UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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October 1, 2019

Tawnya Brummett
Acting Forest Supervisor
Payette National Forest
500 North Mission Street, Building 2
McCall, Idaho 83638

Alan Haslam
Vice President of Permitting
Midas Gold Idaho, Incorporated
405 South Eighth Street, #201
Boise, Idaho 83702

RE: Comments on the Proposed Stibnite Gold Project - Tunnel Design, Operation, and Management

Dear Ms. Brummett and Mr. Haslam:

At the request of Midas Gold Idaho, Inc. (MGI), NOAA's National Marine Fisheries Service (NMFS) reviewed the documents listed below. It is our understanding that these documents are considered by MGI to represent the 30 percent design package.

1. Midas Gold Idaho, Inc.: Stibnite Gold Project Feasibility Study: East Fork South Fork Salmon River (EFSFSR) Tunnel Design Documentation Report and Associated Design Drawing Sets (November 11, 2018);

2. Draft Fishway Operations and Management Plan (FOMP) (June 2019);

3. Technical Memorandum: Fish Protection Measures for EFSFSR Tunnel Diversion and YPP [Yellow Pine Pit] Dewatering (FPM) (July 2, 2019); and

4. Technical Memorandum No. 11: EFSFSR Fish Passage Tunnel - Accessway and Fishway Hydraulics (July 5, 2019).

5. Hydraulic Conditions Tables

The purpose of this letter is to outline NMFS' comments regarding the proposed tunnel design, its operation and maintenance, and measures proposed to be implemented to minimize adverse impacts to fish listed under the Endangered Species Act (ESA). These comments were developed in coordination with the U.S. Fish and Wildlife Service (USFWS). Our submission of these comments does not predetermine the outcome of future assessments regarding the condition of habitat upstream of the tunnel and whether it will be of sufficient quantity and/or quality for successful spawning, incubation, and rearing of ESA-listed fish during all project phases.

Our general comments are provided below, and comments specific to documents 1–3 above are included as attachments to this letter. We appreciate MGI's submission of the Technical Memorandum No. 11 and the hydraulic tables. We have reviewed information in those two documents and do not have any additional comments or questions.

Design

The proposed tunnel design is a unique fish passage design, both in orientation and function. The proposed tunnel is designed to convey the entire hydrograph of the EFSFSR while providing for both upstream and downstream passage of fish. Due to these design characteristics, the proposed tunnel design is outside the scope and intent of the current *Anadromous Salmonid Passage Facility Design* document (NMFS 2011[1]) (hereinafter referred to as the "Passage Guidance").

The Passage Guidance is intended to produce consistent, repeatable, and stable hydraulic conditions at typical applications of common fish passage structures. Unique orientations and use of innovative or uncommon passage components or structures often make it challenging to predict hydraulic stability and corresponding fish passage effectiveness, due to the potential of fish exhibiting delay or rejection behavior. Implied in the hydraulic criteria contained in the Passage Guidance are behavioral observations made by researchers during initial studies or by NMFS during post-construction monitoring of fish passage facilities. For example, Collins and Elling (1960)[2] observed that unstable flow conditions caused delay in a studied fishway, which in all other respects was hydraulically compatible with passage of the study fish. The Passage Guidance establishes criteria guidelines for hydraulic conditions such as velocity and turbulence. Inherent within NMFS passage criteria is also the mandate to maintain hydraulic stability. Criteria applied to atypical fish passage designs or configurations have an unknown level of hydraulic stability and therefore an unknown level of passage effectiveness and efficiency.

Due to the uniqueness of the proposed design, the expected correlation between fish passage criteria and actual passage performance may not develop. Even after close consultation and collaboration with NMFS, meeting applicable NMFS passage criteria and guidelines, and executing all potential adaptive management measures, there exists a reasonable probability that the project will not be able to volitionally pass fish safely, timely, or effectively. NMFS

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[1] National Marine Fisheries Service (NMFS). 2011. Anadromous salmonid passage facility design. NMFS, Northwest Region, Portland, OR.

[2] Collins, G. B. and C. H. Elling. 1961. Fishway research at the Fisheries-Engineering Research Laboratory. U.S. Fish and Wildlife Service, Bureau of Commercial Fisheries. Circular 98.

appreciates the willingness of MGI to conduct trap and haul operations in the event fish passage through the tunnel does not work as expected.

Passage Performance Standards

Passage systems, such as fish ladders, trap and haul operations, and fish screens provide effective fish passage with minimal delay and injury. All criteria and guidelines contained in the Passage Guidance are developed assuming that passage projects designed to the criteria and guidelines will achieve specific performance standards. A critical step in fish passage projects is validating these assumptions. As part of the validation process, post-construction upstream and downstream performance will need to be evaluated. Tables 1 and 2 provide an example of performance measures and criteria commonly applied to passage projects that are designed in accordance with the Passage Guidance. We anticipate participating in addition discussions with MGI to further refine project-specific performance measures and associated criteria. Where performance standards are not met, adaptive management will need to be employed. In the event that adaptive management cannot meet performance standards, other methods, such as trap and haul, will need to be employed.

Table 1. Commonly used performance standards and criteria for conventional upstream passage systems.

Standard	Criteria
Survival	98% of adult salmonids arriving in the tailrace will be passed upstream of the barrier and will survive as survival is defined herein.
Project Delay	90% of adult salmonids arriving in the tailrace will be passed upstream of the barrier no later than 5 days after first arrival in tailrace.
Post-capture Delay	90% of adult salmonids entering fishway or trap will be passed upstream of the barrier no later than 24 hours following entry into the facility.

Table 2. Commonly used performance standards and criteria for conventional fish screen systems.

Smolts		Fry
Mortality	Injury	Mortality
Design performance objective <0.5%	Design performance objective <2%	Design performance objective <2%
Actual mortality >0.5%, but <2% requires additional work to lessen mortality	Actual injury >2%, but <4% requires additional work to lessen injuries	Actual mortality >2%, but <4% requires additional work to lessen mortality
Actual mortality >2% requires major operational or structural changes	Actual injury >4% requires major operational or structural changes	Actual mortality >4% requires major operational or structural changes

Refinement of the FOMP and FPM

NMFS appreciates the collaborative efforts of MGI to develop the FOMP and FPM. We understand that these draft documents represent an initial compilation of the information (relative to the design, operations and maintenance, passage monitoring, and adaptive management) we initially requested in our February 14, 2019 email and during a subsequent telephone conversation (February 26, 2019) and ESA informal consultation meetings (April 4, 2019 and July 10, 2019). Additional detail that we are requesting is included in the attachments. Generally, NMFS would like more specificity in regards to how the operation and maintenance, performance monitoring, and adaptive management will be conducted. This will enable us to have a clearer understanding of what will happen when, where, and how. As currently drafted, the FOMP and FPM are vague. The following sentence in Section 3.7 of the FOMP provides an example: "*Conditions at the pool will be inspected and the need for additional pool excavation determined.*" What conditions are being inspected? What is the trigger for additional pool excavation?

We understand that the documents are in draft form, and MGI has acknowledged that additional detail will be developed in collaboration with NMFS and the USFWS. We appreciate the opportunity to provide input. Additionally, it is our understanding the MGI intends to establish a subcommittee of ESA Informal Consultation participants that will discuss, in more detail, areas where these documents can be improved to better meet our information needs for ESA consultation. We look forward to being members of that subcommittee. If you have any questions about our comments, please contact Johnna Sandow by phone (208-407-6098) or email (johnna.sandow@noaa.gov).

Sincerely,

for Michael P. Tehan
Assistant Regional Administrator
Interior Columbia Basin Office

Attachments (3)

cc: A. Turner – USFWS
P. Leonard – Brown and Caldwell
C. Nalder – PNF

Attachment 1

Comments on the

EFSFSR Tunnel Design Documentation Report and Associated Design Drawing Sets (November 2018)

Section	Page	Comment
General		Where the FOMP identifies/presents data from this document make all corresponding/related changes in the FOMP document as well.
3.3	14	Recommend adding oversized holding pools at slope breaks in the tunnel fish ladder. Slope breaks may initiate delay reaction for fish, and overcrowding due to delay at this section may initiate a second delay reaction in fish. These locations may also be critical locations for the installation of video recording or streaming devices to monitor fish delay in the ladder.
Table 4-1	28	Please list all relevant criteria, to include operational criteria, for trap and haul.
Table 4-1	28	Criteria width for fishway slots used for Chinook passage is a minimum of 18" wide. This criterion is missing from this section.
Table 4-1	28	Transport Velocity is not a criterion that applies anywhere in the tunnel design. Please remove this criterion.
Table 4-1	28	Please include fish design criteria for all project boulder weir designs.
4.2	30	Trap and Haul designs are omitted from the fish passage design elements. This is a critical adaptive management tool, whose design should be addressed in this section. In addition, when this item is added to the FOMP it should also include a description of the following: (1) Methods and protocol for trap and haul operations; and (2) methods for maintenance of the trap and collection facility (e.g., how the action area will be isolated to keep fish out; how fish will be salvaged if they are present in the action area; methods use to conduct maintenance operations; detailed summary of how maintenance operations will be conducted; and what BMPs will be implemented to remove or reduce potential adverse effects may occur as a result of maintenance operations).
4.2	30	Boulder weir designs are omitted from the fish passage design elements. This is a critical passage design element that needs to be addressed in this section. Discussion should include how the boulder weir design will hydraulically effect/interact with the tunnel fish ladder entrance and adjacent exclusion barrier. In addition, when this item is added to the FOMP it should also describe the following: (1) Methods and protocol for monitoring boulder weir function and effect on fish ladder entrance and adjacent exclusion barrier; and (2) methods of maintenance of the boulder weirs (e.g., how the action area will be isolated to keep fish out; how fish will be salvaged if they are present in the action area; methods used to conduct maintenance operations; detailed summary of how maintenance operations will be conducted; and what best management practices (BMPs) will be implemented to remove or reduce potential adverse effects that may occur as a result of maintenance operations).
4.2.4	32	It's unclear what the operational depth of the fish ladder pools are at the 5% and 95% exceedance flow. Please list both of these pool depths in this section.

Attachment 2

Comments on the
Fishway Operations and Management Plan (June 2019)

Section	Page	Comment
1.1.1	1-2	The text states that the adult fish entrance (north end of the tunnel) will have 100% of the attraction flow. While this will likely be the case during Chinook migration, it appears that during steelhead migration, most of the water will come from the accessway portion and then merge with flow from the fishway outlet. Does this have potential to delay or interfere with upstream migration of steelhead?
1.1.2	1-2	It is unclear whether upstream fish passage will be possible in either the tunnel or the reconstructed EFSFSR when flows are being split (as the newly constructed channel on the YPP backfill is being re-watered). This is particularly of question during the fall baseflow conditions, when Chinook and bull trout are migrating to spawning grounds. Please provide information enabling our assessment of fish passage during this time period (e.g., anticipated flows and passage conditions).
1.2	1-6	Steelhead critical habitat extends beyond Sugar Creek. The text leaves the impression that designated critical habitat for steelhead in the EFSFSR ends at the confluence of Sugar Creek.
1.3.1	1-8	The Nez Perce Tribe does not operate the screw trap year-round. It is possible that juveniles may out-migrate during the winter (i.e., December through February). To investigate this further, one could examine PIT tag detections at downstream arrays. This has already been done at a broad scale for specific populations of Chinook salmon, and results are included in the *Monitoring the migrations of wild Snake River spring/summer Chinook salmon juveniles: Survival and Timing, 2018* report prepared by Lamb et al. 2019. There are some detections of juvenile salmon at the Secesh arrays in the winter. As such, it seems most conservative to assume the potential for year-round outmigration of juveniles.
2	General	Please include a description of the trap and haul facilities.
2	2-1	The document states that "no adult fish will pass through the accessway because there is an exclusion barrier at the fishway entrance and pickets placed on top of the flow control weir at the fishway exit." It is unclear if juveniles will be able to pass through the accessway.
Table 2-1	2-1	The table includes the following statement for various design criteria: "Applicable to fish ladders only." Please help us understand the intent of these statements. Technically we consider the fishway to function like a fish ladder, so we expect it to meet criteria unless it can be demonstrated that passage will not be impeded or unless the conditions in the fishway are similar to those occurring in the natural channel upstream or adverse of the tunnel.
Table 2-1	2-1	The transport velocity criterion is not applicable to this project.
2.2.1.4 & 2.2.2	Pages 2-7 through 2-9	Please verify the maximum flow that is reasonably expected to occur in the fishway during steelhead migration as well as during Chinook salmon migration. What fraction of the EFSFSR flow do these maximum flows represent? It remains unclear as to whether the flow in the fishway will be managed to remain below the 5th percentile flows (or another flow, such as 25 cubic feet per second [cfs]) estimated for the migration periods.
2.2.4.4	2-11	The rock weir will determine the water elevation at the adult holding pool. It will be important to monitor the fishway entrance conditions because they will dictate the level of the rock weirs. The drop at the fishway entrance should not exceed 1.5 feet. If greater than 1.5 feet, then rocks in the weir should be adjusted to reduce the drop at the fishway entrance. Please describe the methods and protocols for monitoring and maintaining the adult holding pool and fishway entrance conditions in Section 3. We recommend maintenance occur on the receding limb of the hydrograph.

Attachment 2

Comments on the
Fishway Operations and Management Plan (June 2019)

Section	Page	Comment
3	General	Please reorganize this Section to a formal mirroring Section 2. We need to understand the methods and protocols for monitoring/maintaining each of the features described in Sections 2. For example, Section 2.2.1.1 describes the structure and function of the Primary Sediment Trap/Resting Pool. Section 3.2.1 describes the operations and maintenance proposed for this structure. This one-to-one association makes is easier to understand this aspect of the proposed action; thus, we would like to see this mimicked for the remainder of the elements identified in Sections 2.2.1.2 through 2.2.4.4.
3	General	Please describe the methods and protocols for monitoring and maintaining each tunnel element identified in Section 2 (including trap and haul facilities). This may include, but is not limited to: what metrics will be monitored; when monitoring will occur; what will trigger maintenance; how the action area will be isolated to keep fish out; how fish will be salvaged if they are present in the action area; whether and how dewatering will be performed; methods used to conduct maintenance; detailed summary of how maintenance will be conducted; identify what potential adverse effects may occur as a result of operations/maintenance; and, what BMPs will be implemented to remove or reduce those effects.
3.1	3-1	The Biological Assessment will need to describe how long it will take to reach a steady state condition in the fishway and how flows in the EFSFSR, below the tunnel, will be maintained during the initial watering up of the tunnel. If there are particular operational elements that will be implemented to reduce adverse effects on downstream flows during the initial wetting of the tunnel, those should be described in the FOMP.
3.2.1	3-1	Please define what is meant by "extreme events." Although not clearly articulated, the inspection frequency appears to be required at least annually. Please ensure the document clearly identifies the inspection frequency. If particular structures require a different inspection frequency, please ensure the document is clear regarding what will be done and when.
3.2.1	3-1	It is unclear what "late summer" means. Chinook salmon spawn in late summer, so there is potential for there to be overlap of spawning and sediment trap cleaning. Please clarify the timing of the primary sediment trap and sediment drop out zone cleaning. If cleaning could overlap with adult migration and spawning, then describe whether spawning substrates are expected to be present and, if so, what will be done to prevent spawning from occurring prior to cleaning.
3.2.1	3-2	We will need more information about how substrate and sediment will be removed from the primary sediment trap, sediment drop out zone, and fishway. It is preferable to conduct cleaning in the dry to minimize impacts to aquatic habitat (i.e., turbidity) and fish that may be present. If this is not feasible, please add more detail regarding how potential impacts to fish (i.e., death or injury) and designated critical habitat (i.e., turbidity) will be minimized. For example, cleaning with a suction dredge would likely result in lower instream turbidity compared to removing material with an excavator.
3.2.1	3-2	MGI should consider separating bedload material and moving it to a location in the downstream riparian area so it is available for recruitment during the next high flow event.
3.2.3	3-3	To minimize impacts to vegetation and to minimize ongoing sediment delivery from disturbed ground surfaces, roads within the riparian area, particularly those below the flood level, should be as small as possible. The smallest equipment possible should be used to conduct the needed maintenance of the tunnel and its inlet and outlet. Is a road width of 20 feet the minimum needed?
3.3	3-3	What is the frequency of tunnel portal inspection? The document organization creates uncertainty as to whether the inspection frequency described in Section 3.2 remains applicable in Sections 3.3 through 3.10.
3.7	3-4	Bank conditions that indicate sediment delivery to the EFSFSR channel is occurring should be noted and ameliorated.

Attachment 2

Comments on the
Fishway Operations and Management Plan (June 2019)

Section	Page	Comment
3.7	3-4	The North Channel should be monitored for spawning habitat. If suitable spawning habitat conditions form in the North Channel, then annual spawning surveys should be conducted. No instream maintenance should be conducted during the migration/spawning season.
3.11	3-5	Please include more specific information about trap and haul practices that will be implemented. The type of information we will need includes, but is not limited to, a description of: (1) Protocol for how fish will be collected; (2) how long they will be held; (3) what they will be held in; (4) where holding water will be obtained from; (5) Protocol for fish stress and health monitoring; (6) what metrics for fish stress and health will be monitored and how (e.g., dissolved oxygen, temperature, etc.); (7) where they will be out-planted; and (8) how they will be out-planted. Please also include details pertaining to the monitoring and reporting of fish stress, fish health, and mortality.
3.12	3-6	Please include the project-specific work window, once it is developed, rather than relying on the Upper Salmon Basin document, which does not cover this area. It is unclear which additional fish protection measures are being referenced here. Which fish protection measures described in the FMP will be implemented as part of the operation and maintenance of the tunnel features? Please provide more specificity.
3.12	3-7	Please omit the word "potential" from the following sentence: *"Receding streamflows within the accessway would signal potential inspection and fish salvage."* Inspection should occur following receding streamflows.
3.12	3-7	Please provide more detail about what the following sentence entails: "...the accessway would remain flowing for a period by mechanical or gravity means to continue flushing fish adverse."
3.13	3-7	Please provide more detail about how streamflow will be incrementally increased (e.g., for how long will it occur; what will be the source of water; etc.). How will fish passage during the Chinook salmon and bull trout migration/spawning be maintained when the restored stream channel is receiving incremental streamflow prior to full dewatering of the tunnel? How will fish stranding be avoided?
3.13	3-6	There is reference to adult tagging. Please clarify which species you intend to tag. We prefer adult Chinook salmon and steelhead not be tagged.
4.1	4-1	Please avoid using the term "consult" or "consultation" when referring to coordination with NMFS and the USFWS. While there will be formal consultation on this project, adaptive management will be ongoing throughout the project and we envision there will be ongoing *coordination* with our agency that won't necessarily rise to the level of requiring consultation. For example, "*If the results of the monitoring program indicate that fish passage in the EFSFSR diversion is failing to achieve the performance standards as anticipated, reasons for not achieving current standards would be evaluated and corrective actions would be proposed in consultation with the Services."* We recommend changing "consultation" to "coordination" or another synonym.
Table 4-1	4-4	All transport channel criteria should be removed. No transport channel exists. One of the performance criteria should be a hydraulic drop between 1-foot and 1.5 feet at the fish ladder entrance. We need to discuss performance criteria for the fish ladder in more detail and develop some project-specific metrics.
4.2.2	4-3	There is reference to juvenile fish that have been previously PIT tagged. The document does not discuss PIT tagging juvenile fish. Please describe the PIT tagging of juvenile fish.
4.2.2	4-3	Please include a discussion about how PIT tag array detection efficiency will be assessed.

Attachment 2

Comments on the
Fishway Operations and Management Plan (June 2019)

Section	Page	Comment
4.3, Table 4-2	4-5	We appreciate MGI's commitment to collect abundance and distribution data, and we agree that it is important information to have. However, we suggest removing the "abundance" and "distribution" performance measures from Table 4-2, since those are not used to assess tunnel performance.
4.3, Table 4-2	4-5	Passage time through the tunnel should apply to both juvenile and adult. A reasonable metric is <24 hours.
4.3	4-5	Redd surveys and pre-spawn mortality surveys in the EFSFSR (upstream of the tunnel) and Meadow Creek would also be useful indicators of passage.
4.4	4-6	We appreciate MGI proposing phased decision points and your acknowledgment of the importance of NMFS and USFWS involvement in the adaptive management process. We strongly encourage MGI to propose the formation of a fisheries technical team comprised of representatives from the PNF, FWS, NMFS, and MGI. The technical team should have joint-decision making responsibility regarding the adaptive management of the tunnel.

Attachment 3

Comments on the

Fish Protection Measures for EFSFSR Tunnel Diversion and YPP Dewatering Technical Memorandum (July 2, 2019)

Section	Page	Comment
2	4	As discussed during the ESA informal consultation meetings, additional detail about fish salvage (when and where fish are released) needs to be developed to support the consultation process.
3.1	6	Please provide additional detail about installation of the temporary diversion structure so an assessment of potential turbidity generation (magnitude and duration of the turbidity plumes) can be made. Depending on the timing of downstream fish exclusion, this may be less important. Meaning, if fish aren't expected to be present downstream, the duration or magnitude of the turbidity plume is less of a concern - especially if it is reasonable to assume it will not persist downstream of the YPP lake.
3.3	6	We recommend a drop-barrier over the picket weir option because of the potential for debris load cleaning. We would like to see the design of the drop barrier to ensure that steelhead will not be able to jump the barrier. Of all of the ESA-listed fish in the project area, steelhead have the greatest swim capabilities, are present during periods of higher flows, and are of greatest concern to the team for this particular design.
3.3	6	Redds have been documented in the reach of the EFSFSR that will be dewatered downstream of the YPP lake. Therefore, we recommend moving the fish barrier structure farther downstream, to a location near the proposed confluence of the north channel and the EFSFSR. Please ensure Figure 1 is updated to reflect the change in location.
4.1	10	Because of concerns of effects to fish in the YPP lake from a lack of upstream water input, the re-route of Midnight, Hennessey, etc. into the tunnel should happen as close as possible in time to the pit dewatering.
4.2	10	The document should include the barrier design details. If concrete will be poured, BMPs to avoid uncured concrete from entering or coming into contact with the EFSFSR should be specified and implemented.
4.3	10	We will need a better understanding of the when dewatering would commence, how long it is expected to take, how and where water will be routed (e.g., from the YPP lake), and how turbidity will be minimized.
4.3	10	It is unclear why additional water would be directed into the natural channel of the EFSFSR during fish salvage operations. It is difficult to understand how the fish salvage and dewatering operations will be sequenced in the EFSFSR channels (upstream and downstream of the YPP lake) and in the YPP lake. We recommend creation of a Gantt chart to more clearly illustrate the sequencing of events.
4.3	11	The document states, "the design details to meet these functions would be developed by the construction contractor." It is unclear what "these functions" refer to.
4.4	11	Please describe how much time it will take for the fishway to "water up" and the measures that will be implemented to minimize reductions in downstream flows.
4.5	11-12	This section needs additional detail on when and how fish salvage will occur. Detail that is currently included appears limited to seining. We suggest there be separate subsections detailing salvage techniques and timing in lake habitats (YPP lake) and stream habitats (EFSFSR upstream and downstream of the YPP lake) since those techniques will likely be different.
4.5	12	Please add the additional BMPs discussed during the ESA Informal Consultation meetings (e.g., hold fish of different sizes in separate containers, etc.). A plan for relocating fish must be developed to inform the consultation process.
4.6	12	Please describe where water will be diverted to and how turbidity will be controlled such that downstream water quality is protected.
4.7	12	The relevance of this section is unclear in light of moving the fish barrier farther downstream than originally proposed in Figure 1. We are unclear of how a backwater area could be formed when groundwater pumping is proposed.
5	13	It is our understanding that this section is going to be further refined.

Attachment 3

Comments on the

Fish Protection Measures for EFSFSR Tunnel Diversion and YPP Dewatering Technical Memorandum (July 2, 2019)

Section	Page	Comment
6	13	Suggest replacing the phrase "Incidental Take Permit from NOAA Fisheries" with "Incidental Take Statement that will accompany the NOAA Fisheries' Biological Opinion. This suggestion also applies to the second bullet, although it should be tailored to address USFWS.