to public health and the uses of state waters and that ensure that existing and designated beneficial uses of state water are protected and maintained upon completion of the activity. The department may not authorize short-term narrative standards for activities requiring a discharge permit under rules adopted by the board pursuant to 75-5-401." 75-5-318 (3). Thus, because the project has received/will receive an NPDES permit under 75-5-401, the waiver also does not apply.

Even if such waiver of sediment loadings might occur, it can only apply if the loading "is not harmful, detrimental, or injurious to public health and the uses of state waters and that ensure

that existing and designated beneficial uses of state water are protected and maintained." Id. That clearly is not the case here, as no increased sediment loading is allowed in a 303(d) listed stream without the requirements ordered in Pinto Creek. In other words, by definition under 303(d), any increased sediment loadings into Libby Creek in the short-term (as predicted in the FEIS) will be "harmful, detrimental or injurious" to the beneficial uses of the Creek. As such, they cannot be allowed under the CWA/Organic Act/Part 228.

Mitigation measures are ineffective to prevent impacts to fisheries due to the timing of sediment reduction, which is predicted to occur gradually over time after the construction phase. The evaluation and construction phases are when the sediment impacts to water quality and fisheries are greatest.

The agency downplays the impacts of sediment delivery by characterizing it as short-term and stating that is will be reduced substantially in the long-term compared to existing conditions over that same time period. The problem with this approach is that improvement over the long-term will not benefit the fishery if native trout are eliminated, or populations are substantially reduced, during the construction and evaluation phases.

> BMPs and road access changes would result in substantial long-term decreases of an estimated 57 percent in sediment delivery to project area streams in Alternatives 3 and 4 over the life of the project. These decreases would benefit the bull trout habitat and populations. **While some adverse effects to successful incubation of bull trout embryos may occur during the Construction Phase, these effects would be expected to be short-term.**

FEIS at M-246 (emphasis added). *See also* M-247, stating that sediment reductions would only occur "in the long-term."

The transmission line will cross four perennial streams and 18 other streams (Table 77) delivering 103.7 tons of sediment. Again, the agency minimizes the impact of this sediment delivery by stating that the situation will improve over time after revegetation occurs.

> FEIS pg 726. (Alternative B) After construction was completed, disturbed areas would be stabilized and revegetated. Erosion and sediment delivery would decrease after vegetation cover was re-established. The DEQ would require on-site inspections of perennial stream crossings to determine the method that would result in minimizing impacts on stream banks and water quality considering the nature and cost of the available crossing methods.
>
> FEIS pg. 727. The agencies' mitigation of road closures would reduce the contribution of additional sediment to below existing levels in the Libby Creek watershed. Other effects of Alternative D-R would be the same as Alternative B.

Mitigation measures designed to reduce flow may increase sediment delivery.

Libby Creek could be further impacted by possible aggressive mitigation measures, which could include instream structural manipulations supposed to compensate for flow losses. (Christopher Frissell, 2011 comments on the SDEIS for Montanore.)

Mitigations such as the evaluation of the potential to create wetlands and ponds, as well as road closures with minimal monitoring and enforcement, have questionable value.

The FEIS states that Mines Management will "evaluate" the potential for creating wetlands and ponds to capture sediment. It goes on to state that if wetlands or ponds were not constructed to retain mobilized sediments on the Libby Creek floodplain, the additional input of sediments to Libby Creek may cause channel aggradation, which may result in bank erosion due to channel widening. Merely evaluating the potential to create wetlands and ponds cannot be considered a mitigation measure. The construction of functional wetlands must be a requirement.

Road closures will be ineffective if gates and barriers are circumvented by the public. Checking the status of closures twice a year is grossly inadequate monitoring and enforcement due to the significant use of ORVs on the forest.

> FEIS, pg 152: Similar to Alternative 2, MMC would use open and closed roads in Alternative 3. Some currently open roads would be gated. The agencies' wildlife mitigation includes access changes, either with gates or barriers. MMC would be responsible for installing and maintaining each closure. MMC would check the status of the closures twice-a-year (spring and fall), and repair any gate or barrier that is allowing access. The gates would have dual-locking devices to allow the KNF fire or administrative access.

The uncertainty surrounding the actual amount of sediment delivered makes it impossible to evaluate the effectiveness of proposed mitigation measures.

FEIS 3.6.2, pg 319: The possible changes to stream habitat that may occur from increases in sediment delivery rates to streams were then evaluated as to their possible effect on fish and other aquatic populations within the analysis area. The uncertainty and limitations associated with the water quality analysis and the Water Erosion Prediction Project (WEPP) analysis used to estimate sediment delivery from roads and the transmission line were discussed in KNF's WEPP analysis (2013c) and section 3.13.4.5, *Uncertainties Associated with Water Quality Analysis*. While the model results are expected to be representative of what would occur as a result of the project, the uncertainty and limitations of the modeling could potentially affect the qualitative interpretation of the effects of any changes in sediment delivery to streams as a result of the project on the aquatic habitat.

V. RIPARIAN HABITAT CONSERVATION AREAS (RHCAs) ARE NOT FULLY PROTECTED IN VIOLATION OF THE NFMA AND FOREST PLAN

As specified in our comments **(**S202-13) and herein, the FEIS and DROD do not adequately analyze and protect against the adverse effects to the RHCAs in violation of NEPA and the

NFMA/Forest Plan.

SOC comment: The disturbance of Riparian Habitat Conservation Areas (RHCAs) would also contribute to sediment impacts to the streams. The preferred Alternative #4 would disturb 349 acres of RCHAs, mostly related to the Cherry Creek tailings impoundment site. Can the amount of RHCA damage be reduced?

Response: The analysis of disturbance in RHCAs was revised in SDEIS and again in the FEIS to reflect minor changes in the proposed disturbance area. The number of RHCA acres disturbed under Alternative 4 in both private and National Forest land was estimated to be 383 acres in Section 3.6.4.2.1. The disturbance boundaries for the Little Cherry Creek tailings impoundment were already reduced from those used in Alternative 2 to minimize effects on RHCAs as described in Section 3.6.4.4.1 of the SDEIS and FEIS. Additionally, the amount of RHCA disturbance would be decreased further by 31 percent under Alternative 3 as compared to Alternative 4. Alternative 3 is the KNF's preferred mine alternative. Sediment delivery to streams would be further reduced though road access changes and the use of BMPs in the long-term with all alternatives, as described in the "Sediment" subsections of Section 3.6.4.3.1. Road closure could allow the reestablishment of RHCAs along these roads in the Libby Creek, East Fork Rock Creek, and Fisher River watersheds.

SOC SDEIS Comment: 331-45 An alternative needs to be considered whereby all facilities, as well as alternatives for each facility currently proposed to be located in an RHCA, would be located outside of Riparian Habitat Conservation Areas. This would remove RHCAs as an issue and would protect the habitat that these areas provide. Financial and logistical considerations need to be secondary to protecting the RHCAs. This includes avoidance of transmission line stream crossings and other structures within RHCAs.

Response: Section 3.6.4.11.2 of the SDEIS and FEIS discussed consistency with INFISH (referred to as INFS in the document) and other Forest Plan requirements. This section includes descriptions of the RHCA standards and guidelines, and states specifically whether and how the alternatives would achieve compliance with these. The SDEIS and FEIS state the Alternative 2 and Transmission Line Alternative B would not be in compliance with several of the standards and guidelines. As described in sections 3.6.4.2.1, 3.6.4.3.1, and 3.6.4.4.1, all alternatives include some disturbance within RHCAs. The location of the mine facilities, including transmission line stream crossings and access road stream crossings, outside of RHCAs, would not be feasible. Alternative 3 minimized the number of acres disturbed, and decreased this acreage by almost 50 percent. No alternatives were devised that eliminated the need to place facilities and structures within RHCAs. A discussion of the other alternatives evaluated but not included in the analysis were described in Section 2.13 of the SDEIS and FEIS, with the rationale for why these alternatives were not considered further also provided in this section. Optional locations were evaluated for the underground mine, tailings disposal, plant site, adit sites, LAD areas, access roads, and transmission lines. The possible locations of the plant and impoundment sites evaluated in the initial screening are shown in Figure 46 of the SDEIS. The potential effects of various tailings impoundment locations were evaluated using Level 1, Level 2, and Level 3 screening criteria as described in Section 2.13.4.2.2 through 2.13.4.2.4. Level II screening stresses a focus on impacts to RHCAs and bull trout habitat, among other criteria. The SDEIS

acknowledges that adverse direct effects to fish habitat could occur where roads and other structures were constructed in RHCAs, and describes the potential effects in Section 3.6.4.2.1. This section further notes that the required implementation of BMPs would minimize the amount of sediment contributed to the project area streams and serve to decrease long-term sediment delivery. Overall, when the effect of BMPs and road status changes are factored in, long-term sediment delivery from roads to streams would be less with the alternatives than under existing conditions (see sediment discussion in Section 3.13.4).

SOC SDEIS Comment: 331-21 The RHCAs in the Poorman tailings Impoundment Site in Alternative 3 are not adjacent to fish- bearing streams. (SDEIS, page S-37) More explanation is required for this statement from the SDEIS. In addition, the fact that the streams may not be "fish-bearing" does not exempt them from the MM standards protecting RHCAs. Why does the SDEIS erroneously state that the tailings impoundment site is not adjacent to fish bearing streams?

Response: The FEIS clarified this statement with additional text in the summary and also within Section 3.6.4.3.1. The statement in the summary of the SDEIS and FEIS was referring to the fact that the RHCAs at Poorman impoundment site are not adjacent to fish-bearing streams, which affects the width of the RHCAs. Text was added to clarify that non-fish bearing streams are not exempt from the standards protecting RHCAs but do differ in standard widths mandated for a RHCA. Compliance with MM standards was discussed in Sections 3.6.11.2 of the DEIS, SDEIS and FEIS.

SOC SDEIS Comment: 331-22 During the spring when the roads are most vulnerable to run-off, would public travel be restricted to minimize sediment delivery? It appears that decisions such as this have been left to MMC to make. The development and implementation of a Road Management Plan on public land should not be done without public involvement.

Response: The Road Management Plan would be developed by MMC. It would not be subject to public involvement, but would be subject to approval by the agencies, as stated in Section 3.6.4.11.2 of the SDEIS and FEIS. The Road Management Plan is part of RF-2c of the RHCA standards and guidelines, which also specifies that this plan will address the regulation of traffic during wet periods to minimize erosion and sediment delivery to streams. The agencies would have to agree that the Road Management Plan designed by MMC would effectively do so, although this may include other methods rather than restricting public travel in spring. The Road Management Plan would be available for public review.

SOC SFEIS Comment 331-22 The final design pertaining to the location of structures within the RHCAs should have been included in the SDEIS to allow public comment. What structures would be located in the RHCAs, where in the RHCAs would they be built, and how much traffic would be associated with these structures? Why is MMC allowed to decide whether the final location of the structures is economically feasible? Is it the opinion of the agencies that economic interests should be considered when deciding various siting options? If a location outside of an RHCA for structures was identified, but would cause MMC economic hardship, would that site be eliminated in favor of a location within an RHCA?

Response: Figure 53 of the SDEIS shows the location of the RHCAs and other riparian areas in relation to the generalized mine facility and transmission line locations for the alternatives. Sections 3.6.4.2.1 states what mine facilities would be located within RHCAs for Alternative 2, and Alternative 4 uses similar locations for some facilities but was specifically designed to reduce effects on RHCAs. Section 2.13 of the SDEIS discussed the agencies' rationale for other alternatives that were initially considered but subsequently eliminated from the alternatives analyses. These included other locations for the tailings impoundment, plant site, and other mine facilities. While economic feasibility was considered during the agencies' analysis of possible options, many other factors were also considered before the final set of alternatives were produced. The potential effects of various tailings impoundment locations were evaluated using Level 1, Level 2, and Level 3 screening criteria as described in Section 2.13.4.2.2 through 2.13.4.2.4. Level II screening stressed a focus on impacts to RHCAs and bull trout habitat, among other criteria. Projected traffic volume in each alternative was discussed in Section 3.21 of the DEIS and FEIS.

Objection Issues Regarding RHCA's and NFMA Compliance:

The agency's proposed alternative improperly allows for road construction and the citing of mine facilities within RCHAs based on economic considerations to the company. Further, MMC would develop a road management plan that has not been subject to public review.

The Forest Service is violating National Forest Management Act's (NFMA) requirement that all actions, such as mining, be consistent with the Forest Plan. NFMA's Forest Plan consistency provision requires that resource plans and permits (such as a mining Plan or permit) *shall be* consistent with the Land and Resource Management Plan (Forest Plan). 16 U.S.C. § 1604(i); 36 C.F.R. § 219.10(e). See also, 36 C.F.R. Part 228 (mineral regulations enacted pursuant to the Organic Act). Forest Service authorization of mining, including in a ROD, must comply with all Forest Plan and NFMA requirements. Hells Canyon Preservation Council v. Haines, 2006 WL 2252554, *7-*10 (D. Or. 2006) (finding ROD for mining operations violates Forest Plan/INFISH and other standards). As held by the federal court in Hells Canyon, the fact that operations are proposed on an unpatented mining claim does not override the agency's duty to comply with the Forest Plan standards under the NFMA. Unless the Forest Service determines, with full NEPA compliance, that there is absolutely "no alternative" to the location of all these facilities in the RCA, it must prohibit their placement in the RHCA. *See* Hells Canyon Preservation Council v. Haines, 2006 WL 2252554, *7-*10 (D. Or. 2006). *See also* Gifford Pinchot Task Force v. Perez, 2014 WL 3019165, *20-22 (D. Or. 2014)(mine exploration drilling waste sump is a "support facility" requiring compliance with similar forest plan riparian protection standards).

The Forest Service has failed to ensure that all Forest Plan/INFS standards are met by approving road construction and the siting of mine facilities and support structures within RHCAs. Additionally, the Forest Service is allowing economic considerations to influence its decision to allow mine facilities and support structures to be located within RHCA's. The exclusion of public input on road construction and facilities siting within RHCAs is a violation of NEPA and the NFMA.

> *Mine Alternatives 3 and 4, and Transmission Line Alternative C-R-R, D-R, and E-R.* These alternatives incorporate modifications and mitigations to MMC's proposals that are alternatives to siting facilities in RHCAs. The LAD Areas would not be used in Alternatives 3 and 4. These alternatives would reduce the number of facilities located in RHCAs. **During final design, MMC would locate these structures outside of riparian areas if alternative locations were technically and economically feasible. No alternatives exist that eliminate the need to site facilities in RHCAs.** These alternatives would minimize effects on RHCAs and inland native fish. Because no alternative to road construction existed, MMC would develop a Road Management Plan that analyzed any new road constructed in a RHCA, documenting it was the minimum necessary for the approved mineral activity. Roads no longer required for mineral or land management activities would be placed into intermittent stored service or decommissioned (see INFS standard RF-3).

FEIS at 459 (emphasis added).

The FEIS also admits that compliance with the MM and other Forest Plan/INFISH standards has yet to be demonstrated. For example, the FEIS states that:

> Disturbance within riparian areas would be less than Alternative B, with 35 acres of RHCAs on National Forest System land and 13 acres of other riparian areas on private land (Table 78). Based on a preliminary design, six structures would be in a RHCA on National Forest System land and three structures would be in a riparian area on private or State land. **During final design, MMC would locate these structures outside of riparian areas if alternative locations were technically and economically feasible**. Minimizing structure locations in riparian areas, and using a helicopter for line stringing and site clearing would minimize contributions of sediment to area streams.

FEIS at 446 (emphasis added).

For the Roads Standards, the FEIS again admits that compliance with the RHCA protections will be based on the contents of an as-yet-unsubmitted road mitigation plan. "Alternatives 3 and 4 would comply with RF-2 because they provide for the development and implementation of a final Road Management Plan. MMC would develop for the lead agencies' approval, and implement a final Road Management Plan." FEIS at 454.

Yet, such future pledges to meet the standards' requirement to "locate structures outside of riparian areas" must be met now, during the NEPA and NFMA consistency review periods.

Additionally, there is no evidence that the project will "avoid adverse effects on inland native fish" as required by Lands Standard LH-3. The FEIS merely states that "all mine alternatives" would "avoid adverse effects on inland native fish." FEIS at 462. This clearly contradicts the evidence in the record as to such adverse effects (as detailed herein).

For Standard MM-1, as noted herein, the USFS has not meet its burden based on currently available mitigation and other plans, to "ensure operators take all practicable measures to

maintain, protect, and rehabilitate fish and wildlife habitat which may be affected by the operations." FEIS at 458. At a minimum, the short-term increases in sediment and other impacts to bull trout and habitat refutes this claim.

For Standard MM-2, the NFMA/Forest Plan mandates that the USFS require MMC to:

> *Locate structures, support facilities, and roads outside Riparian Habitat Conservation Areas. Where no alternative to siting facilities in Riparian Habitat Conservation Areas exists, locate and construct the facilities in ways that avoid impacts on Riparian Habitat Conservation Areas and streams and adverse effects on inland native fish. Where no alternative to road construction exists, keep roads to the minimum necessary for the approved mineral activity. Close, obliterate and revegetate roads no longer required for mineral or land management activities.*

FEIS at 458. Here, the USFS states that:

> ***Mine Alternatives 3 and 4, and Transmission Line Alternative C-R-R, D-R, and E-R***. These alternatives incorporate modifications and mitigations to MMC's proposals that are alternatives to siting facilities in RHCAs. The LAD Areas would not be used in Alternatives 3 and 4. These alternatives would reduce the number of facilities located in RHCAs. **During final design, MMC would locate these structures outside of riparian areas if alternative locations were technically and economically feasible.** No alternatives exist that eliminate the need to site facilities in RHCAs. These alternatives would minimize effects on RHCAs and inland native fish. Because no alternative to road construction existed, MMC would develop a Road Management Plan that analyzed any new road constructed in a RHCA, documenting it was the minimum necessary for the approved mineral activity.

FEIS at 459 (emphasis added). Again, ensuring compliance with the required standards based on a future "final design" violates not only NEPA, but the NFMA/Plan as well. The same is true for MM-3, as the tailings and other waste facilities would be located in RHCAs, but much of the critical analysis is postponed to the future, after the NEPA and NFMA review process is completed.

The Forest Service is improperly relying on mitigation measures that will not prevent impacts to fisheries due to the timing of sediment reduction, which is predicted to occur gradually over time after the construction phase. The construction phase is when the impacts from sediment to water quality and fisheries are greatest.

As detailed herein, the USFS's reliance on the fact that sediment will be purportedly reduced in the long-term, but increase in the short-term, violates the agency's mandates under the CWA, Organic Act/228, NFMA and ESA.

W. FAILURE TO MINIMIZE IMPACTS TO OLD GROWTH

As described in our comments (M-413, Volume 3, FEIS), and herein, the FEIS and DROD fail to minimize the impacts to old growth forest.

Comment 331-42: The agencies propose to designate approximately 700 acres elsewhere on the forest as old growth so it would be managed to retain and develop old growth characteristics. Why would classifying 700 acres as old growth provide any additional future security? The agencies also recognize that the 700 acres will not replace the old growth that is lost because in actuality no new old growth would have been created.

Response: As described in Section 3.22.2.4 of the FEIS, designation of additional areas of old growth would not create new old growth, but would ensure that these areas are managed to retain or develop old growth characteristics. While it does not currently have all the old growth characteristics to be considered old growth, the KNF is focused on managing designated replacement old growth to accelerate the development of old growth characteristics (Catsaneda 2004). As areas of replacement old growth mature, they are anticipated to provide the attributes necessary to provide effective old growth habitat and take the place of old growth that will inevitably succumb to fire, wind, insect and disease outbreaks, and other disturbances. .

Objection Issues:

Failure to Minimize Impacts

Although creative, the agencies' plan to set aside forest as "future" old growth is not mitigation for the loss of old growth from the project. Old growth dependent species will be impacted by the loss of old growth. This does not constitute minimization of impacts required by the Organic Act/Part 228.

X. FAILURE TO EVALUATE IMPACTS TO WILDLIFE SPECIES, SUCH AS WOLVERINE, MOUNTAIN GOATS, LYNX, PILEATED WOODPECKERS; FAILURE TO MITIGATE IMPACTS; FAILURE TO CONSIDER CUMULATIVE IMPACTS.

As described in our comments (pgs. M-426, 429, 434, 436, 467, Volume 3, FEIS), and herein, the FEIS and DROD fail to evaluate impacts to wildlife species such as wolverine, mountain goats, lynx, and pileated woodpeckers, and fail to properly mitigate direct/indirect and/or cumulative impacts.

Comment 331-38: A statement is made in the DEIS that "Snag densities and quantities of downed wood would remain above KNF-recommended levels and would be sufficient to sustain viable populations of cavity- dependent species in the KNF (S-62). While they may or may not be sufficient to maintain populations of smaller cavity nesters, snag requirements of Pileated Woodpeckers are for large diameter trees. It appears that KNF conducted sampling of snags in old growth, but Table 152 indicates that the analysis was based on snags per acre greater than 10" diameter, and there is no indication of what percentage of these are at least 20" dbh.

Response: The effects of the action alternatives on pileated woodpecker, and methods used in the effects analysis, are described in Section 3.25.3.5 of the FEIS. Project impacts were evaluated based on impacts to important attributes of pileated woodpecker habitat, primarily impacts to designated and undesignated old growth habitat. Specific features of old growth stands evaluated for project impacts included those evaluated when determining designations for old growth in the KNF, including preferred nest tree species, preferred nest tree size, down logs (both size and quantity), basal area, and canopy closure.

As described in Section 3.25.2, the estimated average density of snags at least 20 inches in diameter was 1 snag per acre. As disclosed in the FEIS, the agencies agree that the action alternatives would result in the loss of snags greater than 20 inches diameter at breast height (dbh) and down logs greater than 10 inches dbh that provide potential nesting and foraging habitat for pileated woodpeckers; however, snag levels would continue to exceed KFP recommendations. KFP direction is to maintain habitat capable of providing for at least 40 percent of the potential population level (PPL) of cavity dependent species throughout commercial forest lands and at least 60 percent of the PPL in riparian areas. In all action alternatives, analysis area PSUs would continue to provide sufficient quality and quantity of snags and replacement snags for viable populations of cavity habitat dependent wildlife species well above minimum standard 40 percent on National Forest System lands. Impacts to riparian habitat are negligible compared to the amount available with the PSUs and the 60 percent level would be maintained throughout the PSUs.

331-36 Cumulative impacts to mountain goat from the Montanore and Rock Creek Mines should have been included in the SDEIS. The Rock Creek EIS looked at the joint impacts and recognized the regional impacts from these two mines, as did the Montanore DEIS. Why were cumulative impacts not considered in the SDEIS? The Rock Creek EIS states that the Montanore mine would have the most direct cumulative impact on mountain goats. The goats use the head end of Libby, Ramsey, West Fisher, and Poorman Creek. The DEIS states that these drainages are the population epicenter for the mountain goat herd in the southern Cabinet Mountains.

Response: Cumulative effects of the project on mountain goats were disclosed in Section 3.25.3.4.3.

331-37 The wolverine could become listed as threatened in the near future because of the existence of small, isolated populations, the degradation of habitat, and their sensitivity to human disturbance. How would the management of this species change if it became listed? With the Rock Creek mine already permitted, would the cumulative impacts be considered?

Response: Cumulative effects on the wolverine, including an increased risk of wolverine mortality from trapping due to increased access into wolverine denning habitat, are disclosed in Section 3.25.4.10. Cumulative impacts could be offset by habitat acquisitions and road access changes associated with grizzly bear mitigation for the Montanore Project and other reasonably foreseeable actions. Some cumulative displacement effects would be offset by access changes planned as mitigation for the Montanore, Wayup Mine/Fourth of July Road Access, and the Bear

Lakes Access projects. Management of the wolverine, if it was listed, would be determined by the Recovery Plan and other direction from the FWS.

331-39 The DEIS acknowledges cumulative impacts, but does not address a solution. Continuing to authorize projects that will impact sensitive species is contrary to the Forest Service's duty to maintain viable populations of sensitive species and prevent a trend towards ESA listing.

Response: Forest Plan Consistency was addressed for black-backed woodpecker, flammulated owl, and goshawk in sections 3.25.4.3.4, 3.25.4.6.4, and 3.25.7.3 of the FEIS, respectively. All action alternatives would be consistent with KFP direction to maintain a minimum of 10 percent old growth below 5,500 feet in elevation in each third order drainage or compartment, or a combination of compartments and with KFP direction for snags, snag replacement trees, and down wood (KFP Vol. 1, II-1 #8 and II-7; Vol. 2, Appendix 16). Mitigation measures for the action alternatives and other reasonably foreseeable actions, such as improvement harvest and prescribed burning, and habitat acquisitions and road access changes, would offset some habitat impacts. Impacts on general forest foraging habitat in the agencies' alternatives would be minimized through implementation of the Environmental Specifications (Appendix D) and a Vegetation Removal and Disposal Plan. The action alternatives could impact individuals and/or their habitat, but would not contribute to a trend toward federal listing for black-backed woodpeckers, flammulated owls, or goshawks. Sufficient habitat within the in the analysis area would likely remain to support existing populations.

331-36 Also, why is the acreage impacted different in the SDEIS from what was calculated in the DEIS? The SDEIS should have explained in detail what changes were made from the DEIS.

Response: Changes between the DEIS and the SDEIS are summarized in Section 1.1 of the SDEIS, and include analysis of revised transmission line alternatives. As explained in Section 1.1, the grizzly bear impacts analysis (section 3.25.5.2) in the Wildlife section was presented in its entirety to reflect additional information on the agencies' revised mitigation plans and the revised grizzly bear displacement analysis.

331-37 Lynx would lose considerable habitat as a result of the Montanore mine. Construction of the transmission lines and the tailings facility would impact approximately 629 acres of habitat, including denning habitat for the lynx. Isn't it likely that the volume of lynx habitat impacted will be much greater because the species will be displaced by the industrialization? Shouldn't it be expected that human activity, traffic volume, and noise would drive the lynx to other drainages? As a consequence of increased access into lynx habitat, it is expected that there will be an increase in incidental take of lynx by trapping.

Response: See comment response to issue 4833 on p. M-466. The analysis of effects of the alternatives on lynx was described in Section 3.25.5 of the FEIS. Grizzly bear habitat security for bears is maintained by controlling and/or managing road access, which also maintains and improves Canada lynx habitat use by reducing the risk of displacement effects and poaching. The agencies' wildlife mitigation plan (see Section 2.5.7.4.1) includes road access changes to mitigate for the effects to grizzly bears that would provide additional secure habitat for lynx where the access changes occurred in LAUs. Impacts on lynx could be reduced in all alternatives

through MMC's and the agencies' land acquisition program for grizzly bear mitigation. Some of the parcels identified for potential acquisition occur within the directly affected LAUs or in areas identified as important for linkage outside of LAUs. Acquired parcels would be managed for grizzly bear use in perpetuity. Dependent upon the actual location of the acquired mitigation lands, any additional reductions in wheeled motorized access and increase in secure habitat for grizzly bears, in turn could provide higher levels of security for lynx and potentially reduce risk of displacement and potential poaching.

Hunting and trapping is likely to continue to occur on all lands throughout the life of any of the alternatives. Hunting activities are regulated by the FWP. The Forest Service influences hunter access through road management. Such activities always carry the risk of accidental mortality from non-target trap captures, misidentified targets or from malicious killings. Potential human-caused mortality is a function of other factors such as hunting or trapping regulations that are outside the authority of the Forest Service control. This risk of mortality on other lands would be independent of the action alternatives.

331-38 Under the description of alternatives in 3.24.6.4, it is stated: Alternative 2 would result in localized impacts to birds associated with forest and shrub field habitats, it would not result in widespread changes in bird communities on the KNF. The DEIS then goes on to say that impacts would be less for Alternatives 3 and 4. While changes in composition of communities in the forest overall may not change, bird abundance would be affected with less breeding pairs present. The cumulative loss of habitat for breeding pairs is what contributes to declining bird populations. In continuing to permit every mine proposed, the Kootenai should begin assessing cumulative impacts and deny permits for projects such as this which has widespread impacts on a multitude of species including sensitive species, management indicator species, and threatened species.

Response: Cumulative effects to migratory birds were described in Section 3.25.8 of the FEIS, to management indicator species were described in in Section 3.25.3 of the FEIS, and to Forest Sensitive species were described in Section 3.25.4 of the FEIS.

Objection Issues:

Failure to disclose impacts

The FEIS admits that there will be unavoidable adverse impacts to wildlife species, yet fails to fully disclose these impacts due to the lack of a Biological Assessment in the DEIS or SDEIS for public review. This is a violation of NEPA, NFMA, and the ESA. The agencies are required to fully analyze and disclose the baseline conditions, and any potential impacts, to wildlife species, especially sensitive, threatened and endangered species.

In their comments on the DEIS, Montana Fish, Wildlife & Parks (FWP) states that the DEIS is inadequate in its scope and depth relative to big game species and carnivores. FEIS Appendix M-24

In addition, the wildlife agency emphasizes that the cumulative impacts of the Rock Creek and

Montanore mines need to be addressed in the NEPA process. FEIS at M-24.

Failure to minimize impacts

Under the NFMA, Organic Act, and their implementing regulations, the USFS is required to protect the diversity of wildlife species, and manage and protect indicator and sensitive or special status species. The Montanore Project will result in severe and permanent adverse impacts to wildlife. These impacts are not adequately prevented or mitigated, in violation of the ESA (for the Threatened and Endangered Species and their habitat that will be adversely affected), NFMA (for ESA-listed and Sensitive and Indicator Species), Organic Act and 36 CFR Part 228 (failure to protect wildlife and fisheries), and other laws, regulations, and policies noted herein. Further, under the Organic Act, and the 36 CFR Part 228 regulations, the agency cannot approve a mining PoO unless it can be demonstrated that all feasible measures have been taken to "minimize adverse impacts" on National Forest resources, including all measures to protect wildlife and habitat. The "operator shall take all practicable measures to maintain and protect fisheries and wildlife habitat." 36 CFR 228.8(e).

This language was recently relied upon by the federal courts in overturning the Rock Creek Project where the USFS did not adequately protect wildlife. "The operator also has a separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R.§ 228.8(e)." Rock Creek Alliance v. Forest Service, 703 F.Supp.2d 1152, 1164 (D. Montana 2010) (Forest Service PoO approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries). "Under the Organic Act the Forest Service must minimize adverse environmental impacts where feasible and must require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170.

In summary, the Forest Service's Organic Act requires that the agency "must . . . ensure that its approval of a plan or project does not result in the 'destruction' and 'degradation' of the public forests." Clouser v. Madigan, 1992 WL 694368, at *4 (D. Or. 1992), *aff'd sub nom.* Clouser v. Espy, 42 F.3d 1522 (9th Cir. 1994).

The USFS failed to meet these mandates in this case. As shown herein, including the numerous examples showing the unacceptable environmental impacts that are predicted to occur if any of the action alternatives are approved (even with the limited mitigation measures proposed), impacts which the agency has failed to prevent or minimize, the USFS has and will violate the Organic Act and Part 228 regulations. This includes, as noted herein, the proposed amendment to the Kootenai Forest Plan, which would also violate the Organic Act as well as the NFMA.

> The action alternatives would impact a range of wildlife habitat throughout the analysis area during both construction and operations. The wildlife resources would be impacted by direct surface disturbance, noise, vibration, light, dust, increased human activity, and increased traffic. Unavoidable adverse impacts on wildlife habitat would vary by the acres of habitat removed or affected by each action alternative. Activities would include construction of mine facilities and associated roads, the transmission line and associated new roads, and Sedlak Park Substation and loop line. Adverse impacts

> that cannot be avoided include changes in available habitat within an individual animal's home range, physical removal of habitat such as wetlands or winter range habitat resulting in permanent displacement, changes in cover, changes in foraging efficiency and success, changes in reproductive success, changes in survival or growth rates of young, changes in predator-prey relationships, increased habitat fragmentation and disruption of dispersal and movement patterns for species. Some long-term unavoidable adverse effects on wildlife populations would potentially occur as a result of mortalities during construction and operation activities. Areas successfully reclaimed would provide wildlife habitat post-mining over time.
> …
> Impacts to wildlife and wildlife habitat would include removal of habitat for mine and facility construction, disturbance from mining and associated activities, and direct mortality from increased mine related traffic. Most impacts to wildlife resources would initially result from construction activities, including losses of cover, increases in road densities, decreases in habitat security, and increases in disturbance and displacement. Physical removal and losses of habitat, including winter range or calving habitat for big game, wetlands, or snags and downed wood due to mine associated activities would be long-term, lasting until reclamation or beyond. Mine associated disturbance resulting in long-term displacement (lasting the life of the mine, or longer) of a species from the area may result in a post-reclamation delay in the reestablishment of use. Other disturbances associated with human activity may be short term and temporary in duration, such as displacement from helicopter use associated with the transmission lines, or blasting associated with the underground development.

FEIS at 1443.

Montana FWP states that inadequate mitigation measures are offered for permanent impacts to big game species and other nongame/native species. They also note that while there are 16 pages discussing mitigation measures for grizzly bears, there is only one page for all the big game species. They disagree that mitigation measures for grizzly bears would accommodate other species, and point out that the core of the habitat security mitigation is the closure of 5 roads in the vicinity of the mine or access route, which falls short of addressing habitat security, displacement, and increased industrial activity. In addition, the wildlife agency emphasizes that the cumulative impacts of the Rock Creek and Montanore mines need to be addressed in the NEPA process. FEIS at M-24.

Montana FWP also expresses concerns over the location of the transmission lines and notes that all alternatives would impact an important corridor and linkage zone. FEIS at M-27.

Wolverines:

Failure to fully analyze and disclose impacts

By failing to provide a Biological Assessment for public review, the Forest Service did not fully disclose impacts to wolverine, a sensitive species. This is a violation of NEPA.

In their comments, Montana FWP states that wolverines, a species proposed for listing, are present in the area, including the Libby Creek and Rock Creek drainages, but the impacts on this species have not been fully evaluated. FEIS at M-28. Montana FWP states that due to the mine's close proximity to roadless areas and the wilderness, there is a potential for displacement. FEIS at M-28.

Unsupported Conclusions

Wolverines, a forest sensitive species, are extremely rare because of the existence of small, isolated populations, the degradation of habitat, and their sensitivity to human disturbance, yet the Forest Service dismisses impacts to wolverines by stating that although the mine will impact individual wolverines it will not affect wolverine populations. The agency bases this conclusion on the supposition that wolverines can co-exist in areas of protracted human disturbance, which has not been demonstrated by research. The Forest Service cites a reference from the USFWS and refers to the "apparent ability of wolverines to coexist in areas of human disturbance." FEIS at 1188. This conclusion is a misrepresentation of Kim Heinemeyer's wolverine/winter recreation progress report looking at short-term exposure of wolverines to a relatively small number of skiers and snowmobilers. The report in no way concludes that long-term activities will not disturb wolverines. The agency also bases its findings of no impact on the availability of habitat adjacent to the project area within the Cabinet Mountains. By failing to consider the cumulative affects from the Rock Creek mine, the agency cannot demonstrate that the available adjacent habitat will be suitable.

Failure to consider cumulative impacts

As we mentioned in our previous comments, wolverines would be cumulatively impacted by the Rock Creek and Montanore mines. This statement is supported by the agency itself in its analysis of the Rock Creek mine. A forest sensitive species, the wolverine would most likely be cumulatively affected by the Montanore and Rock Creek mines. Impacts would include a reduction in travel and dispersal capabilities because of a reduction in remote areas and a constriction of the Cabinet Mountains Wilderness. There is also an increased trapping risk from risk that trapping could exceed the ability of the wolverine to maintain population numbers. Rock Creek EIS 1-172 (See Attachment Q.)

Failure to minimize impacts to wolverines

The Forest Service has failed to minimize adverse impacts to wolverines, which are a Sensitive Species. Continuing to authorize projects that will impact sensitive species is contrary to the Forest Service's duty to maintain viable populations of sensitive species and prevent a trend towards ESA listing.

Under the NFMA and its implementing regulations, the USFS is required to protect the diversity of wildlife species, and manage and protect indicator and sensitive or special status species.

Lynx:

Failure to minimize impacts to lynx

Lynx were listed as a threatened species in 2000. The Kootenai National Forest is within a core lynx area. Long-term losses of lynx habitat are expected to occur as a direct consequence of the Montanore mine. The impacts on lynx from the proposed mine include, but are not limited to, loss and degradation of habitat, degradation of habitat for a major food source, increased mortality from vehicular collisions, and the risk of incidental take from trapping. Cumulative impacts from the Rock Creek mine will have significant impacts on travel and dispersal capabilities because of a reduction in remote areas and a constriction of the Cabinet Mountains Wilderness. (SOC SDEIS Comments.)

The Forest Service has substantive duties under ESA, and the ultimate responsibility for avoiding jeopardy to listed species lies with the action agency. The agency has failed to ensure that the Montanore is not likely to jeopardize the continued existence of lynx; failed to provide adequate information detailing the effects of the Mine on lynx; failed to use the best scientific and commercial data available; failed to adequately consider future actions and cumulative effects; failed to accurately or adequately describe or delineate the environmental baseline of the area that would be affected by the Mine; and failed to ensure that adequate consultation has occurred under Section 7 of the ESA. It must be noted that even if FWS makes a "no-jeopardy" finding, the ultimate responsibility for avoiding jeopardy to listed species still lies with the action agency.

Failure to fully analyze impacts to a listed species

Montana FWP notes that although FWP records show that lynx have been detected in the Miller Creek and Howard Lake areas, it appears that neither the USFS nor FWS have a monitoring program in place to enable changes in occurrence to be detected in the future. FEIS at M- 28-29.

Unsupported conclusions pertaining to mitigations and cumulative effects

The Forest Service is relying in part on mitigation for grizzly bear habitat security to reduce the risk of displacement effects and poaching for lynx where the access changes occurred in Lynx Analysis Units (LAUs). However, Montana FWP disagrees that mitigation measures for grizzly bears would accommodate other species. They note that the core of the habitat security mitigation is the closure of 5 roads in the vicinity of the mine or access route, which falls short of addressing habitat security, displacement, and increased industrial activity. In addition, the wildlife agency emphasizes that the cumulative impacts of the Rock Creek mine and Montanore need to be addressed in the NEPA process. FEIS at M-24.

The FEIS states that:

> **Objective LINK O1:** In areas of intermingled land ownership, work with landowners to pursue conservation easements, habitat conservation plans, or other solutions to reduce the potential of adverse impacts on lynx and lynx habitat.
>
> Please see discussion above under *"Effects Common to All Combined Action Alternatives."* In summary, the agencies' Threatened and Endangered Species

> Mitigation Plan for grizzly bear would acquire lands or conservation easements (acreages depend upon the combination) as mitigation for habitat physically lost and for habitat displacement. The acreages required for the agencies' combined action alternatives are greater than the habitat mitigation acreage for Alternative 2B and, as a result, the potential benefit to grizzly bears, and consequently lynx, is greater. These lands would be managed in perpetuity for grizzly bears. If these lands were located in lynx habitat, management for grizzly bears would also benefit lynx in terms of offsetting direct loss of habitat, precluding private parcels within lynx habitat from being developed, improving connectivity for lynx, and by reducing motorized access could provide higher levels of security for lynx and potentially reduce risk of displacement and potential poaching. Due to the required habitat compensation for grizzly bear mitigation for the agencies' combined action alternatives, potential to reduce impacts on lynx and their habitat may occur, and Alternative 3 would meet the intent of *Objective LINK 01***.**

FEIS at 1347. However, there is no evidence that the purported land agreements and other protections are in place, or have even been subjected to public review for this EIS process – a violation of NEPA, NFMA, Organic Act, and the ESA.

In its assessment of cumulative impacts from both mines, the agency states that the combined action alternatives, in combination with reasonably foreseeable actions, including the Rock Creek Project, would result in greater connectivity within the LAUs due to grizzly bear mitigation associated with habitat acquisition and road closures as compensation for grizzly bear habitat lost or displacement effects**.** FEIS at 1391. These conclusions are unsupported and contrary to the opinion of Montana's wildlife agency.

Mountain Goat:

Mountain goats are a USFS indicator species. The direct impacts from the Montanore mine include, but are not limited to; displacement from habitat due to mine related activities such as blasting, road building, and helicopter stringing. Disturbance will increase stress levels resulting in low reproductive rates, and lead to the displacement of animals from the herd.

> Mountain goats have been shown to be sensitive to human disturbances such as helicopter use, blasting, and road building (Joslin 1980; Côte 1996; Côte *et al.* 2013, Goldstein *et al.* 2005, Wilson 2005). Increased disturbance may result in displacement from suitable habitat. Mountain goats may also remain in proximity of the disturbance, potentially suffering increased stress levels that could result in a decline in reproductive rates (Ibid.). Mountain goats have been found be moderately to strongly disturbed by helicopter flights less than 500 meters horizontal distance (Côte *et al.* 2013).

FEIS at 1093-94.

The Rock Creek EIS states that the Montanore mine would have the most direct cumulative impact on mountain goats. The goats use the head end of Libby, Ramsey, West Fisher, and Poorman Creek. The DEIS states that these drainages are the population epicenter for the mountain goat herd in the southern Cabinet Mountains.

Impacts on the Rock Peak herd would be compounded when impacts from Montanore also are considered. The shifting of animals out of the Rock Creek and Ramsey Creek drainages into the CMW from either side could increase the stress of the displaced animals. It also could increase the use of unaffected summer ranges creating potential conflicts with resident goats in the CMW. (Rock Creek DEIS, Summary page 31).

Historical population numbers were estimated to be 350 goats in the Cabinet Mountains in 1950, declining to between 95 and 160 in 1980 (Casebeer *et al.* 1950; Joslin 1980). Mountain goat counts have fluctuated widely during FWP standardized sampling surveys of HD 100 (Cabinet Mountains) since 2001. A low count of 53 total goats was counted in HD 100 in 2001 with a high count of 105 in 2003. The most recent count (2013) counted 54 total goats. FEIS at 1095.

Mountain goats have been shown to be sensitive to human disturbances such as helicopter use, blasting, and road building, FEIS at 1093), and the agency acknowledges that goats will be subject to disturbance, FEIS at 1101-1102.

> While cumulative disturbance impacts on goats would be mostly short-term, disturbance during project operations, such as noise and human activity, would be long-term. Road access into critical goat habitat is the single biggest threat to goats in the Cabinet Mountains (Joslin 1980), and the Fourth of July proposal would construct a new road to the edge of the CMW and MS-1 habitat. Cumulative long-term disturbance to mountain goats could result in changes in seasonal habitat use, potentially causing goats to shift their use of both summer and winter habitat in Ramsey Creek (Alternative 2B only), and summer ranges in Libby Creek (all combined action alternatives), upper West Fisher Creek and Rock Creek basins. These potential changes in seasonal habitat use could increase the use of unaffected summer ranges creating potential conflicts with resident goats in the CMW. The cumulative disturbance effects of the mine alternatives and other reasonably foreseeable actions could result in reduced reproductive rates and a decrease in population of the Rock Creek herd. Some cumulative human-caused disturbance effects would be offset by road access changes (installation of barriers and gates and public access restrictions) and habitat acquisitions planned as mitigation for the Montanore, Rock Creek, and other projects.

FEIS at 1102.

Failure to minimize impacts

The agency has not formulated a plan to protect the mountain goat population from displacement from the Montanore and Rock Creek Mines, and other proposed activity.

> Disturbance impacts on mountain goats from the combined action alternatives would be compounded when impacts from other reasonably foreseeable actions are taken into account. **Although unlikely to occur concurrently**, the Wayup Mine/Fourth of July Road Access Project, the Rock Creek Project, and the Bear Lakes Access Project would collectively influence about 4,561 acres of MS-1 goat habitat (Bratkovich, pers. comm.

2008), potentially resulting in this habitat becoming less desirable or less effective for mountain goats.

FEIS at 1101 (emphasis added).

According to the USFS, if the agencies determined that construction disturbance were significantly affecting goat populations, MMC would develop, fund, and implement mitigation measures to reduce the impacts of mine disturbance. FEIS at 221. None of this has been done during the public review process as required by NEPA and the NFMA. Further, the USFS's statement that the Rock Creek Project is "unlikely to occur concurrently" with the Montanore project is obviously contradicted by the record.

Y. FAILURE TO FULLY REVIEW AND PROTECT AIR QUALITY

As expressed in our comments (p. M-239 and 243, Volume 3, FEIS), and herein, the FEIS and DROD do not adequately review air quality baseline and impacts and fail to protect air quality under the Clean Air Act and Organic Act/Part 228.

Comment 202-26: The DEIS fails to adequately analyze all direct, indirect and cumulative air quality impacts. For example, the DEIS barely mentions the air impacts from the nearby Rock Creek Project proposed directly adjacent to the Cabinet Mountains Wilderness Area in northwest Montana, a pristine Class I airshed. This proposal includes up to four ventilation adits, including one adit to be located in the heart of the Wilderness Area itself. Furthermore, according to Montana Department of Environmental Quality (MDEQ) calculations, emissions of criteria pollutants from the Rock Creek Project alone are predicted, in some instances, to consume 96% to 98% of the allowable Class I increment for the Cabinet Mountain Wilderness Area

202-28 The DEIS seems to be concluding that the Rock Creek and Montanore mine sites are in two different geographical locations, so that emissions and associated impacts on the wilderness airshed would not be considered cumulatively. What does the agency base its conclusion on that these two mines are located in two different geographical areas? The ridge that separates the two projects is part of the Class 1 airshed of the Cabinet Mountains Wilderness, and should not be considered as a buffer between the two sources. The conclusion that the air quality impacts from these two projects would not overlap seems to ignore the region's geography and requires an explanation as to how this determination was made.

202-30 The agency conclusion that the mine would not impact the Cabinet Mountains Wilderness seems very inconsistent with other agency analysis within the state of Montana. The USFS EIS travel plan for the Lewis and Clark National Forest, expressed concerns that OHV activity would negatively impact the Class 1 airsheds of the adjacent Bob Marshall and Scapegoat wilderness. Yet the Kootenai National Forest dismisses any impacts on the Class 1 airshed of the Cabinet Mountains Wilderness from two adjacent massive mining operations. Is it the conclusion of the USFS that ATV's have a greater impact on a Class 1 airshed than two mining operations or does the Bob Marshall and Scapegoat wilderness receive more protection

from the Lewis and Clark National Forest than the Cabinet Mountains Wilderness is afforded from the Kootenai?

202-38 The USFS analysis of the impacts to Libby Lakes must consider mine related air emissions from multiple sources. All of the region's numerous mining projects would consume fossil fuels. Emissions of SO4 and NO3 would threaten the pristine and sensitive nature of Libby Lakes with acidification. Why are the cumulative air impacts on the Libby Lakes from the large and small mines that are located in the region of the Cabinet Mountains Wilderness not being considered? Even by agency standards, the Wayup mine, Libby Creek Ventures, and the proposed Montanore mine would have to be considered in the same "geographical area."

In the response to comments (p. M-244), the FEIS states that **"**Section 3.4.4.7 adequately disclosed cumulative air quality effects of all reasonably foreseeable actions."

Objection Issues:

NEPA requires that agencies take a hard look at impacts. The Forest Service has failed to conduct an adequate review of the impacts to the air quality of the Class 1 Airshed.

The Conclusion that the Montanore and Rock Creek airsheds are not overlapping is unsupported.

The Forest Service has failed to protect the Class 1 Airshed of the Cabinet Mountains Wilderness

The Forest Service has failed to address the issue of cumulative impacts to the Class 1 Airshed from the combined emissions from the Montanore and Rock Creek mines, as well as other proposed projects. Simply stating that the geographic areas of impact will not overlap is insufficient. The agency has not demonstrated why emissions from two mines directly adjacent to each other apart do not overlap.

> The impact analyses conducted for the Montanore Mine predicted compliance with the Class I and Class II increments at the CMW boundary. The Montanore and Rock Creek projects have been analyzed and found to have a potential minor impact on ambient air quality. The geographic areas of impact for each project do not overlap and would not be additive.
>
> According to the 1992 Montanore Project Final EIS (USDA Forest Service *et al.* 1992), "NOx and SO2 increment consumption would occur from both projects (Rock Creek and Montanore), but the analysis indicates that there would not be a combined or overlapping increment consumption." This means that a small portion of the allowable increase in ambient air pollution concentrations under PSD Class 1 designations would occur as a result of each project. The increase would not be in the same geographic areas and would not be additive.

FEIS at 302.

This statement, that the USFS considered the impacts from the Rock Creek Project, directly contradicts the FEIS's admission that the emissions from the Rock Creek Project were **not analyzed**. In responding to comments regarding the Stipulation in the air quality litigation against the Rock Creek Project, the FEIS states:

> The DEQ required Montanore to complete a visibility impact assessment, an acid deposition impact assessment and comparison of modeled concentrations to Prevention of Significant Deterioration of Air Quality (PSD) Class I increments. These analyses were requested because the mine is within ¼ mile of the Cabinet Mountains Wilderness. Montanore demonstrated compliance with all NAAQS, MAAQS and the PSD Class I increment's analysis. **Note, the only source and emitting units evaluated were those associated with the Montanore Mine. There were no other sources located within the radius of impact *as Revett's MAQP was invalid and did not need to be considered.***
>
> The DEQ further believes that the requirements of the STIP would apply to any future construction, installation, alteration, or use that would be located within 10 kilometers of the Cabinet Mountains Wilderness or that would have an impact on that Class I area equal to or greater than 1 μg/m3 on a 24-hour basis.

FEIS at M-245 (emphasis added).

Thus, according to the FEIS, any source "located within 10 kilometers of the Cabinet Mountains Wilderness" should be reviewed as a potential emissions source and increment consumer. Yet, the USFS admits that "the only source and emitting units evaluated were those associated with the Montanore Mine." Id. This was based on the erroneous assumption that "Revett's MAQP was invalid and did not need to be considered." Id.

Because the Rock Creek Project's ventilation adit(s) is/are within 10 km of the Wilderness, and since Revett's Rock Creek Project's proposed air quality permits (and emissions) are real, the USFS's decision to ignore the Rock Creek Project's emissions on the Class I airshed, with the resulting conclusion that all air standards and increments will be met, cannot be supported.

Z. FAILURE TO ADEQUATELY ANALYZE GEOCHEMISTRY AND PROTECT RESOURCES

As noted in the previous comments and herein, the FEIS/DROD fails to adequately analyze geochemistry and fails to protect against adverse impacts.

Comment 202-9: It appears the agencies do not know what the actual likelihood of acid generation is, and that there is insufficient information to make an informed decision. A simple statement that risk would be "mitigated" is not sufficient. What criteria would the agencies use to make decisions related to whether mine development would proceed or additional mitigations would be provided following review of this additional characterization? Would the public be involved in this decision-making process?

Response: The risk of acid generation is generally low and was discussed in detail in Appendix C.9 of the SDEIS and FEIS. Geochemical data analysis and development of handling criteria was discussed in Section C.9.7 of the SDEIS and FEIS. The agencies roles, responsibilities and decisions are discussed in Section 1.5 and 1.6 of the DEIS, SEIS and FEIS. Under various laws, the KNF's responsibility is to ensure that mining activities minimize adverse environmental effects on National Forest System lands and comply with all applicable environmental laws. The Montana legislature has passed statutes and the Board of Environmental Review has adopted administrative rules defining the requirements for construction, operation, and reclamation of a mine and transmission line, discharge of mining waters, discharge of emissions, storage of hazardous and solid wastes, and development and operation of public water supply and sewer systems. The DEQ is required to evaluate the operating permit modification, certificate, and license applications submitted by MMC. All final mitigation and monitoring plans would be available for public review.

Comment 331-29: There is too much uncertainty about whether the Revett Formation ore would be acid generating. Additional testing after the groundwater begins to rebound is irresponsible. Is the plan for the MMC, the USFS, and MDEQ to do further testing during the 490-1200 years in which the void fills and the regional groundwater recovers?

Response: Section 3.9.4.3 of the SDEIS and FEIS discussed the acid generation risk of ore, waste rock and tailings. Most available data suggest that the Revett ore zone would not be acid generating. Critical elements of uncertainty about the Revett ore are related to delineation of altered waste zones in the lower Revett. An evaluation of the altered waste zones would be undertaken during the Evaluation Phase (See Appendix C.9), not during groundwater rebound. Testing of geochemistry, water quality, and water flow would continue throughout mine life and into closure.

202-9 The Rock Lake ore body is potentially acid generating. This potential for acid generation creates an immediate threat because of the proposed use of the waste rock in construction activities. The waste rock would be used to construct the dams at the tailings impoundment. If the waste rock used in construction is potentially acid generating, then it is also likely that the tailings would have the potential to become acid generating.

Response: Section 3.9.4.3 of the SDEIS and FEIS discussed the acid generation risk of ore, waste rock and tailings. Apart from the barren lead zone, none of the waste rock that would be mined at Montanore has shown acid production in kinetic tests or *in situ* monitoring. Additional data collected during the Evaluation Phase would inform decisions about the merit of using waste rock for construction of the tailing impoundment. There would be very little sulfide in the tailings.

331-28 The SDEIS acknowledges that there is a strong possibility that waste rock from the Revett Formation could become acid generating with associated metal release. Designating the material for special handling is not good enough. Planning to return barren zone (non ore) containing galena underground seems very irresponsible. That would be putting high-risk material into conditions whereby ARD would develop. The risk for ARD at the proposed mine is

higher than previously considered. The extraction of ore would expose rock from the Revett Formation and allowing MMC to later design "underground facilities to minimize its disturbance" is wholly inadequate.

Response: This comment misrepresents the agencies' analysis in the SDEIS, which did not acknowledge a possibility for acid generation from the Revett Formation. The agencies identified a low risk of acid production, with potential for low to moderate metal release. The agencies acknowledged the need for additional characterization of the sulfide altered waste zones in the Revett formation, but recognized that no acid generation has resulted from mining and exposure of the Revett Formation at Troy.

331-28 The SDEIS mentions the possibility that ARD could possibly develop from the Pritchard Formation. The SDEIS needs to describe in detail what recourse would be taken if ARD were to develop. While the SDEIS dismisses the possibility of ARD from the Prichard Formation, there seems to be doubt as to the conclusiveness of the analysis that must be resolved.

331-28 Waste rock should not be used in any type of construction that includes roads, the tailings impoundment, starter dams, and pads for the mill construction. The waste rock can never be used because of the possibility it could release arsenic, copper, lead, and antimony into adjacent streams. The impacts to aquatic life, including bull trout and cutthroat, would be irreparable.

Response: All available kinetic and monitoring data show neutral pH for the Prichard Formation. These results contradict the interpretation based on static acid base accounting data, which do not take into account mineral encapsulation or reactivity and therefore known to be a conservative predictor of acid generation potential. The agencies (Appendix C.9) required further testing to confirm the conclusion that ARD is unlikely to develop from the Prichard Formation. The sampling would be obtained during the Evaluation Phase.

331-30 If the waste rock were to be backfilled and not used for construction, conditions in the mine void would become "saturated and anaerobic" during the 500-years required to fill the underground void. What would happen if the waste rock were backfilled and left exposed to the oxygen in the void as the cavity slowly filled?

Response: Oxidation of backfilled waste rock is expected to occur under these conditions. Testing to be conducted during the Evaluation Phase would address this possibility, and results would be used to adjust backfilling plans as needed. If oxidation would result in significant release of acidity and metals, alternative strategies involving water management, encapsulation, and amendment would be used to reduce the potential for adverse impacts to groundwater quality.

Responses to Ann Maest:
332-10 "Review statistics with baseline data to determine adequacy of sampling" It is not clear what this statement refers to. According to Enviromin (2007, p. 3), baseline data to be used in the analysis include mineralogy, whole rock geochemistry, acid base accounting tests, HCTs, in-situ monitoring of water quality, and metallurgical data. These data will come not only from Montanore but also from the adjacent deposit Rock Creek, as well as its geological analog at

Troy.

Response: Baseline data would be integrated with those collected during the Evaluation Phase sampling and analysis program, based on the recommendations offered in the SAP, and evaluated collectively to determine if sampling was adequate. This would be accomplished in various ways depending upon the population distribution. Possibilities include qualitative use of histograms (Runnells et al 1997) and quantitatively approaches, such as use of standard T-test/ANOVA based methods for parametric data or a Keyser-Meyer-Olkin test for non-parametric data.

332-10 "Develop sampling or compositing plan for low-S SPLP tests." Why are short-term leach tests (SPLP) only proposed for low-sulfur wastes? SPLP tests will often underestimate contaminant concentrations in underlying groundwater and underestimate long-term leachate concentrations (Townsend et al., 2006; Maest et al., 2005).

Response: There are no laboratory tests of metal mobility that can perfectly predict field concentrations. This is why the opportunity to compare laboratory results with *in situ* monitoring data from the Troy mine is valuable for the Montanore Project. In the U.S., the EPA method 1312 SPLP, Nevada Meteoric Water Mobility Test, and/or measurements of metal in effluent from kinetic tests are commonly used to predict metal mobility. Each of these methods produce concentrations in effluent which must be interpreted in context of the important differences in the surface area: water volume ratio between the laboratory and field scales. The cited examples in which SPLP tests underestimate contaminants fail to address the appropriate interpretation of these data, which accounts for surface area and dilution factors. Metal mobility is directly influenced by pH, which is in turn influenced by sulfide oxidation. Where significant concentrations of sulfide exist (e.g., greater than 0.3 weight percent) and the NP:AP ratio is less than 3, such oxidation is best studied using kinetic methods in humidity cells. For very low sulfide materials, the time and expense of humidity cell testing are not warranted, and more metal mobility data can be collected for a greater number of samples with a static method. This is why the EPA SPLP method is recommended for this work, coupled with field scale monitoring.

332-10 "Evaluate need for WTP." A detailed plan for a water treatment plan should be prepared before mining begins at the EIS stage.

Response: The cited text in Appendix C contained a typo and was revised. This was intended to convey that a list of constituents of concern, and their relative magnitude, would be used to guide WTP design. Preliminary design plans have been prepared for water treatment at Montanore, which address the need to remove nitrate and metals from water (see Section 2.5.4.3.23 of the FEIS). These preliminary plans rely on existing data to identify the probable suite of metals and estimated concentrations that would require management, and would be revised as additional data are collected during the Evaluation Phase

332-10 No kinetic testing is proposed for the Burke, Revett ore, or tailings. The wastes and ore cannot be assumed to have a low acid-generation potential and contaminant leaching potential based on the few geochemical tests performed to date. Long-term kinetic testing should be conducted on each geochemical test unit (see Maest et al., 2005) to evaluate the potential for

neutral leaching of contaminants. Only two kinetic tests are proposed for the barren lead zone: one unsaturated and one saturated. This zone could leach very high concentrations of lead and other metals over time. More samples are needed for long-term leach testing to obtain an estimate of the range of leachate concentrations, especially an estimate of maximum leachate concentrations of lead, to assist in developing waste management strategies. SPLP tests can be used to estimate short-term runoff leachate concentrations, but SPLP results should not be used for determining long-term placement of wastes; for this, long-term kinetic testing is needed. SPLP tests for tailings are not appropriate as the only measure of potential seepage concentrations. Multiple kinetic tests are needed for all elements of the Montanore deposit listed as column headings in Table C-6: Prichard, Burke, Revett Waste (non-lead), Revett Barren Lead, Revett Ore, and Tailings.

Response: The reported kinetic tests were run for a standard 20 week period of time, in compliance with ASTM protocols. pp additional kinetic testing, as well as *in situ* monitoring of water quality, are proposed to address these uncertainties in Appendix C.9.

Composite testing is most appropriate for homogeneous materials such as tailings, or when average characteristics of a well-defined unit are of interest. For all other waste types, especially waste rock, sub- units within the three waste rock sources (i.e. Revett waste, Revett barren zone, Prichard, Burke) should be identified based on mineralogy and weathering characteristics, and composite created within those geochemical testing units (Maest et al., 2005).

Response: Composites for kinetic testing would be created based on mineralogy and static chemistry, in consultation with the agencies, as described in Appendix C.9. The question of whether compositing is appropriate would be considered when data characterizing the relative homogeneity of mineralogy and weathering characteristics were available for evaluation. Available data suggest that compositing would be appropriate.

332-1The SDEIS and associated studies recognize that there are very few geochemical studies on Montanore ore, waste rock, and tailings (Enviromin, 2007, p. 2). Very limited site-specific information on the long-term environmental behavior of contaminants is available for the Montanore Project.

332-3Summary: The SDEIS and associated studies emphasize the similar geology, stratigraphy, and mineralogy of the Troy and Montanore deposits. These similarities could make the Troy an acceptable geologic and geochemical analogue for the Montanore deposit, but the SDEIS has failed to show that the Troy Mine is a good environmental analogue for the Montanore deposit. The paucity of geochemical testing results and the inadequate monitoring of mine water at the Troy Mine undermine its use as a true environmental analogue for any proposed mining project.

Response: Due to the location of the mineral deposit beneath the CMW, it is not possible to collect samples needed for additional testing through drilling. MMC proposes to collect needed samples during an Evaluation Phase. The majority of geochemical testing in support of the Montanore Project was conducted 20 years ago, when expectations of sampling density and analytical methods were different. Substantial additional data are available from Rock Creek and

Troy which address many of the limitations of the Montanore data set. Additional work would be needed as described in Appendix C.9 before construction and mining would begin.

331-29 There is too much uncertainty about whether the Revett Formation ore would be acid generating. Additional testing after the groundwater begins to rebound is irresponsible. Is the plan for the MMC, the USFS, and MDEQ to do further testing during the 490-1200 years in which the void fills and the regional groundwater recovers

Response: Section 3.9.4.3 of the SDEIS and FEIS discussed the acid generation risk of ore, waste rock and tailings. Most available data suggest that the Revett ore zone would not be acid generating. Critical elements of uncertainty about the Revett ore are related to delineation of altered waste zones in the lower Revett. An evaluation of the altered waste zones would be undertaken during the Evaluation Phase (See Appendix C.9), not during groundwater rebound. Testing of geochemistry, water quality, and water flow would continue throughout mine life and into closure.

331-28 The SDEIS mentions the possibility that ARD could possibly develop from the Pritchard Formation. The SDEIS needs to describe in detail what recourse would be taken if ARD were to develop. While the SDEIS dismisses the possibility of ARD from the Prichard Formation, there seems to be doubt as to the conclusiveness of the analysis that must be resolved.

331-28 Waste rock should not be used in any type of construction that includes roads, the tailings impoundment, starter dams, and pads for the mill construction. The waste rock can never be used because of the possibility it could release arsenic, copper, lead, and antimony into adjacent streams. The impacts to aquatic life, including bull trout and cutthroat, would be irreparable.

Response: All available kinetic and monitoring data show neutral pH for the Prichard Formation. These results contradict the interpretation based on static acid base accounting data, which do not take into account mineral encapsulation or reactivity and therefore known to be a conservative predictor of acid generation potential. The agencies (Appendix C.9) required further testing to confirm the conclusion that ARD is unlikely to develop from the Prichard Formation. The sampling would be obtained during the Evaluation Phase.

331-30 If the waste rock were to be backfilled and not used for construction, conditions in the mine void would become “saturated and anaerobic” during the 500-years required to fill the underground void. What would happen if the waste rock were backfilled and left exposed to the oxygen in the void as the cavity slowly filled?

Response: Oxidation of backfilled waste rock is expected to occur under these conditions. Testing to be conducted during the Evaluation Phase would address this possibility, and results would be used to adjust backfilling plans as needed. If oxidation would result in significant release of acidity and metals, alternative strategies involving water management, encapsulation, and amendment would be used to reduce the potential for adverse impacts to groundwater quality.

332-3 Enviromin (2007) states that acid will not be generation from most copper-iron sulfides in the Montanore deposit, with the exception of chalcopyrite (CuFe5S), yet they provide no supporting evidence for this statement. Enviromin (2007, p. 17) further suggests that the acid production values for the Montanore Project should be reduced to account for the presence of copper sulfide minerals that do not produce acid. Plumlee (1999) and the GARD guide (2011), which is cited in the DEIS, state that bornite (Cu5FeS4), one of the primary copper ore minerals at Montanore (DEIS, p. 200), will produce acid when oxidized by oxygen.

Response: Plumlee (1999) "infers" that bornite is acid generating, and the GARD guide cites this directly from Plumlee. This directly contradicts results published by Miller et al. (2003), who reported that bornite was not acid producing in comparisons of mono-sulfide net acid generation tests. Likewise, Brunesteyn and Hackl, in their Evaluation of Acid Production Potential of Mining Waste Materials (1982) reported "....sulfides such as bornite (Cu5FeS4) will be net acid consumers when oxidized, as shown by the following reaction:"
12Cu5FeS4 + 111O2 + 20H2SO4 = 60 CuSO4 + 4H3OFe3(SO4)2(OH)6 + 2H2O
More detail was provided by Bevilaqua and others, in their 2010 study, "Oxidative dissolution of bornite by *Acidithiobacillus ferrooxidans*," which concludes that "the [bornite] oxidation was a net acid-consuming reaction."

332-4 More geochemical testing is needed on the barren lead zone material during the EIS phase to increase the understanding of its environmental behavior and improve waste management approaches.

Response: The need for additional testing of the barren lead zone was identified in Appendix C.9 of the SDEIS and FEIS.

332-4The ABA results for Troy and Rock Creek in Enviromin (2007; Figure 3-4) were adjusted to lower acid production values, using an assumption that all sulfide was chalcocite. There is no support for this approach in the GARD Guide, an industry-sponsored website, or any other reputable source. The only adjustment made for sulfur analysis in ABA testing should be to use sulfide sulfur rather than total sulfur. However, this approach is only suggested if a good relationship can be established between the two forms of sulfur through testing. Use of total sulfur is the most conservative approach, but the amount of sulfur associated with sulfate and organic sulfur should be discounted if information on sulfur speciation is available (GARD Guide, 2011). The method used for estimating acid production potential (total sulfur vs. sulfide sulfur) for the Montanore deposit ABA results was not reported explicitly (although it appears that sulfide sulfur was used), but unless a good mathematical relationship can be established, total sulfur values should be used in ABA measurements and the interpretation of ABA testing results.

Response: Acid base accounting methods quantify and compare acid generating and acid neutralizing minerals on an equivalent stoichiometric basis. The GARD guide (International Network for Acid Prevention 2010) provides excellent general guidance for calculation of acid generation potential, but specifically recognizes that some sulfides are not acid generating. It explicitly emphasizes the importance of understanding the mineralogy in a rock for proper interpretation of acid generation potential. As explained in the GARD guide, acid generation

potential is calculated based on the assumption that all sulfide occurs as the acid generating mineral pyrite. In the case of the Revett ore, this is known to be incorrect, because the sulfide minerals are non-acid generating copper sulfides (see discussion Enviromin 2013b and Maxim 2003). Based on the known mineralogy of the ore zone, which is dominated by chalcocite, the portion of sulfide which is not potentially acid generating was calculated and removed from the total sulfide used to calculate a meaningful estimate of acid generation potential. This approach was developed by Montana DEQ for interpretation of a group of samples from Troy and Rock Creek that had accompanying copper analyses. This correction could not be made for Montanore due to the lack of corresponding copper data, but the principal is equally valid. This correction is not appropriate for the Prichard Formation, or for the sulfide altered waste zones in the lower Revett, which do contain pyrite, and has consequently not been applied to these zones.
The only adjustment made for sulfur analysis in ABA testing should be to use sulfide sulfur rather than total sulfur. However, this approach is only suggested if a good relationship can be established between the two forms of sulfur through testing. Use of total sulfur is the most conservative approach, but the amount of sulfur associated with sulfate and organic sulfur should be discounted if information on sulfur speciation is available (International Network for Acid Prevention 2010). The method used for estimating acid production potential (total sulfur vs. sulfide sulfur) for the Montanore deposit ABA results was not reported explicitly (although it appears that sulfide sulfur was used), but unless a good mathematical relationship can be established, total sulfur values should be used in ABA measurements and the interpretation of ABA testing results.

Sulfide sulfur was used, appropriately. The sulfur data and correlation coefficients for Montanore were not reported by previous investigators, but the strong correlation (R2>0.99) observed for the Rock Creek portion of the Rock Creek/Montanore deposit shown in the graph indicates that the sulfur is almost entirely sulfide. These results are consistent with the very limited occurrence of sulfate or organic sulfur in the samples (See FEIS Section 3.9.4.3 and Enviromin 2013b).

Objection Issues:

Inadequate Geochemical Analysis

There are few baseline data available to quantify the potential for acid generation of ore, waste rock, and tailings due to limited geochemical sampling.

Up to 120 million tons of ore would be removed by the Montanore Project (FEIS Pg 536), yet only 36 tests have been run on ore samples. The low number of ore samples is inadequate to accurately evaluate the potential of the Montanore deposit to generate acidic and metal-rich leachate.

> ***3.9.4.3.1Mine Area – Ore in Underground Workings, pg 512.***Thirty-six ABP (n= 36) tests have been provided for samples of ore from Montanore drill core. Another 34 Rock Creek and 28 Troy Mine ore samples were analyzed for acid base potential, as summarized in Table 88. The Montanore sub-deposit static test data suggest that the ore has uncertain potential to generate acid, with an average acid base potential (ABP) of -4 T CaCO3/kT and an NP:AP ratio of 0.9. The Rock Creek and Troy samples both have

NP/AP ratios of 3 and average ABP of 1 T CaCO3/kT and 5 T CaCO3/kT, respectively, despite having total sulfur contents less than 0.3 weight %. Average ore sample ABP values were significantly lower at Rock Creek (1 T CaCO3/kT) and Montanore (-4 T CaCO3/kT) than at Troy (5 t CaCO3/kT) due to differences in both the average AP and NP at each deposit. The ABP values for Rock Creek and Montanore were not statistically different.

3.13.4.5.2. pg 716 Geochemical Characterization Geochemical sampling was limited to ore and waste rock available from archived rock core that was drilled before the withdrawal of the CMW from mineral entry, and to waste rock obtained from exposures within the Libby Adit. Additional geochemical characterization is needed to expand and refine the available data and requires additional sample collection during the Evaluation and Construction Phases of the project. Early (pre-1992) efforts to characterize the geochemistry of the Rock Creek-Montanore and Troy deposits were limited in scope based on the consistent mineralogy observed in the deposits, and vary in the extent to which they meet current expectations of sampling intensity. Available datasets for each of the similar Revett-style deposits focus on geochemical characterization of particular materials. For example, considerably more waste rock data are available for the Prichard and Burke formations at Montanore than for Rock Creek or Troy, but a greater number of ore samples have been characterized at a more comprehensive level for Rock Creek. Many more water quality monitoring data have been collected over 30 years of operation under facility specific conditions (*e.g.,* underground workings or tailings impoundment) at Troy than at Rock Creek or Montanore.

Lack of Site Specific Data

Due to the paucity of geochemical testing on the Montanore ore body, the agency is relying on data from Troy and Rock Creek, and is using the Troy Mine as a good environmental analogue for the Montanore deposit. The lack of geochemical testing results and the inadequate monitoring of mine water at the Troy Mine undermine its use as a true environmental analogue for any proposed mining project.

Appendix M 288 Response to Comments: The majority of geochemical testing in support of the Montanore Project was conducted 20 years ago, when expectations of sampling density and analytical methods were different. Substantial additional data are available from Rock Creek and Troy which address many of the limitations of the Montanore data set. Additional work would be needed as described in Appendix C.9 before construction and mining would begin.

There is a large degree of uncertainty related to the potential for acid generation of ore, waste rock, and tailings.

Appendix M 289 Response to Comments: Section 3.9.4.3 of the SDEIS and FEIS discussed the acid generation risk of ore, waste rock and tailings. Most available data suggest that the Revett ore zone would not be acid generating. Critical elements of uncertainty about the Revett ore are related to delineation of altered waste zones in the

lower Revett. An evaluation of the altered waste zones would be undertaken during the Evaluation Phase (See Appendix C.9), not during groundwater rebound. Testing of geochemistry, water quality, and water flow would continue throughout mine life and into closure.

3.13.4.5.2. pg 716. The elements of uncertainty related to the extent of sampling, such as collection of waste rock from unexposed portions of the Revett, Prichard and Burke formations or analysis of bulk tailings samples for Montanore-specific ore zones, are addressed in the sampling and analysis plans described in Appendix C and by Geomatrix (2007a). The elements of uncertainty related to the use of monitoring data from the geochemical analog at the Troy Mine would also be addressed through Evaluation and Operations Phase monitoring as defined in Appendix C.

Appendix M 287 Response to Comments: Several elements of uncertainty (e.g., representative samples, complete suite of metals analyzed at relevant detection limits, etc.) were identified relative to the kinetic testing completed for the Montanore Project, which did not comprehensively address all questions about rates of reaction. These uncertainties could only be addressed in a meaningful way once samples were obtained during the Evaluation Phase."

Appendix M 291 Response to Comments: The need for additional testing of the barren lead zone was identified in Appendix C.9 of the SDEIS and FEIS.

Lack of Contingency Plans

The results of tests conducted on the limited amount of available ore samples suggest a moderate potential for acid generation, yet the Forest Service maintains that the risk of ARD is low and has no actual plan in place to deal with the development of acid rock drainage. A final rock management plan and water treatment and mine closure plans have not been developed. As previously mentioned in our comments, a detailed plan must be in place describing what measures will be taken if ARD develops.

EPA is concerned that there is a need for long-term water treatment and inadequate information is provided. EPA recommends that detailed information regarding long-term treatment of metals be provided, including likely water management and treatment methodologies, a detailed schematic diagram(s) showing the proposed water handling and treatment schemes through start-up, operations, closure, and post-closure, and a discussion of the effectiveness of the proposed treatment for metals removal that addresses challenges due to seasonal or additional flows. FEIS at M-41.

3.9.4.3.4 Geochemistry Summary, pg 536
The risk of acid generation for rock exposed in underground workings or tailings at Montanore would be low, with some potential for release of select metals under near-neutral pH and release of nitrate due to blasting. Low acid generation potential exists for some of the waste rock from the Prichard Formation, with moderate potential suggested by static tests for a portion of this rock. *In situ* monitoring of Prichard Formation, where

it is exposed underground in the Libby Adit, does not support acid drainage risk. Moderate potential for ARD exists within the altered waste zones of the Revett Formation (particularly of the barren lead zone), which MMC proposes to mitigate through selective handling and backfilling of underground workings. It is likely that the volume of rock to be produced from the Revett altered waste zones would be very small. Further sampling and analysis of weathering characteristics for Prichard and Revett waste rock would allow refinement of the waste rock management plan, and additional detail on trace metal release potential of tailings would guide water treatment design. Results of Evaluation and Operations Phase testing would be used for long-term predictions of water quality for closure design. Criteria to be used for evaluation of individual sample results include comparison of whole rock analyses with standard crustal abundance for elements of concern and comparison of metal mobility results with water quality standards.

Critical decisions related to handling of waste rock, water management, and water treatment are being deferred to a post-NEPA timeframe.

The decision about using waste rock for construction of the tailings impoundment will be made after the Evaluation Phase, without compliance with NEPA's public review requirements.

> **Appendix M 289 Response to Comments:** Section 3.9.4.3 of the SDEIS and FEIS discussed the acid generation risk of ore, waste rock and tailings. Apart from the barren lead zone, none of the waste rock that would be mined at Montanore has shown acid production in kinetic tests or *in situ* monitoring. Additional data collected during the Evaluation Phase would inform decisions about the merit of using waste rock for construction of the tailing impoundment. There would be very little sulfide in the tailings.

AA. THE USFS CANNOT APPROVE THE ENTIRE MINE PROJECT AT THIS TIME.

As noted herein and in previous comments, the FEIS and DROD defer analysis of critical issues, mitigation, and impacts until after the evaluation adit is completed. Although as shown herein the FEIS and DROD's legal and factual errors render them invalid and cannot be used to support any decision to approve any activity, at a minimum, the USFS could only legally consider approving the evaluation adit phase at this time (assuming for the sake of argument that the FEIS and DROD were valid, which is not the case).

In some cases, such as the submittal of the plan to consider rock-in-place-pillars as mitigation for the loss of surface and ground waters after actual operations have begun, is even worse. Such deferrals violate the public review requirements of NEPA as well as the requirements of the Organic Act/Part 228 and the NFMA. Simple references to potential future review after the completion of the adit is not a substitute for public review before the full mine plan is reviewed.

> NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment. Rather, it is designed to require such analysis as soon as it can

> reasonably be done. *See* Save Our Ecosystems v. Clark, 747 F.2d 1240, 1246 n. 9 (9th Cir.1984) ("Reasonable forecasting and speculation is ... implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry,'" quoting Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C.Cir.1973)).

Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1072 (9th Cir. 2002). As the Ninth Circuit has held:

> An assessment must be "prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and **will not be used to rationalize or justify decisions already made.**" 40 C.F.R. Sec. 1502.5 (1987). The CEQ regulations "require federal agencies to 'integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values....'" Andrus v. Sierra Club, 442 U.S. 347, 351, 99 S.Ct. 2335, 2338, 60 L.Ed.2d 943 (1979) (citations omitted); California v. Block, 690 F.2d 753, 761 (9th Cir.1982). "The rationale behind this rule is that inflexibility may occur if delay in preparing an EIS is allowed: '**After major investment of both time and money, it is likely that more environmental harm will be tolerated**.'" Confederated Tribes and Bands of the Yakima Indian Nation v. FERC, 746 F.2d 466, 471-72 (9th Cir.1984) (quoting Environmental Defense Fund v. Andrus, 596 F.2d 848, 853 (9th Cir.1979)), cert. denied, 471 U.S. 1116, 105 S.Ct. 2358, 86 L.Ed.2d 259 (1985).

Save the Yaak Committee v. Block, 840 F. 2d 714, 718 (9th. 1988)(emphasis added). As now-Justice Breyer noted:

> [T]he harm consists of the added risk to the environment that takes place when governmental decisionmakers make up their minds without having before them an analysis (with prior public comment) of the likely effects of their decision upon the environment. NEPA's object is to minimize that risk, the risk of uninformed choice, **a risk that arises in part from the practical fact that bureaucratic decisionmakers (when the law permits) are less likely to tear down a nearly completed project than a barely started project.**

Sierra Club v. Marsh, 872 F.2d 497, 500-01 (1st Cir. 1989)(emphasis added). It is critical that agencies comply with NEPA as early as possible in the planning process, because of "**the difficulty of stopping a bureaucratic steam roller, once started**." Id. at 504 (emphasis added). "Once large bureaucracies are committed to a course of action, it is difficult to change that course even if new, or more thorough, NEPA statements are prepared and the agency is told to redecide." Massachusetts v. Watt, 716 F.2d 946, 952-953 (1st Cir. 1983). "[NEPA's] purpose is to require consideration of environmental factors before project momentum is irresistible, before options are closed, and before agency commitments are set in concrete." W. Rodgers, *Environmental Law* § 7.7 at 767 (1977).

BB. THE FEIS DOES NOT PROVIDE AN ADEQUATE CUMULATIVE EFFECTS ANALYSIS.

As noted herein and in previous comments, the FEIS does not contain an adequate review of all direct, indirect, and cumulative impacts. To comply with NEPA, the USFS must consider all direct, indirect, and cumulative environmental impacts of the proposed action. 40 CFR § 1502.16; 40 CFR § 1508.8; 40 CFR § 1508.25(c). "Direct effects" are caused by the action and occur at the same time and place as the proposed project. 40 CFR § 1508.8(a). "Indirect effects" are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. 40 CFR § 1508.8(b). All types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id. "Cumulative effects" are defined as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 CFR § 1508.7. In a cumulative impact analysis, an agency must take a "hard look" at all actions.

> [A]nalysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. … Without such information, neither the courts nor the public ... can be assured that the [agency] provided the hard look that it is required to provide.

Te-Moak Tribe of Western Shoshone, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting NEPA review for mineral operation that had failed to include detailed analysis of impacts from nearby proposed mining operations).

A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. Kern v. U.S. Bureau of Land Management, 284 F.3d 1062, 1066 (9th Cir. 2002); Ocean Advocates v. U.S. Army Corps of Engineers, 361 F.3d 1108 1118 (9th Cir. 2004). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. Earth Island Institute v. U.S. Forest Service, 351 F.3d 1291, 1306-07 (9th Cir. 2003).

The NEPA obligation to consider cumulative impacts extends to all "past," "present," and "reasonably foreseeable" future projects. Blue Mountains, 161 F.3d at 1214-15; Kern v. BLM, 284 F.3d at 1076; Hall v. Norton, 266 F.3d 969, 978 (9th Cir. 2001) (finding cumulative analysis on land exchange for one development failed to consider impacts from other developments

potentially subject to land exchanges); Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006)(**requiring "mine-specific … cumulative data," a "*quantified assessment* of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region**)(emphasis added).

Thus, the USFS must consider the cumulative impacts from all past, present, and reasonably foreseeable future projects in the region on, at a minimum, water and air quality including ground and surface water quantity and quality, recreation, cultural/religious, wildlife, transportation/traffic, scenic and visual resources, etc. As held by the court decisions noted herein, this means that the impacts from other projects – not just the current Mine under review – must be fully reviewed.

Regarding cumulative impacts from other activities, the Ninth Circuit has rejected the argument that reliance on state-issued permits or analysis satisfied the agency's independent duty under NEPA.

> BLM argues that the off-site impacts need not be evaluated because the Goldstrike [mill] facility operates pursuant to a state permit under the Clean Air Act. This argument also is without merit. A non-NEPA document -- let alone one prepared and adopted by a state government -- cannot satisfy a federal agency's obligations under NEPA. Klamath-Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 998 (9th Cir.2004).

South Fork Band Council, 588 F.3d at 726.

Here, the FEIS fails to provide the NEPA-required level of analysis for other past, present, or reasonably foreseeable future activities in the region. The FEIS's analysis of impacts from other activities in the area, as well as other activities such as grazing, energy exploration and development, logging, off-road recreation, etc., is minimal at best and fails to provide the "sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment." Te-Moak Tribe of Western Shoshone, 608 F.3d 592, 603 (9th Cir. 2010). The FEIS fails to provide the project specific "cumulative data," a "quantified assessment of their [other projects'] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed activities in the region. Great Basin Mine Watch v. Hankins, 456 F.3d at 971-974.

For example, regarding water quality, the FEIS admits that suction dredge mining, timber/logging, and other mining projects are either currently permitted or reasonably foreseeable. FEIS at 728-29. Yet no specific quantification of these impacts is provided. For suction dredge mining, and its resultant sediment and other pollutant loading, "the effects downstream are **probably** minor." FEIS at 728 (emphasis added). No supporting analysis is provided.

FEIS Section 3.3 lists the acreages and contains a brief description of other "reasonably foreseeable future actions or conditions," yet for each of these resources/impacts, none of the required "cumulative data," "quantified assessment of their [other projects'] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed activities in the region is provided. Great Basin Mine Watch v. Hankins, 456 F.3d at 971-974. As the Ninth Circuit has further held:

> Our cases firmly establish that a cumulative effects analysis "must be more than perfunctory; it must provide a *useful analysis* of the cumulative impacts of past, present, and future projects." Klamath–Siskiyou, 387 F.3d at 994 (emphasis added) (quoting Ocean Advocates v. U.S. Army Corps of Eng'rs, 361 F.3d 1108, 1128 (9th Cir.2004)). To this end, we have recently noted two critical features of a cumulative effects analysis. First, it must not only describe related projects but also enumerate the environmental effects of those projects. *See* Lands Council v. Powell, 395 F.3d 1019, 1028 (9th Cir.2005) (holding a cumulative effects analysis violated NEPA because it failed to provide "adequate data of the time, place, and scale" and did not explain in detail "how different project plans and harvest methods affected the environment"). Second, it must consider the interaction of multiple activities and cannot focus exclusively on the environmental impacts of an individual project. *See* Klamath–Siskiyou, 387 F.3d at 996 (finding a cumulative effects analysis inadequate when "it only considers the effects of the very project at issue" and does not "take into account the combined effects that can be expected as a result of undertaking" multiple projects).

Oregon Natural Resources Council Fund v. Brong, 492 F.3d 1120, 1133 (9th Cir. 2007). None of the "cumulative effects/impacts" sections of the FEIS for the various resources and impacts contain this required quantification and other detailed reviews required by NEPA.

CC. FAILURE TO COMPLY WITH FLPMA RIGHT-OF-WAY (ROW) PROVISIONS IN APPROVAL OF TRANSMISSION LINES AND OTHER FACILITIES

The FEIS and DROD correctly view the Transmission Line as being governed by FLPMA's ROW provisions. Although the FEIS and DROD do not adequately analyze the various aspects of the Transmission Line, at least as a general matter the USFS agrees that the proper regulatory mechanism for the Transmission Line is a ROW, not a mining plan of operations under the Mining Law and Part 228 regulations. DROD Table 3 correctly notes that the Project's "electric transmission/distribution and telephone lines" and MMC's "construct[ion] and maintain[ance] [of] associated facilities" must obtain "Special Use Permit(s)(36 CFR 251)[SUPs]." DROD at 69.

However, as noted in the previous comments and herein, the FEIS and DROD fail to comply with the strict FLPMA and related requirements in issuing ROWs/SUPs.

Under FLPMA Title V, Section 504, the USFS may grant a SUP/ROW if it "(4) will do no unnecessary damage to the environment." 43 U.S.C. § 1764(a). Rights of way "shall be granted, issued or renewed … consistent with … any other applicable laws." Id. § 1764(c). A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way. Id. § 1764(d).

A Title V SUP/ROW "shall contain terms and conditions which will … (ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. § 1765(a). In addition, the SUP/ROW can only be issued if activities resulting from the SUP/ROW:

> (i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto.

FLPMA, § 1765(b) (Section 505(b)).

At least three important substantive requirements flow from the FLPMA's SUP/ROW provisions. First, the USFS has a mandatory duty under Section 505(a) to impose conditions that "**will** minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise **protect the environment**." Id. §1765(a) (emphasis added).

The terms of this section do not limit "damage" specifically to the land within the ROW corridor. Rather, the repeated use of the expansive term "the environment" indicates that the overall effects of the SUP/ROW on cultural, environmental, scenic and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and economic interests" in Section 505(b) supports an expansive reading that the USFS must impose conditions that protect not only the land crossed by the right-of-way, but **all** federal land directly or indirectly affected by the approval of the SUP/ROW.

Second, the discretionary requirements in Section 505(b) require a USFS determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise **protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto**." (emphasis added). This means that the agency can only approve the SUP/ROW if it "protects the public interest in lands" not only upon which the pipeline/roads/transmission lines would traverse, but also lands and resources adjacent to and associated with the SUP/ROW. Thus, in this case, the USFS can only approve the SUP/ROWs if the Mine itself "protects the public interest." As shown herein, that clearly is not the case.

Third, the requirement that the right-of-way grant "do no unnecessary damage to the environment" and be "consistent with … any other applicable laws," *id*. §§ 1764(a)-(c), means that a grant of a SUP/ROW leading to the Mine must satisfy all applicable laws, regulations and policies. Here, because the Mine would violate many of these requirements, the agency cannot issue the SUP/ROW. It should be noted that, even if the USFS can legally assert that it must approve the Mine's PoO due to MMC's mining claims covering the proposed open pit, waste and processing dump, etc. (which as shown herein is not legally correct), this subservience to the Mining Law is inapplicable to the SUP/ROWs.

Here, the DROD expressly links the Transmission Line with the Montanore Mine. In rejecting Transmission Line Alternative A, the USFS described that alternative as "No Transmission Line, No Mine" alternative. DROD at 45. That alternative was rejected "because it does not meet the purpose and need to respond to a Plan of Operation [PoO] to develop the Montanore copper and silver deposit." DROD at 45.

Thus, under FLPMA, approval of the Transmission Line must ensure that all aspects of the Mine itself "protect the environment" and "protect the public interest." FLPMA, 43 U.S.C. §1765 (§505). As noted herein, this is a very different standard from the one applied by the USFS to MMC's alleged "rights" under the Mining Law – where the agency believes it does not have the authority to deny the Mine PoO.

The federal courts have recently and repeatedly held that the Forest Service not only has the authority to consider the adverse impacts on lands and waters outside the immediate ROW corridor, it has an obligation to protect these resources under FLPMA. In County of Okanogan v. National Marine Fisheries Service, 347 F.3d 1081 (9th Cir. 2003), the court affirmed the Forest Service's imposition of mandatory minimum stream flows as a condition of granting a ROW for a water pipeline across USFS land. This was true even when the condition/requirement restricted or denied vested property rights (in that case, water rights). Id. at 1085-86.

The Forest Service cannot issue a SUP/ROW that fails to "protect the environment" as required by FLPMA, including the environmental resource values outside the immediate ROW corridor. "FLPMA itself does not authorize the Supervisor's consideration of the interests of private facility owners as weighed against environmental interests such as protection of fish and wildlife habitat. FLPMA *requires* all land-use authorizations to contain terms and conditions which will protect resources and the environment." Colorado Trout Unlimited v. U.S. Dept. of Agriculture, 320 F.Supp.2d 1090, 1108 (D. Colo. 2004)(emphasis in original) *appeal dismissed as moot*, 441 F.3d 1214 (10th Cir. 2006).

Thus, in this case, FLPMA requires that the Forest Service deny the proposed SUPs/ROWs because, as a result of the granting of the permits, the Mine will be allowed to proceed – with devastating damage to the environment to which neither the agency nor MMC have prevented or mitigated against (as shown herein).

The Forest Service regulations implementing FLPMA Title V further require the agency to deny the any SUP/ROWs in this case. In 1998, the Forest Service revised its special use authorization rules and set up a two-stage screening process to review land use authorization applications. 36 C.F.R. § 251.54(a). "The purpose of the screening is to eliminate those proposed uses which are

obviously unsuitable on National Forest System (NFS) lands." 63 Fed. Reg. 65,954 (Nov. 30, 1998). In the first step of the screening process, the Forest Service ensures that a proposed use meets certain minimum criteria. For those that pass this hurdle, the agency then conducts a full-scale review. 36 C.F.R. § 251.54(e)(5).

The first hurdle, what the agency loosely refers to as the "suitability" test, is a critical one for proposed mining-related uses. Under the suitability test, the agency cannot authorize any use that represents a permanent or exclusive use of federal lands. In the preamble to the revised regulations, the Forest Service stated: "Longstanding Congressional and Executive Branch policy dictates that authorizations to use NFS lands cannot grant a permit holder an exclusive or perpetual right of occupancy in lands owned by the public." 63 Fed. Reg. 65,955 (Nov. 30, 1998); 36 C.F.R. § 251.54(e)(1)(iv).

These rules further require that a proposed use will fail the first hurdle if it "involve[s] disposal of solid waste or disposal of radioactive or other hazardous substances." 36 C.F.R. § 251.54(e)(1)(ix). For the Montanore mine, this prohibition is particularly applicable, as it is undisputed that "solid waste" and/or "hazardous substances" will be created and deposited (e.g., tailings) -- both long and short term - on public lands, and transported over public lands.

Similar to FLPMA's provisions noted above, for even those operations that pass the "suitability test," the regulations prohibit the agency from approving any SUP/ROW that is not "in the public interest." **"An authorized officer shall reject any proposal … if … (ii) the proposed use would not be in the public interest."** 36 C.F.R. § 251.54(e)(5)(ii).

The Interior Department, interpreting FLPMA V and its similar right-of-way regulations, has held that: "A right-of-way application may be denied, however, if the authorized officer determines that the grant of the proposed right-of-way would be inconsistent with the purpose for which the public lands are managed or if the grant of the proposed right-of-way would not be in the public interest or would be inconsistent with applicable laws." Clifford Bryden, 139 IBLA 387, 389-90 (1997) 1997 WL 558400 at *3 (affirming denial of right-of-way for water pipeline, where diversion from spring would be inconsistent with BLM wetland protection standards).

Similar to the County of Okanogan and Colorado Trout Unlimited federal court decisions noted above, the Interior Department has held that the fact that a ROW applicant has a property right that may be adversely affected by the denial of the ROW does not override the agency's duties to protect the "public interest." In Kenneth Knight, 129 IBLA 182, 185 (1994), the BLM's denial of the ROW was affirmed due not only to the direct impact of the water pipeline, but on the adverse effects of the removal of the water in the first place:

> [T]he granting of the right-of-way and concomitant reduction of that resource, would, in all likelihood, adversely affect public land values, including grazing, wildlife, and riparian vegetation and wildlife habitat. The record is clear that, while construction of the improvements associated with the proposed right-of-way would have minimal immediate physical impact on the public lands, the effect of removal of water from those lands would be environmental degradation. Prevention of that degradation, by itself, justified BLM's rejection of the application.

1994 WL 481924 at *3. That was also the case in Clifford Bryden, as the adverse impacts from the removal of the water was considered just as important as the adverse impacts from the pipeline that would deliver the water. 139 IBLA at 388-89. *See also* C.B. Slabaugh, 116 IBLA 63 (1990) 1990 WL 308006 (affirming denial of right-of-way for water pipeline, where BLM sought to prevent applicant from establishing a water right in a wilderness study area).

In King's Meadow Ranches, 126 IBLA 339 (1993), 1993 WL 417949, the IBLA affirmed the denial of right-of-way for water pipeline, where the pipeline would degrade riparian vegetation and reduce bald eagle habitat. The Department specifically noted that under FLPMA Title V: "[A]s BLM has held, **it is not private interests but the public interest that must be served by the issuance of a right-of-way**." 126 IBLA at 342, 1993 WL 417949 at *3 (emphasis added).

Here, it is undisputed that the grant of the SUP/ROW for the Transmission Line is needed for the Montanore Project to proceed, DROD at 45, and that the Project will result in significant and irreparable harm to (indeed the elimination of) nationally-recognized public land environmental, wildlife, cultural, and recreational values, uses, and resources. As such, the USFS cannot issue any SUP/ROWs that would potentially result in unacceptable impacts. It must be stressed that, as noted above under FLPMA, the "public interest" test applies not only to the lands traversed by the SUP/ROW, but also nearby federal lands that may be affected if the proposed SUP/ROW is granted.

DD. FAILURE TO REQUIRE FLPMA RIGHT-OF-WAYS AND/OR SPECIAL USE PERMITS FOR ROADS, PIPELINE(S), AND OTHER CONVEYANCES

The FEIS analyzed, and the DROD proposes to approve, all of the roads and pipeline(s), pursuant to alleged "rights" fully governed and authorized by the 1872 Mining Law and the 36 CFR Part 228 regulations. This is despite the fact that there is no evidence that any of these ancillary facilities are proposed on valid mining claims and thus are governed by the Mining Law. As noted in our previous comments and herein, this violates federal public land and mining law and thus invalidates the FEIS and DROD. The FEIS and DROD fail to apply the proper regulatory structure for the water/tailings pipeline(s), and other conveyance routes, facilities, and activities. As shown herein, such facilities/activities are not governed by the Mining Law, but by the Right-of-Way (ROW) requirements of FLPMA and its implementing regulations.

As noted above, the FEIS and DROD at least correctly view the Transmission Line as being governed by FLPMA's ROW provisions. Although the FEIS and DROD do not adequately analyze the various aspects of the Transmission Line and improperly approve it as noted above, at least as a general matter the USFS agrees that the proper regulatory mechanism for the Transmission Line is a ROW, not a mining plan of operations under the Mining Law and Part 228 regulations. DROD Table 3 correctly notes that the Project's "electric transmission/distribution and telephone lines" and MMC's "construct[ion] and maintain[ance] [of] associated facilities" must obtain "Special Use Permit(s)(36 CFR 251). DROD at 69.

It appears that the USFS distinguishes the Transmission Line, which requires a ROW and Special Use Permit, from other aspects of the Project, which the agency believes are all

governed by "rights" under the Mining Law, on the simple fact that they "may remain on National Forest System lands after completion of the mining operation." Table 3, DROD at 69. Yet this ignores the obvious fact that much of the other aspects of the Montanore Project will similarly "remain on National Forest System lands." Indeed, the road(s) and tailings facility and related infrastructure will be a permanent fixture on USFS lands. Similarly, the fact that the roads and pipelines will be operated by MMC, whereas the Transmission and phone lines will be operated by another company, does not mean that they are excluded from regulation under FLPMA.

The legal error, then, is the failure of the FEIS/DROD to subject the roads and pipelines to the same permitting regime as the Transmission Line and other uses of USFS lands. Contrary to the FEIS/DROD, water pipelines, transmission lines, roads, and other conveyances cannot be authorized by the 36 CFR Part 228 plan of operations approval process. Instead, the Forest Service must require the company to submit right-of-way or other special use permit authorizations and require that all mandates of FLPMA Title V and its implementing regulations are adhered to (e.g., no permit can be issued unless it can be shown that the issuance of the permits is in the best interests of the public, payment of fair market value, etc.). *See* 36 CFR Part 251 (USFS special use permit regulations).

This is required because the approval of transmission lines, pipelines, etc., is not a right covered by the 1872 Mining Law (i.e., water and waste transportation is not part of the implied right of access to mining claims) – even if the company could show that its claims were valid, which it has not done. Further, even if the USFS could ignore its duties under its multiple use and other mandates and assume that the company had a right under the Mining Law (which as noted herein is wrong), such rights do not attach to the right-of-ways and other FLPMA approvals needed for the pipelines, transmission lines, etc. Because the USFS failed to review these proposed facilities under the correct permitting regime, its review and approval of the Project cannot stand.

The Interior Department has ruled that pipelines and roads, including those across public land related to a mining operation, are not covered by statutory rights under the Mining Law. "[A] right-of-way must be obtained prior to transportation of water across Federal lands for mining." Far West Exploration, Inc., 100 IBLA 306, 308 n. 4 (1988) *citing* Desert Survivors, 96 IBLA 193 (1987). *See also* Alanco Environmental Resources Corp., 145 IBLA 289, 297 (1998) ("construction of a road, was subject not only to authorization under 43 C.F.R. Subpart 3809, but also to issuance of a right-of-way under 43 C.F.R. Part 2800."); Wayne D. Klump, 130 IBLA 98, 100 (1995) ("Regardless of his right of access across the public lands to his mining claims and of his prior water rights, use of the public lands must be in compliance with the requirements of the relevant statutes and regulations [FLPMA Title V and ROW regulations]."). Although these cases dealt with BLM lands, they apply equally to Forest Service lands. As noted in Alanco, ROWs for access roads are subject to FLPMA's Title V requirements.

The Interior Board of Land Appeals has expressly rejected the argument that rights under the mining laws apply to pipelines and roads associated with water delivery:

> Clearly, FLPMA repealed or amended previous acts and Title V now requires that BLM approve a right-of-way application prior to the transportation of water across public land for mining purposes. See 43 U.S.C. § 1761 (1982). As was the case prior to passage of Title V of FLPMA, however, approval of such an application remains a discretionary matter and the Secretary has broad discretion regarding the amount of information he may require from an applicant for a right-of-way grant prior to accepting the application for consideration. Bumble Bee Seafoods, Inc., 65 IBLA 391 (1982). A decision approving a right-of-way application must be made upon a reasoned analysis of the factors involved in the right-of-way, with due regard for the public interest. *See* East Canyon Irrigation Co., 47 IBLA 155 (1980).
>
> **BLM apparently contends that a mining claimant does not need a right-of-way to convey water from land outside the claim for use on the claim. It asserts that such use is encompassed in the implied rights of access which a mining claimant possesses under the mining laws. *Such an assertion cannot be credited.***
>
> The implied right of access to mining claims never embraced the right to convey water from outside the claim for use on the claim. This latter right emanated from an express statutory grant in the 1866 mining act. *See* 30 U.S.C. § 51 (1970) and 43 U.S.C. § 661 (1970). In enacting FLPMA, Congress repealed the 1866 grant of a right-of-way for the construction of ditches and canals (see § 706(a) of FLPMA, 90 Stat. 2793) and provided, in section 501(a)(1), 43 U.S.C. § 1761(a)(1), for the grant of a right-of- way for the conveyance of water under new procedures. In effect, Congress substituted one statutory procedure for another. **There is simply no authority for the assertion that mining claimants need not obtain a right-of-way under Title V for conveyance of water from lands outside the claim onto the claim.**

Desert Survivors, 96 IBLA 193, 196 (1987)(emphasis added). *See also* Far West Exploration, 100 IBLA 306, 309, n. 4 (1988)("a right-of-way must be obtained prior to transportation of water across Federal lands for mining."). The same analysis applies to water and power either delivered to, or conveyed from, the mining site. The leading treatise on federal natural resources law confirms this rule: "Rights-of-way must be explicitly applied for and granted; **approvals of mining plans or other operational plans do not implicitly confer a right-of-way**." Coggins and Glicksman, PUBLIC NATURAL RESOURCES LAW, §15.21 (emphasis added).[12]

The fact that the USFS mining regulations consider roads and pipelines associated with the project part of the mineral "operations," 36 CFR §228.3, does not override these holdings or somehow create statutory rights where none exist. The court in Mineral Policy Center v. Norton,

[12] The fact that the ore body to be developed by MMC is privately-owned further supports the need to review/regulate access to the ore body and proposed facilities via a FLPMA Title V ROW or SUP.

292 F.Supp.2d, 30 (D.D.C. 2003) specifically **rejected** the federal government's argument that all mining-related operations were exempt from FLPMA's ROW requirements. 292 F.Supp.2d at 49-51 ("[I]f there is no valid claim and the claimant is doing more than engaging in initial exploration activities on lands open to location, the claimants' activity is not explicitly protected by the Mining Law."). Id. at 50.

Overall, the FEIS and agency review of these facilities fail to apply the proper discretionary and public interest review applicable to Title V and its USFS implementing regulations. This failure further undermines the agencies' NEPA alternatives and mitigation analysis, as well as the fundamental errors in assuming that MMC has a statutory right to receive approval of these delivery, conveyance, transmission, and access routes/facilities.

Operations not conducted on "valid and perfected claims" must comply with all of FLPMA's requirements, including Title V's SUP/ROW requirements. Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 49-51 ("[I]f there is no valid claim and the claimant is doing more than engaging in initial exploration activities on lands open to location, the claimants' activity is not explicitly protected by the Mining Law."). Id. at 50.

The Forest Service's national policy specifically recognizes that only roads for mining projects that occur on valid mining claims can avoid the FLPMA ROW requirements. Forest Service Manual 2730 governs such roads. It states the following regarding FLMPA rights of way:

> Grant all road rights-of-way under Title V of the Federal Land Policy and Management Act *with the exception of: … 5.* ***Roads constructed on valid mining claims*** or mineral lease areas when the construction is authorized by an approved operating plan (36 CFR part 228 and FSM 2810).

FSM 2733.03 (emphasis added). As noted above, the FLPMA ROW and SUP permitting requirements are very different from the USFS's review of a mining PoO. None of the FLPMA requirements regarding the roads and pipelines were met here.

Regarding the roads, the USFS Manual mandates that a FLPMA Title V authorization is required for roads "*except*" for "**Roads constructed on valid mining claims.**" Thus, even if the agency's legal position that authorization of roads and pipelines is considered a right under the Mining Law and approved via the Part 228 regulations was correct – which as shown herein it is not – the agency's policy requires that this is true only for such facilities/uses "on valid mining claims."

As shown in the FEIS and herein, there is no evidence whatsoever that the lands to be crossed by the roads (let alone the pipelines and transmission lines) are covered by "valid mining claims." Under the Mining Law, in order to be valid, mining claims must contain the "discovery of a valuable mineral deposit." 30 U.S.C. § 22. Under the "marketability" test, it must be shown that the mineral can be "extracted, removed and marketed at a profit." United States v. Coleman, 390 U.S. 599, 600 (1968). According to the "prudent-person" test, "the discovered deposits must be of such a character that a person of ordinary prudence would be justified in the further expenditure of his labors and means, with a reasonable prospect of

success, in developing a valuable mine." Id. at 602. The Supreme Court has held that profitability is "an important consideration in applying the prudent-man test and the marketability test," and noted that " . . . the prudent-man test and the marketability test are not distinct standards, but are complementary in that the latter is a refinement of the former." Id. at 602-603.

"In order to successfully defend rights to occupy and use a claim for prospecting and mining, a claimant must meet the requirements as specified or implied by the mining laws, in addition to the rules and regulations of the USFS. These require a claimant to: … 2. Discover a valuable mineral deposit. … (and) 7. Be prepared to show evidence of mineral discovery." FSM 2813.2. "A claim unsupported by a discovery of a valuable mineral deposit is invalid from the time of location, and the only rights the claimant has are those belonging to anyone to enter and prospect on National Forest lands." FSM §2811.5.

In addition to the lack of any evidence that the claims to be crossed by the roads are valid under the Mining Law, the evidence in the record shows the opposite. For example, it is undisputed that the only valuable mineral deposit associated with the Montanore Project is MMC's private ore body under the Wilderness. Thus, because the roads and pipelines are clearly on lands that do not contain the requisite valuable mineral deposit, it is likely that these lands contain common varieties of rock that are not even considered locateable minerals under federal mining law.

Accordingly, the agency's decision to approve these facilities solely through the Part 228 PoO process, violates federal law and is arbitrary and capricious as noted herein. As such, the USFS cannot issue the DROD as proposed, and must instead review and regulate the proposed activities under the legally-correct permitting regime.

EE. THE FEIS AND DRAFT ROD ARE BASED ON INCORRECT AND UNSUPPORTABLE ASSUMPTIONS AND POSITIONS REGARDING MMC'S ALLEGED "RIGHT" TO HAVE THE PROJECT APPROVED UNDER THE MINING LAW

The FEIS and DROD are based on the USFS's belief that: "The KNF has no authority to unreasonably circumscribe or prohibit reasonably necessary activities under the General Mining Law that are otherwise lawful." DROD at 40. According to the agency, such a severe limitation on the agency's authority is due solely to MMC's "unpatented mining, mill site claims, and tunnel claims on the National Forest System lands that cover the proposed mine development." FEIS at M-473 (responding to Objectors' comments).[13] Thus, according to the agency, MMC has a statutory right to conduct its dewatering, waste/tailings dumping, processing, and other operations based solely on the fact that the company has blanketed the Project's lands with claims.

[13] No details are provided as to the specific location of which types of claims are located on which lands, so it is impossible for the public to verify the nature of the claims. Such a critical failure to inform the public about what the agency believes governs its entire review and approval of the Project violates NEPA and other laws noted herein.

As noted in our previous comments and herein, this fundamentally misinterprets federal law and results in an arbitrary and capricious decision. Here, MMC has filed mining law claims on all of the federal lands in the project area, including those where no mining is proposed (i.e., dumping, processing, and other ancillary uses). The ore body, as noted herein, is privately-owned.

According to the USFS, the filing of these claims precludes the agencies from choosing the no-action alternative, as well as significantly restricting its approval and review authority over the project – even when the ore body is private. The USFS's position is wrong. Such rights, or "entitlement" as stated by the USFS, can only accrue to the company if these claims are valid under the 1872 Mining Law. Here, there is no evidence in the record that these claims are valid. Indeed, the agencies have not even inquired into whether these claims are valid and stated their intention not to conduct such an inquiry.

Further, the agency is wrong to attach "rights' under the 1872 Mining Law to private property (i.e., the ore body). Contrary to the agency's position, MMC has no right to develop the private ore body under the 1872 Mining Law. In this case, only lands containing "valuable mineral deposits in lands belonging to the United States," are subject to the 1872 Mining Law. 30 U.S.C. § 22.

A mineral patent "is the instrument of conveyance by which it passes its title to portions of the public domain and is the origin of private ownership of the land." American Law of Mining, § 30.06 (2006). Through the patenting mechanism, the once public minerals becomes private, and the relationship between the patent-holder and the Forest Service is changed by this legal transformation. The Ninth Circuit has repeatedly emphasized the difference between private fee land obtained via the patent versus unpatented claims on federal land. *See* Clouser v. Espy, 42 F.3d 1522, 1525, n. 2 (9th Cir. 1994); Northern Alaska Envtl. Ctr. v. Lujan, 872 F.2d 901, 904 n. 2 (9th Cir. 1989).

Contrary to the FEIS and DROD, the company does not have a statutory right to dump waste and other environmentally-damaging actions on public land to support the extraction of minerals taken from MMC's private property. For example, the Interior Board of Land Appeals (the administrative appellate body within the Interior Department that has jurisdiction over federal mining claim issues) ("IBLA") upheld the decision of the Forest Service to require special use permits under 36 CFR Part 251 for access to patented mineral holdings surrounded by Forest Service land. Virgil Horn, 117 IBLA 10 (1990). The IBLA rejected the landowner's assertions that he was eligible for access via an implied right under the 1872 Mining Law, noting that "**[t]he land is private land, no longer subject to the mining laws**." Id. at ¶ 1 (emphasis added). Consequently, because the land had become private upon patenting, the benefits once potentially available under the Mining Law ceased to operate. Id. In short, because of the patenting, "[n]o easement rights attach against the United States Government for land uses outside the boundaries of [the] patented land." Id.

In Horn, the USFS argued that, even after the agency had approved a plan of operations (under the 228 regulations) for activities on the unpatented claim, the later issuance of a patent meant that the plan approval was no longer effective and that the operator had to obtain a special use permit to access his now private lands. In adopting the USFS's position, the Interior Department

held that "Appellants seek the benefits of the general mining laws; however, they no longer possess a mining claim located on federal land." 117 IBLA at 3.

> [T]he Forest Service District Ranger, Big Bear Ranger District, informed Virgil Horn that as of the date of patent he became owner of private land surrounded by National Forest land; that **a mining plan of operations which had authorized certain uses was no longer effective since the land was now private land; and that all uses outside the patented land were subject to Forest Service regulations governing special uses (36 CFR Part 251**, Subpart B) …. The District Ranger provided Horn with two application forms for Special Use Authorization, one for access to the land and the other for water transmission and diversion.

117 IBLA at 2 (emphasis added). Horn has been cited by leading commentators as authority for the basic rule that the Mining Law, and the 228 regulations, do not apply to private land. *See* Jensen, "How Do I Get There? Access To and Across Mining Claims and Mineral Leases," 45 Proceedings of the Rocky Mountain Mineral Law Institute, 45 RMMLF-INST 20 (1999).

The IBLA had previously held the same thing in Bob Strickler, 106 IBLA 1 (1988), 1988 WL 238566, at * 4 ("Contrary to appellants' position, the fact that they derive title to the land which they now occupy from a patent issued under the mining laws in 1925, does not invest them with a 'legal right-of-way' to their property across federal lands."). The leading natural resources and public land law treatise, by Professors Coggins and Glicksman, specifically note the holding in Strickler: "In 1988, the IBLA ruled that a mineral patentee has no right of access across federal lands to the patented lands but must apply for a right-of-way under FLPMA." PUBLIC NATURAL RESOURCES LAW, PUBNRL, at §10E:6.

This was also the USFS' position in a recent federal court case. In Oregon, the USFS specifically required a FLPMA special use permit to access mining lands patented under the 1872 Mining Law – with no mention of any rights under the Mining Law or the applicability of the 228 regulations. Alleman v. U.S., 372 F.Supp.2d 1212, 1220 (D. Or. 2005). (because the land was patented, "[t]he Forest Service informed Mr. Alleman that he would need a Special Use Permit (SUP) to continue having vehicular access" to the property). The court affirmed the agency's position that access to patented lands is via the SUP process. Id. at 1228.

Only "valuable mineral deposits in lands belonging to the United States," are subject to the 1872 Mining Law. 30 U.S.C. § 22. Private lands are thus not governed by the Mining Law. Because MMC's patented minerals are privately-owned, the Forest Service inappropriately relied upon its 36 CFR Part 228 authority as the mechanism for granting access to the private lands, as well as its determination that the agency's authority over the mining was constrained by the 1872 Mining Law (see also discussion elsewhere herein). Any right of access to patented minerals, and any review of operations proposed in support of private mineral properties, however, must be obtained through an alternative legal mechanism and not through the 1872 Mining Law – in this case, FLPMA Title V and the 36 CFR Part 251 regulations for access and the Organic Act, NFMA, and general multiple-use authorities for the private minerals/lands. This applies to the mining facilities as well as the roads and pipelines

discussed above. As detailed herein, these regulatory mechanisms require strict environmental protection requirements not found in the Part 228 mining regulations.

In addition to misapplying federal law to MMC's private property, the USFS violated the Federal Land Policy and Management Act (FLPMA) and the 1872 Mining Law, and made an arbitrary and capricious decision without evidentiary support, by not requiring MMC to pay Fair Market Value (FMV) for the use of public lands not covered by valid mining claims, based on the lack of any evidence that the vast majority of the mining claims (or indeed any claims at all) at the Project site contain locatable minerals and the requisite discovery of a valuable mineral deposit or have met all legal requirements for valid millsite claims (which also has not been shown). Similarly, the agency's position also violates provisions of FLPMA and the Multiple Use Sustained Yield Act, NFMA, 1897 Organic Act, and other laws mandating that the agencies manage, or at least consider managing, these lands for non-mineral uses – something which the USFS refused to do or consider in this case.

The FEIS's review and the agencies' proposed approval of the Project in the DROD are based on the overriding assumption that MMC has statutory rights to use all of the public lands at the site under the 1872 Mining Law. However, where Project lands have not been verified to contain, or do not contain, such rights, the USFS's more discretionary multiple-use authorities apply. *See* Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 46-51 (D.D.C. 2003) (although that case dealt with Interior Department lands, the same analysis applies to USFS lands.) A proper application of USFS's multiple use, public interest, and sustained yield mandates to those areas not covered by valid claims would result in a very different Project review, alternatives, and level of protection for public land resources and values, as well as reducing or eliminating the adverse impacts to the use of these lands by members of the public and Objectors.

The Mineral Policy Center court specifically recognized the federal government's duty to apply its broader, multiple use authority when mineral development operations are proposed on lands not subject to valid and perfected claims:

> While a claimant can explore for valuable mineral deposits before perfecting a valid mining claim, **without such a claim, she has no property rights against the United States (although she may establish rights against other potential claimants), and her use of the land may be circumscribed beyond the UUD standard because it is not explicitly protected by the Mining Law**.

292 F.Supp.2d at 47 (emphasis added). Although the "UUD standard" was at issue in that case (BLM's duty to "prevent unnecessary or undue degradation" under FLPMA), the holding that development "rights" under the mining laws only apply to lands covered by valid claims applies equally to the USFS and BLM. The court was equally clear as to what was required to "perfect" a mining claim:

> The Mining Law gives individuals the right to explore for mineral resources on lands that are "free and open" in advance of having made a "discovery" or

> perfected a valid mining claim. United States v. Locke, 471 U.S. 84, 86, 105 S.Ct. 1785, 85 L.Ed.2d 64 (1985). The Mining Law provides, however, that a mining claim cannot be perfected "until the discovery of the vein or lode." 30 U.S.C. § 23.

Id. at 46 n. 19. As a result:

> **[b]efore an operator perfects her claim, because there are no rights under the Mining Law that must be respected, BLM has wide discretion in deciding whether to approve or disapprove of a miner's proposed plan of operations.**

Id. at 48 (emphasis added). Yet, in its review of the Montanore Project, the USFS erroneously believed that it did not have – and never even considered – this "wide discretion" to "approve or disapprove" any part of MMC's Plan of Operations.

The fact that MMC proposes to use mining law claims for ancillary operations does not mean, automatically, that each claim is invalid. The Mining Law does not prohibit any and all uses of a mining claim for milling or processing activities. Indeed, a 1955 enactment of Congress specifically authorizes the use of mining claims for "prospecting, mining or processing operations and uses reasonably incident thereto." Surface Resources Act of 1955, 30 U.S.C. § 601,603, 611-615.

However, the 1955 Act did not create any surface use rights independent of the underlying mining claim. This is because the overall intent of the 1955 Act was to limit, not expand, mining claimants' rights. *See generally* Clayton J. Parr & Dale A. Kimball, "Acquisition of Non-Mineral Land for Mine Related Purposes," 23 Rocky Mtn. Min. L. Inst. 595,635-36 (1977). The 1955 Act must therefore be read as not altering the principle that the right of a mining claimant to use the surface of a mining claim is derived from the right to mine the discovered mineral deposit. In other words, although the 1955 Act authorizes "reasonably incident" uses, discovery is still required on each claim in order to establish rights against the United States.

Consequently, if a mining claim is proposed to be used solely for activities that are "reasonably incident" to extracting minerals from other lands, it must be supported by the requisite discovery. This is especially true because federal courts have long and consistently held that a mining claimant's right to use an unpatented mining claim is limited to purposes connected with the removal of minerals from that claim, and not for other purposes. *See, e.g.*, Teller v. United States, 113 F. 273 (8th Cir. 1901); United States v. Rizzinelli, 182 F. 675 (D. Idaho 191 0). As one mining industry author stated:

> [Tlhe use of the surface of an unpatented mining claim for mining and processing minerals removed from other lands may not be authorized. It appears that the use of the surface of unpatented mining claims would be more likely to be challenged if permanent damage is caused to the surface and no mining is conducted under the mining claim.

Richard G. Allen, "Utilization of Adjacent Properties, Cross-Mining, and Commingling," 26 Rocky Mtn. Min. L. Inst. 419,428 (1980); *see also* Parr & Kimball, at 634-36 (concluding that the "surface rights of the locator [of a mining claim are tied] to extraction of the mineral deposit

contained within the boundaries of the claim," and therefore if a claim is being used for "dumping of waste, stripping, or some other similar use causing permanent surface disturbance" in connection with mining off that claim, it is questionable at best).

The leading mining industry treatise stated:

> Several early cases recognized the right of an operator to occupy and use unoccupied public domain in connection with mining operations. However, it is doubtful that such rights continue to exist in light of the comprehensive land use procedures adopted in the Federal Land Policy and Management Act of 1976. When ground is held by a mining claim that is not valid, an operator's rights are limited to those conferred under the doctrine of *pedis possesio*.

4 Am. L. Mining 2d, supra note 17, 110.02[3][d] (Aug. 1997) (citations omitted). Thus, the USFS cannot in this case determine that MMC is "entitled" under the Mining Law to use its claims for roads, pipelines, waste dumping, tailings, etc., when there is no evidence in the record that those claims are supported by any rights under the Mining Law against the United States. This is even more true for the use of these claims to support the development of minerals from MMC's private minerals.

Regarding the requirement for the federal government to obtain FMV for the use of lands not covered by valid claims, the courts have held that, under FLPMA, "the United States [must] receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute." 43 U.S.C. §1701(a)(9). Unless the lands were covered by valid claims (*i.e.* the situation "otherwise provided for by statute" in § 01(a)(9)), the agencies must comply with their FMV duty:

> Operations neither conducted pursuant to valid mining claims nor otherwise explicitly protected by FLPMA or the Mining Law (*i.e.*, exploration activities, ingress and egress, and limited utilization of mill sites) must be evaluated in light of Congress's expressed policy goal for the United States to "receive fair market value of the use of the public lands and their resources." 43 U.S.C. § 1701(a)(9).

Mineral Policy Center, at 51.

At Montanore, the USFS has utterly failed to even consider the application of its multiple use authority, and related FMV requirements pursuant to the Court's Order in Mineral Policy Center – a violation of FLPMA, the Mining Law, and their multiple-use mandates, as well as being an arbitrary and capricious decision under the Administrative Procedure Act (APA).

As noted herein, all of the proposed disturbance on public land outside the Wilderness involves tailings, processing and other non-extractive uses covered by unpatented claims. There is no evidence in the record that any of these claims are valid.

Thus, outside of the mill site claims (for which no information is provided), the Project lands do not contain the requisite locatable minerals, which is a prerequisite for claim validity. *See* 30 U.S.C. § 22 (only "valuable mineral deposits" are covered by the Mining Law); 30 U.S.C. § 611 ("common varieties" of minerals are not locatable under the Mining Law).

As stated in the USFS Minerals Manual: "**In order to successfully defend rights to occupy and use a claim** for prospecting and mining, a claimant must meet the requirements as specified or implied by the mining laws, in addition to the rules and regulations of the USFS. These **require a claimant to: … 2. Discover a valuable mineral deposit. … (and) 7. Be prepared to show evidence of mineral discovery**." FSM 2813.2 (emphasis added).

Under the Mining Law, in order to be valid, mining claims must contain the "discovery of a valuable mineral deposit." 30 U.S.C. § 22. *See* herein discussion of test for valid claims. According to the USFS Minerals Manual: "A claim unsupported by a discovery of a valuable mineral deposit is invalid from the time of location, and the only rights the claimant has are those belonging to anyone to enter and prospect on National Forest lands." FSM §2811.5.

> The term "valid claim" often is used in a loose and incorrect sense to indicate only that the ritualistic requirements of posting of notice, monumentation, discovery work, recording, annual assessment work, payment of taxes, and so forth, have been met. This overlooks the basic requirement that the claimant must discover a valuable mineral deposit. Generally, a valid claim is a claim that may be patented.

FSM § 28115.

In addition, USFS's decision not to require the payment of FMV, and to limit its authority over the use of the ancillary lands, must be supported by substantial evidence in the record – evidence which does not exist. The agencies cannot simply assume, without any evidence (and indeed the evidence points to the contrary) that the project lands are covered by valid claims. The Supreme Court has explained:

> [A]n agency rule would be arbitrary and capricious if the agency has **relied on factors which Congress has not intended it to consider**, entirely failed to consider an important aspect of the problem, **offered an explanation for its decision that runs counter to the evidence before the agency**, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 43 (1983)(emphasis added). The Ninth Circuit, citing Motor Vehicle Mfrs, has explained:

> [T]he APA requires us to determine whether the Commission's decision was a reasonable exercise of its discretion, based on consideration of relevant factors, and supported by the record. . . . While our standard of judicial review is highly deferential, it may not be uncritical. Under the APA, an agency's discretion is not boundless, and we must satisfy ourselves that the agency examined the relevant data and articulated a satisfactory explanation for its action based upon the record.

People of State of Cal. v. F.C.C., 905 F.2d 1217, 1230 (9th Cir. 1990). *See also* Marsh v. Oregon Natural Resources Council, 490 U.S. 360, 378 (1989)(requiring that courts ensure that agency decisions are founded on a reasoned evaluation "of the relevant factors.").

At a minimum, the agencies should have inquired as to whether the vast majority of the Project lands contained "common varieties" or "valuable mineral deposits." The USFS recognizes that a valid claim under the Mining Law cannot be made for common variety minerals. "The 1955 Multiple-Use Mining Act (69 Stat. 367; 30 U.S.C. 601, 603, 611-615) amended the United States mining laws in several respects. The act provides that common varieties of mineral materials shall not be deemed valuable mineral deposits for purposes of establishing a mining claim." FSM §2812.

The FEIS and DROD apparently take the position that the demonstration of claim validity is not required for approval of a mining PoO. This position misunderstands the law, as well as our comments. Although it may be true that the lack of valid claims does not outright bar the agency from approving mining on public lands (it can approve mining similar to other multiple uses under other authorities), the law prohibits the agency from assuming that MMC had a statutory "right" under the Mining Law to have all these operations approved when no evidence exists to support that assumption or right. As shown herein, that "right" only exists if based on valid claims.

In other words, without any evidence that this "right" attaches to the claim(s), then the USFS makes an arbitrary and capricious decision when it assumes these rights without any evidence to support the assumption. The agency can approve mining operations that are not on valid claims under other authorities (e.g., Special Use Permits, assuming all requirements are followed) but that is not what is proposed. Rather, the agency admits that it is significantly limited by these alleged mining rights, when there is no evidence to support this self-imposed constraint. Further, this policy for the use of lands that do not contain valuable minerals, yet are part of the mining operation, contradicts the agency requirement noted above that for roads used in the mining operation, a FLPMA Title V ROW/Special Use Permit is required unless the road is on lands covered by "valid mining claims." FSM 2733.03.

Although a complete mineral report and claim validity verification is not required for every single mining proposal, the agency must have evidence that the claims meet the legal prerequisites to establish rights under the Mining Law. At a minimum, evidence needs to be in the record supporting valid rights under the mining law **if** the agency reviews and approves every facility and land use under an assumed right under the Mining Law – rights that accrue only if based on valid claims as shown by the legal decisions noted herein. As stated in the USFS Minerals Manual: "In order to successfully defend rights to occupy and use a claim for prospecting and mining, a claimant must meet the requirements as specified or implied by the mining laws, in addition to the rules and regulations of the USFS. These require a claimant to: … 2. Discover a valuable mineral deposit. … (and) 7. **Be prepared to show evidence of mineral discovery**." FSM 2813.2 (emphasis added).

In other words, because the USFS's review and approval of the Project was based on alleged "rights" under the Mining Law, the record must contain evidence that the legal prerequisites for establishing those rights exist in fact and law. Any policy or decision to the contrary is illegal.

In this case, due to the lack of such evidence, and indeed evidence showing that the project lands proposed for the roads, pipelines, and other non-extractive uses do **not** contain the requisite

valuable minerals, and are likely "common variety" minerals, USFS's assumptions of "rights" or an "entitlement" under the Mining Law are legally and factually erroneous. The agency's assumption regarding these alleged rights and entitlements should be investigated and supported by detailed factual evidence in a revised or supplemental DEIS. Until then, no PoO can be approved, and no ROD authorizing mine approval can be issued.

FF. THE FEIS AND DROD'S REVIEW AND TREATMENT OF GRIZZLY BEARS VIOALTES NEPA, THE ESA, NFMA, AND THE ORGANIC ACT

As noted in our previous comments and herein, the FEIS and DROD fail to meet its procedural obligations under NEPA, and its substantive and procedural obligations under the ESA, NFMA, and Organic Act, in its review and purported protection of grizzly bears.

The Forest Service has failed to fully review and minimize all adverse impacts to a threatened species in the selection of its preferred alternatives [Mine Alternative 3 (the Agency Mitigated Poorman Impoundment Alternative) and Transmission Line Alternative D-R (the Miller Creek Transmission Line Alternative)].

The population of grizzly bears in the Cabinet-Yaak Ecosystem (CYE) is extremely small and precarious. Under current conditions, even without the implementation of the Rock Creek or Montanore mines, grizzly bears are not recovering for the following reasons:

1) The recovery area is too small to support a viable population; 2) the population of 50 bears is too small to remain reach or maintain viability; 3) female mortalities are excessive (60% or greater); 4) the growth of the population was negative from 1999 – 2012, and only reached "stability" in 2013 due to offspring of augmentation bears; 5) the ecosystem's population is isolated by B.C. Highway 3 to the north; 6) since 1982, Kasworm has only monitored one subadult male moving between the Cabinet & Yaak portions of the recovery area, and 7) the CYE fails to meet any of the recovery criteria under the 1993 Grizzly Bear Recovery Plan.

The Forest Service has failed to address the serious barriers to recovery that exist without the Montanore or Rock Creek mines, and has chosen an alternative that will cause further declines in the population.

Under Alternative 3 D-R, the agency has predicted that grizzly bears would be displaced from 13,347 acres. Using an unproven formula that has not been made available to the public for review, compensation acres were calculated to encompass only 7,366 acres. The actual acres of displacement are 33,307.

According to the Montanore DEIS, P: 56, there would be 420 tons of ore concentrate hauled from the site daily in 21 truck-loads - or 42 one-way trips per day. On their 24 hours per day schedule, this amounts to 1.75 trucks per hour, displacing bears for up to 20 years. Displacement of that magnitude, for that length of time, would effectively remove that habitat from the "institutional memory" of the resident grizzly population – particularly all-important females. Mace and Waller (1997) noted that even minimal motorized use was enough to displace grizzlies.

"As described in section 2.5.7.4.1 of the FEIS, the analysis of habitat displacement estimated the extent of the displacement, or zone of influence, and the degree to which suitable grizzly bear habitat is used. The extent of a zone of influence was determined based on the type of activity, as recommended in the Cumulative Effects Analysis Process. The degree of habitat use was estimated based on disturbance coefficients and compensation levels assigned to different human activities. Methods used to estimate displacement effects from the Montanore Project and corresponding habitat compensation are described in greater detail in the *Revised Analysis of Grizzly Bear Displacement Effects* (ERO Resources Corp. 2014b)."

The agency also has ignored the loss of more than 9,000 acres of impacts to areas classified as Bears Out of Recovery Zones (BORZ), thereby failing to provide protection for BORZ grizzly bears.

Furthermore, the agency has failed to buffer the main haul road by 500m on each side. Federal and state bear managers have known for 20 years that grizzlies are displaced from habitat within 500 m of roads (Mace and Waller 1997), and that the displacement occurs even at a very low traffic volume.

Mine-related activity will sever the known carnivore linkage running SW to NE through Sedlak Park with 42 one-way truck trips per day hauling ore from the mine, plus transportation of mine employees by bus and travel by mine support personnel, and a significant increase in traffic on Hwy. 2. This concern has not been addressed.

The open transmission line route will likely be used by increasing numbers of people – legally and illegally, resulting in increased mortality risks due to improved hunter or poacher access.

Although the agency claims that the transmission line disruption will end during Operations, the line will remain in place as long as the mine is, and therefore reforestation won't happen for nearly 30 years.

"To evaluate compliance with MFSA, transmission line grizzly bear displacement effects were analyzed separately. Combined mine-transmission line displacement effects were analyzed to take into account the full range of impacts of the project. A separate analysis of mine impacts was not necessary. As described in section 3.25.5.2 of the SDEIS and FEIS, the majority of displacement effects would be due to helicopter activity associated with transmission line construction. The transmission line alternatives would cause short-term, new displacement effects to grizzly bears for up to 2 months." M-450.

The claim that the major transmission line impact would come from helicopter use only applies to a very short construction window and ignores the far greater impacts over decades as the line provides increased human hunter and poacher access into the heart of bear country.

Road densities (OMRD, TMRD) and core habitat would be impacted. All combined action alternatives would increase OMRD in BMU 5 during construction and operations. Although

OMRD in BMU 5 would improve compared to existing densities after reclamation, this will only occur after 16-19 years of displacement of bears from habitat.

While BMU 5 currently meets the weak 33/26/55 standards, female mortality is 60% (1999-2011), and probability of decline is 78%. Therefore, anything that weakens these numbers - as Montanore does - makes the situation worse for bears.

Even without a mine, BMU 6 currently meets none of the access standards.

The combined action alternatives could result in increased grizzly bear mortality due to greater traffic and increased numbers of visitors to the forest. During full operation, Montanore is projected to employ 450 people. Adding to that number are family members and individuals and businesses moving into the area to provide services to the mine and miners. When these "multiplier effects" are factored in, it's not unreasonable to expect that the mine will result in a surge of 1200-1500 people living and working in the area - many of them new arrivals. This number of new people, hunting, hiking, and driving Highway 2 and forest roads cannot help but increase bear-human conflicts and fracture already stressed linkage zones.

The increased intrusions would displace grizzlies from a key habitat type – particularly females with cubs - with impacts to both female nutrition and cub survival. Second, all of these habitat disruptions create linear fracture zones, where increases in bear mortality are likely to occur. Mattson et al. (1996) has noted that grizzly mortality is driven by frequency of human contacts, and the lethality of those contacts.

The Forest Service has approved the mine based on the implementation of an inadequate mitigation plan.

The agency proposes to mitigate impacts from increased human presence, poaching, and traffic and the resulting increased mortality risks through road closures in the operating permit areas via gates or barriers. Other mitigation measures include a bear specialist, the removal of road-killed animals, public education, enforcement of laws protecting grizzly bears, the development of a transportation plan, etc. These measures likely will be ineffective to stem increased mortality due to the large influx of mine-related workers, families, and support personnel.

The mitigation plan for Montanore calls for the funding of two to three Grizzly Conflict Resolution Specialists and a new Fish Wildlife and Parks Warden. There is no evidence that these mitigation measures will be effective, and there is ample evidence to the contrary. As mitigation for the Rock Creek mine, Montana Fish Wildlife and Parks Bear Specialist Kim Annis implemented many of the conflict-reduction measures called for in both mine proposals beginning in 2007. When comparing the eight years prior to her arrival with the past eight years, mortalities have remained unchanged at 13 – with no new mines.

The agency's claim that the increased risk of grizzly bear mortality can be mitigated with conflict resolution specialists and wardens also is unsupported by evidence from the nearby Northern Continental Divide Ecosystem (NCDE). Despite the presence of five Bear Conflict Resolution Specialists and even more wardens, illegal mortality is the number two cause of

grizzly bear deaths in the NCDE (USDI 2008). The primary cause of NCDE mortalities is management control of habituated and food conditioned bears. The presence of 300-450 workers and their families in the area (many of whom will be recent immigrants) likely will cause insurmountable management challenges for conflict resolution specialists.

Employees would be prohibited from carrying guns while on the job, but can carry guns into the ecosystem on their days off, and family members and support personnel can carry guns anytime/anywhere they want.

Mines Management would provide a few hundred bear-resistant containers, but this will be inadequate to meet the needs of 450 employees, their families, and 350 support personnel.

"In the agencies' alternatives, MMC would fund a bear specialist, law enforcement, and habitat conservation biologist positions. Public education about grizzly bears, enforcement of laws protecting grizzly bears, and management of lands to benefit the grizzly bear would reduce mortality risks." FEIS at M- 446-447.

The presence of road kill carcasses from increased vehicle collisions will present a food attractant for bears. MMC will be required to remove road kill carcasses within 50 feet from the right-of-way on a daily basis, but this is inadequate to prevent attracting & habituating/food-conditioning bears. All carcasses should be removed completely off-site and within an hour of being killed, but the Forest Service considers this an unreasonable burden on the company.

None of the mitigation measures will lower the increased traffic volume on Highways 2 and 56.

The Kootenai National Forest and FWS note in their Mitigation Plan that MMC will fund studies on Linkage Zones between the Cabinet and Yaak portions of the ecosystem, and reference the Servheen Linkage Report as evidence of their work in this area. However, since the Draft Montanore ROD was issued, the Kootenai National Forest has released its 2014 Final Forest Plan and ROD. This plan actively subverts potential Linkages to the NCDE, SBE, and SE by removing 84% of Inventoried Roadless Areas (IRA's) from Recommended Wilderness consideration, and designating many of them as Backcountry Motorized. Others are isolated by logging.

In addition, the linkage areas profiled by Servheen's report are well beyond the areas that will be directly impacted by Montanore. The Servheen Linkage Report looked at areas well north and west of Montanore on Hwy. 2; only looked at movement corridors across the highway; was based on homes and developments along the highway and didn't consider the mine; and that the SDEIS ignored the presence of a known carnivore linkage running SW to NE through Sedlak Park that the mine, and Hwy. 2 traffic, were likely to sever.

The SDEIS acknowledges impacts to OMRD, TMRD, and Core habitat, but has failed to mitigate those impacts. "Updating" them in the FEIS with standards, objectives, and guidelines from the weak Access Management Amendments does nothing to address the problem.

The agencies' grizzly bear mitigation plan described in Section 2.5.7.4 of the FEIS requires

MMC to implement or fund monitoring of the effectiveness of closure devices installed in roads where access would be changed to mitigate for effects to grizzly bears at least twice annually, and complete any necessary repairs immediately.

The fact that MMC would fund access changes on several roads and fund effectiveness monitoring twice per year is ineffective – particularly since some "closures" would be by gates, and these don't work to exclude access, and aren't allowed in Core (IGBC 1998). The agency and NGO's have repeatedly found that gates fail, in the vast majority of cases, to keep unauthorized vehicles out (Predator Project 1995, Swan View Coalition et al 2005).

The mitigation plan calls for checking gates May 1st and November 1st (when virtually no grizzlies are out), with no monitoring for 99% of the non-denning season when motorized incursion into "secure" bear habitat will occur.

MMC funded monitoring of bear movements and status will merely document the damage the mine has done after it's too late for the agencies to reverse course.

The replacement of lost habitat is insufficient, and won't come close to replacing the 33,307 impaired acres – including 5 creeks and their riparian acres, or the fractured Linkage at Sedlak Park. The agency states that 2 acres of habitat would be acquired for every acre lost, but has incorrectly calculated the actual acreage lost and is allowing non-core habitat to be mitigated on a 2:1 basis of core to non-core habitat.

The mitigation plan is not creating any new habitat. In its 2006 BiOp for the Rock Creek mine, the FWS warned that protecting existing grizzly bear habitat is not creating any new habitat. Therefore, the baseline of grizzly bear habitat is reduced by the mine even with mitigation that protects possible future development of grizzly bear habitat.

Grizzly bears are a wide-ranging species, and in all likelihood are already using the proposed mitigation properties, contrary to the agency's unsupported assertion to the contrary.

The agency's claim of Core creation rests on access management changes of which 26% are closures accomplished by gates. Gating has been shown to be totally ineffective (Bertram 1992, USDI 1994, Predator Project 1995, Swan View Coalition 2005), and not permitted in Core areas. Roads 231 and 2316 are to be "gated seasonally" despite standards from the Interagency Grizzly Bear Committee (IGBC 1998) and the Kootenai's own FEIS on Access Management that "Core areas do not contain any gated roads…" In addition, roads 4776A, 4778C, 4776C, 4776F, 6200, 6200D, 6200E, 6200F, 6214, and 6214F are open to snowmobiles from Dec.1 to March 31 – despite the fact that many male grizzlies begin emerging from dens by March 15th or earlier.

Both IGBC standards and those for the Kootenai National Forest are clear that roads open for any portion of the "nondenning season" are to be counted as "Open", rather than "Restricted." The result is that of 51 miles of claimed road closures, 27 miles (53%) will be ineffective and unsupported mitigation. In addition, because the Kootenai recognizes no minimum Core size, the "improvements" to Core could be in totally ineffective blocks of 50 or 100 acres with no linkage between them.

The agency is relying on mitigation to improve habitat quality over time and increase core over time through road access management, but the benefits of this mitigation would not occur until long after the impacts have occurred. According to the USFS: "The agencies' land acquisition requirement would protect habitat from habitat alteration resulting from regional increases in land development and would likely improve grizzly bear habitat quality and increase core habitat **over the long term** through road access changes and elimination of sources of grizzly bear disturbance." FEIS at M-454 (emphasis added).

The Forest Service acknowledges, but fails to adequately consider cumulative impacts, while relying on insufficient mitigation measures to offset impacts.

There will be cumulative impacts from the mine and transmission line and other reasonably foreseeable actions including Bear Lakes blasting, Wayup Mine/Fourth of July Road Access Project, Plum Creek activities, the Rock Creek Project, and Phase I and Phase II of the Miller-West Fisher Vegetation Management Project. The agency has done an inadequate analysis of these cumulative impacts because "reasonably foreseeable actions cannot be determined."

Yet the USFS has stated that: "Timelines for the Montanore, Rock Creek, Miller-West Fisher, and other reasonably foreseeable actions cannot be determined, thus it is uncertain which, if any of these projects will occur concurrently. In addition, given the variation in grizzly bear response to similar activities recorded in the literature, grizzly bear response to these activities cannot be predicted with certainty." FEIS at M-445. However, as noted herein, the USFS has stated that approval of the Rock Creek Project is anticipated to occur in 2015 or soon thereafter, thus rendering the assumption regarding the "timelines" unsupportable.

According to the 2006 USFWS Biological Opinion for Montanore, if the Montanore and Rock Creek Projects are both were built or operated at the same time, their combined impacts would cut off 22% of the ecosystem and 31% of the grizzlies, leaving a population too small to be viable.

The Montanore Mine and the Bear Creek Road, when coupled with the Rock Creek Mine, will sever the Cabinet portion of the ecosystem in half, "leaving a population too small to remain viable", as correctly noted by the U.S. Fish and Wildlife Service (2006). This isolation of grizzly bears will further impede recovery. The USFS has yet to correct this fundamental problem – in violation of the ESA, NFMA and Organic Act (as well as NEPA).

Mitigation measures require the company to "attempt to acquire" mitigation lands in the north-south corridor to offset displacement. This would amount to only 500 acres within the effected travel corridor.

Other measures such as educating employees about grizzly bears and supplying secure garbage containers will not prevent habitat fragmentation, disruption of travel corridors, or the displacement of bears from mine activities, and may or may not reduce the mortality of displaced bears.

The agency's analysis of effects on displacement and grizzly bear movement in linkage zones is inadequate, focusing on the transmission line and ignoring fractures caused by the primary haul route and Highway 2 along with the transmission line. The Montanore Project would create a 10-mile "linear fracture zone" along Bear Creek Road, fragmenting five creek corridors, and creating additional displacement and mortality zones.

The agency states that the U.S. 2 linkage zone has been heavily roaded and logged in the past and that transmission impacts will be short-term, but all major roads will see large traffic increases and there likely will be more bear mortalities due to human-bear conflicts on the forest. Studies in the NCDE by Mace and Waller (1997) found that as motorized use increased, displacement increased.

The Forest Service states that transmission line work would occur between June 16 and October 14, thus "minimizing displacement effects." FEIS at M-447. However, this time period is 67% of the entire non-denning season and encompasses fall hyperphagia – virtually guaranteeing conflicts.

The Agency has failed to fully disclose impacts as mandated by NEPA.

According to the FEIS, (M-438), the agencies' grizzly bear mitigation plan, which would apply to all agency alternatives, including the preferred alternative, was further revised in the FEIS to reflect revisions in the impacts analysis based on more recent data and the grizzly bear mitigation plan in the Biological Assessment and to incorporate Reasonable and Prudent Measures in the Biological Opinion. None of this information was made available for public comment and review.

Methods used to estimate displacement effects for Montanore and the corresponding habitat compensation are described in the "Revised Analysis of Grizzly Bear Displacement Effects (ERO Resources Corp. 2014b). FEIS at M-445. Unfortunately, this document was created 3 years after the SDEIS, and unavailable for public review.

Also, the Forest Service failed to provide a Biological Assessment for public review in the DEIS or SDEIS in violation of NEPA's requirement for full public disclosure. "[T]the KNF submitted a final Biological Assessment for effects of the Montanore Project on federally listed species to the FWS in September 2013." FEIS at M-454. This is well after the close of public comment on the last Draft EIS.

NEPA requires that such critical information be subject to public and other agency review during the Draft EIS process. "NEPA procedures must ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken." 40 CFR § 1500.1(b). "NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment. Rather, it is designed to require such analysis as soon as it can reasonably be done." Kern v. BLM, 284 F.3d 1062, 1072 (9th Cir. 2002). NEPA "guarantees that the relevant information will be made available to the larger audience" before completion of the FEIS. Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 642 (9th Cir. 2010).

The Forest Service is abdicating its mandate to protect threatened species by relying on the inadequate Biological Opinion produced by the FWS.

As noted herein, the FWS's BIOP is not legally valid and cannot be relied upon by the USFS tio support the FEIS and any approval of the Montanote Project. *See* FEIS at M 454-455 (adopting BIOP).

The agency's habitat mitigation plan is not based on the best available science, but on unsupported suppositions.

The habitat replacement plan is based on incorrect assumptions about bear movement and unsupported by evidence. The Forest Service is relying on the "creation" of new Core habitat based on the gating of roads, although it's been known for decades that gates don't work and the IGBC (1998) doesn't allow gated roads in Core habitat.

The agency assumes that mitigation habitat is new unused habitat, when it's likely that grizzlies generally, and those about to be displaced specifically, are already using portions of it. The Forest Service further assumes that grizzlies will know that this "new" habitat has become available, and will move to it from their current home ranges.

Research by the Forest Service's own biologist (IPNF) Lydia Allen (2011) has shown that female grizzlies show great affinity for their current home ranges and don't move to adjacent large Core areas – even if they have fewer roads.

In its FSEIS for Motorized Access in the CYE/SE (USDA 2011a), the Forest Service claims that the ecosystems do have a number of large Core areas with better security levels than those being used by grizzlies in Wakkinen and Kasworm (1997), but that the study grizzlies weren't using them despite the fact that they were 1-10 miles away. This undermines the assumption that "mitigation habitat" effectively makes up for the documented damage that the mine will cause. (USDA 2011a, Appendix C). Females, in particular, have a strong affinity to their home range and are reluctant to move out of it.

The assumption is made that the costs of female grizzlies being forced out of their home ranges, and into new, unfamiliar areas occupied by other grizzlies, will be minor or temporary – even though the Operations Phase alone is 20 years.

The agency's proposal to replace the loss of two acres of non-core habitat with one acre of core habitat is unsupported and arbitrary.

The FEIS contains unsupported and unfounded conclusions, fails to use best available science, and ignores, misinterprets, or misrepresents current findings related to grizzly bears.

The agency is misrepresenting the 33/26/55% standard to allow more roaded habitat. For example, the 33% OMRD standard means that 33% or less of a BMU has open road densities exceeding 1 mi./sq.mi. – i.e. all numbers less than 33% meet the standard. The Forest Service

and FWS have incorrectly claimed that numbers less than 33% exceed the standard – allowing habitat degradation until they reach 33%. Further, the fact that the 33/26/55 standards are being met in some cases is irrelevant, since under them female mortality was still 60% of the total (30% is allowable); the population had a 78% probability of decline; and no recovery standards were being met in 2011.

In evaluating acres of displacement, the agency is ignoring well-established findings that grizzlies are displaced from habitat within 500m of roads, and that displacement happens at very low traffic volumes (Mace and Waller 1997, McLellan and Shackleton 1988). In addition, Mattson and Knight (1991) reported that grizzlies were displaced for 3km around major developments. None of the displacement figures included the decades old standard of a 500m displacement zone on either side of Bear Creek Road for its reported 16.2 miles.

As noted in the previous comments (322-6): "None of the above figures appear to include the standard 500 m displacement on either side of road # 278 (Bear Creek Rd.) for it's reported 16.2 miles. This adds 6428 acres of displacement from this road alone." In response, the agency states:

> As described in section 2.5.7.4.1 of the FEIS, influence zones, disturbance coefficients, and compensation levels for mine facilities and roads were based on the Cumulative Effects Analysis Process. Methods used to estimate displacement effects from the Montanore Project and corresponding habitat compensation are described in greater detail in the *Revised Analysis of Grizzly Bear Displacement Effects* (ERO Resources Corp. 2014b). Based on the most current information from District transportation specialists, the KNF considers FS Road #278 to currently be a high-use road. However the mine would add additional traffic and a 24 hour activity. Thus, in accordance with the CEM, the categorization of existing roads was changed from "high motorized linear use" (a 0.3 disturbance coefficient) to using the "motorized point 24 hour disturbance coefficient (0.1). According to the CEM, the increase in road use from "high linear motorized use" to "motorized 24 hour" was expected to decrease the ability of the influence zone to support grizzly bears from the existing 70 percent by another 20 percent, or by a total of 90 percent. In other words, with the effects of the proposed action, the ability of the influence zone to support grizzly bears would be reduced to about 10 percent of its potential. The analysis of displacement effects was updated in section 3.25.5.2 of the FEIS to include additional displacement effects from increased traffic on FS Road #278.

FEIS at M-445. Yet none of these coefficients, of unknown origin, explain why a 500m buffer on each side of the road, considered "best available science" for 20 years throughout the Rockies, was not used.

GG. RELIANCE ON PERPETUAL TREATMENT TO PURPORTEDLY PROTECT WATER QUALITY FAILS TO MEET THE AGENCY'S DUTY TO ENSURE TIMELY RECLAMATION

The USFS admits that due to the potential for releases of contaminated water from the tailings, perpetual treatment may be required.

> Post-operational seepage management would be the same as Alternative 2. MMC would operate the seepage collection and the pumpback well systems until groundwater adjacent to the reclaimed impoundment met BHES Order limits or applicable nondegradation criteria without additional treatment. The Seepage Collection Pond and mill pond at the Libby Plant Site also would remain in place. MMC estimates total water storage capacity at closure to be 110 million gallons. Long-term treatment may be required if BHES Order limits or nondegradation criteria were not met. **The length of time these closure activities would occur is not known, but may be decades or more.**

FEIS at 173 (emphasis added). Thus, not only does the agency not know how long treatment may be required (itself a NEPA violation), it admits that the tailings seepage collection, pumpback, and water treatment facilities could last for "decades or more." The same is true for the Libby Plant Site: **"The length of time water may be discharged from the Water Treatment Plant is not known and may be decades or more."** FEIS at 702. The USFS admits that the period of treatment may be perpetual, but has yet to be determined: "The need for perpetual treatment is not known." FEIS at M-226.

In response to the numerous public concerns about perpetual treatment, the USFS merely refers to the general bonding discussion (with no specific amounts, as noted above). FEIS at M-230. No response is given regarding the fact that a mine project requiring perpetual treatment is by definition a mine that cannot be reclaimed.

Allowing the project in a state of indefinite operation does not satisfy the USFS's duty to ensure that all mining operations can be reclaimed. Under the Part 228 regulations, the agency can only approve a mine that can be reclaimed. In detailing the reclamation requirements, the regulation states that the:

> [O]perator shall, where practicable, reclaim the surface disturbed in operations by **taking such measures as will prevent or control onsite and off-site damage to the environment and forest surface resources** including:
> (1) Control of erosion and landslides;
> (2) Control of water runoff;
> **(3) Isolation, removal or control of toxic materials**;
> (4) Reshaping and revegetation of disturbed areas, where reasonably practicable; and
> **(5) Rehabilitation of fisheries and wildlife habitat.**

36 CFR 228.8(g)(emphasis added). These regulations also require the operator to inform the agency and the public of "the period during which the proposed activity will take place."

228.4(c)(3). By authorizing a water quality pollution source, and mining operation, of "unknown" duration, the agency has violated these requirements.

As noted in the USFS's *Anatomy of a Mine* regulatory guidance report, reclamation is a critical and required component of a logical, complete and reasonable mining plan:

> Satisfactory reclamation should emphasize three major objectives:
>
> 1. The productivity of the reclaimed land should at least equal that of the premine surface. This does not necessarily mean that the site must be restored to an approximation of its original condition, or that surface uses after mining will be the same as those existing prior to mining. For example, an area used for marginal grazing prior to mining may be changed to a useful and attractive recreational complex, or perhaps in another case to a housing area.
> 2. **Satisfactory reclamation should leave the mined area in a condition that will not contribute to environmental degradation either in the form of air- or water-borne materials, or from chemical pollution.**
> 3. The reclaimed area should be esthetically acceptable and it should be safe for the uses intended.

"*Anatomy of a Mine, From Prospect to Production,"* USDA Forest Service, General Technical Report INT-GTR-35, Revised February 1995, at 68-69 (emphasis added)(attached).

The Mining and Minerals Policy Act also mandates successful and final reclamation of mine operations approved by the USFS, requiring "**the reclamation of mined land, so as to lessen any adverse impact of mineral extraction and processing upon the physical environment that may result from mining or mineral activities**." 30 U.S.C. 21a.

The Montana Supreme Court, in the Objectors challenge to the state's water quality permitting of the Rock Creek Mine, rejected the agency's similar reliance on long-term or perpetual treatment of the discharges. In Clark Fork Coalition, Rock Creek Alliance, et al. v. Montana Department of Environmental Quality, 197 P.3d 482 (2008), the Supreme Court specifically held that the joint EIS done by the USFS and MDEQ did not take the required "hard look" at the water pollution issues because of the perpetual treatment issues. The Court also rejected reliance on the USFS/MDEQ's reliance on the bond to cover such treatment.

> A simple statement that a perpetual discharge of polluted water will always be treated is insufficient to justify a determination that an irreversible discharge is nonsignificant. DEQ … has not taken a hard look at what will be required to maintain the quality of the Clark Fork River after the mine closes and Outfall 001 continues to discharge polluted water, perhaps forever.

Id. at 493. In that case, as noted above, the USFS and MDEQ had actually discussed the specific amount of the water treatment bond – something the USFS refuses to do for Montanore. In any event, the existence of the bond, even with specific amounts listed, was insufficient under Montana water quality law and regulation, as well as the Montana Environmental Policy Act

(MEPA). Notably, MEPA is very similar and based on the federal NEPA – meaning that the failure to take the required "hard look" under MEPA constitutes the same failure under NEPA.

The Supreme Court also held that allowing long-term or perpetual treatment, including reliance on a bond, violated Montana's nondegradation requirements, as the agency could not show that such a scheme could avoid nondegradation review. Id. at 491-493.

In another analogous case, the State of Washington rejected such a perpetual pollution treatment plan and reliance on a long-term treatment bond:

> The response to predicted pollution in the pit lake is to construct a water treatment plant on top of a mountain that will have to be powered and maintained forever. We are unable to say what will ultimately happen with the waste rock piles. We know that they will pollute the environment. How or in what manner the applicant and state will respond to this pollution is unknown.
>
> The only real assurance we have is the proposed bonding that the state may rely on to enforce environment laws in the future. This approach is tantamount to entering a busy interstate highway on an exit ramp against the traffic. The availability of insurance in that circumstance is no more comforting than the proposed bonding here. The focus of our environmental laws must be on preventing pollution and habitat degradation. It is not legally sufficient to proceed with the proposed mine without much more specific knowledge of the potential impacts from the development and meaningful means of preventing and protecting against the adverse consequence of the development. The long-term engineered solutions proposed in this case are legally insufficient.

Okanogan Highland Alliance v. State of Washington Department of Ecology, Pollution Control Hearings Board, FINAL FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER, ¶¶ 58-59 (Jan. 19, 2000)(attached).

The EPA has also been highly critical of proposals for long-term/perpetual treatment, noting that such plans do not adequately protect water and related public resources. "Based on a review of historical and currently operating mines, some failure of water collection and treatment systems would be expected to occur during operation or post-closure periods. A variety of water collection and treatment failures are possible, ranging from operational failures that result in short-term releases of untreated or partially treated leachates to long-term failures to operate water collection and treatment systems in perpetuity." USEPA (U.S. Environmental Protection Agency). 2014. An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska. Region 10, Seattle, WA. EPA 910-R-14-001, at ES-16.

"The ore deposit would be mined for decades and wastes would require management for centuries or even in perpetuity. Engineered mine waste storage systems have been in existence for only about 50 years, and their long-term behavior is not known. The response of current technology in tailings dam construction is untested and unknown in the face of centuries of unpredictable events such as extreme weather and earthquakes." p. ES-29

The EPA was especially critical of previous approvals of copper mines:

> Water collection and treatment failures are a common feature of mines. A review of the 14 porphyry copper mines that have operated for at least 5 years in the United States found that all but one (93%) had experienced reportable aqueous releases (the definition of a reportable release is determined by local regulations and differs among mines), with the number of events ranging from three to 54 (Earthworks 2012). Mine water releases range from chronic releases of uncaptured leachate to acute events caused by equipment malfunctions, heavy rains, or power failures. The USEPA has observed that some operators continue to discharge when they know that treatment is ineffective and not meeting standards. Hence, the record of analogous mines indicates that releases of water contaminated beyond permit limits would be likely over the life of any mine at the Pebble deposit.

EPA Report at 8-19.

> Reviews of mine records found that 93% of operating porphyry copper mines in the United States reported a water collection or treatment failure (Earthworks 2012). Improved design and practices should result in lower failure rates, but given this record it is unlikely that failure rates would be lower than 10% over the life of a mine. During operation, failures should be brief (less than 1 week) unless they involve a faulty system design or parts that are difficult to replace.

EPA Report at 14-6.

Thus, the creation of a potentially perpetual source of contaminated water, especially one which is a direct threat to aquatic life, beneficial uses of water and public and private lands, and wildlife, violates the federal laws and regulations noted herein. As such, the USFS cannot issue a ROD choosing any action alternative and must reject any PoO that does not ensure final reclamation.

HH. THE USFS FAILS TO PROTECT PUBLIC RESOURCES BY ALLOWING POLLUTION OF GROUDN AND SURFACE WATERS IN "MIXING ZONES" OR VIA "WAIVERS" OF WATER QUALITY STANDARDS.

As noted herein, the USFS acknowledges that water quality below and downgradient from the tailings facility, below Water Treatment Plant, and below sediment loading locations are predicted to violate water quality standards designed to protect beneficial uses. In response, the USFS argues that such pollution is allowed on federal land because Montana might allow the discharges within a "mixing zone" or would grant waivers to MMC to pollute waters above the standards.

The USFS admits that standards would be violated within the mixing zones:

> MMC requested a groundwater mixing zone beneath and downgradient of the Poorman Impoundment for changes in water quality. A mixing zone a limited area of a surface

> water body or a portion of an aquifer, where initial dilution of a discharge takes place and where water quality changes may occur and where certain water quality standards may be exceeded (ARM 17.30.502(6)). The requested mixing zone extended from all areas beneath the impoundment to compliance monitoring wells downgradient of the pumpback wells. The DEQ would determine if a mixing zone beneath and downgradient of the impoundment would be granted in accordance with ARM 17.30.518 and, if so, would determine its size, configuration, and location. If DEQ granted a mixing zone, water quality changes might occur, but BHES Order limits could not be exceeded outside the mixing zone, and for other water quality parameters, nondegradation criteria could not occur outside the mixing zone unless authorized by DEQ.

FEIS at 150.

Yet the USFS cannot rely on state waivers and exemptions from water quality standards when such waiver/exemptions allow pollution on federal lands. At a minimum, there is a "separate regulatory obligation to 'take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.' 36 C.F.R.§ 228.8(e)." Rock Creek Alliance v. Forest Service, 703 F.Supp.2d 1152, 1164 (D. Montana 2010) (Forest Service PoO approval violated Organic Act and 228 regulations by failing to protect water quality and fisheries). "Under the Organic Act the Forest Service must minimize adverse environmental impacts where feasible and must require [the project applicant] to take all practicable measures to maintain and protect fisheries and wildlife habitat." Id. at 1170. Allowing water pollution in mixing zones and under waivers to sediment/turbidity standards certainly does not "minimize adverse impacts."

Under the Organic Act, NFMA, and other laws noted herein, the agency cannot simply defer to the state's permitting system which allows such adverse effects. For example, the relevant portions of the Organic Act state that:

> The Secretary of Agriculture shall make provisions for the protection against destruction by fire and depredations upon the public forests and national forests . . . and he may make such rules and regulations and establish such service as will insure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction . . . .

16 U.S.C. §551. Although §478 of the Organic Act says that the agency cannot "prohibit" mining, that does not mean that the agency must allow significant degradation of public lands and waters under the guise of a state-issued mixing zone or waiver from environmental protection standards. In United States v. Richardson, the Ninth Circuit discussed the relationship between the Organic Act and mining rights, affirming a District of Oregon decision enjoining a particular prospecting method. United States v. Richardson, 599 F.2d 290 (9th Cir. 1979) (limiting mining proponent to non-destructive exploration methods). The court upheld the Forest Service's prohibition against "destructive" methods, noting "the Forest Service may require the locator of an unpatented mining claim on national forest lands to use nondestructive methods of prospecting." Id. at 291. Since the dispute arose just before the adoption of the current Forest Service mining regulations, the court based its decision on the "interrelationship of federal statutes concerning the national forests and mining on public lands [, namely] Rule 5.2, 30 U.S.C. § 26, 30 U.S.C. § 612, 16 U.S.C. § 551, and 16 U.S.C. § 478." Id. at 291-92.

In Clouser v. Espy, the Ninth Circuit affirmed the Forest Service's authority to impose significant restrictions on a mining operation, in that case limiting the claimant to access via pack-mule only. Clouser v. Espy, 42 F.3d 1522 (9th Cir. 1994). The court rejected the claimant's argument that such a restriction violated federal mining laws:

> In light of the broad language of [Organic Administration Act §] 551's grant of authority, [Organic Administration Act §] 478's clarification that activities of miners on national forest lands are subject to regulation under the statute, and this substantial body of case law, there can be no doubt that the Department of Agriculture possesses statutory authority to regulate activities related to mining—even in non-wilderness areas—in order to preserve the national forests.

Id. at 1530.

Indeed, in Clouser, the court affirmed the ability of the agency to restrict mining even to the point that the project would no longer be economically viable. "Virtually all forms of Forest Service regulation of mining claims—for instance, limiting the permissible methods of mining and prospecting in order to reduce incidental environmental damage—will result in increased operating costs, and thereby will affect claim validity." Id.

Allowing significant water pollution within a "mixing zone" or under a "waiver" fails to protect federal public lands and waters as the USFS is required to do. As such, the USFS cannot approve the PoO or ROW as proposed under any action alternative.

CONCLUSION

In conclusion, as detailed above and in previous comments submitted by the Objectors, the FEIS and DROD fail to fully comply with numerous federal and state laws, regulations, policies, and other requirements. As such, the Regional Office must vacate and remand both documents and order the correction of all errors noted herein. The USFS cannot approve any of the action alternatives described in the FEIS, or any action alternative at all that the applicant may propose, unless and until all laws, etc., noted herein are satisfied. Please direct all communications regarding this Objection to the undersigned attorneys.

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