# <u>Comment Form – Draft Permitting Plan and Draft Tailored Impact Statement Guidelines – Federal</u> <u>Review Team</u>

### Great Bear Gold Project

#### Response required by: June 5, 2024

All comments should be submitted via the Submit a Comment feature available on the Project's Canadian Impact Assessment Registry page (<u>https://iaac-aeic.gc.ca/050/evaluations/proj/85832?culture=en-CA)</u>. Documents can be uploaded using this feature. If you have any difficulties submitting this way, please contact the Registry directly at <u>registry-registre@iaac-aeic.gc.ca</u>. All comments submitted using this form will be posted on the Registry website for the Project.

Please note that this is your opportunity to customize the draft Tailored Impact Statement Guidelines.

Department/Agency:	Fisheries and Oceans Canada		
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IA Contact:	Natalie Boyd	Email:	Melanie.Campbell@dfo- mpo.gc.ca

#### Section 1 – Draft Permitting Plan:

1. Confirm that all applicable legislative and regulatory oversight that may apply to the Project, under the authority of your department or agency, is accurately listed in the draft Permitting Plan.

## Insert response here:

The information regarding an Authorization under the *Fisheries Act* is accurate; however, the details provided are less detailed than those provided for other regulatory agencies (i.e., Environment and Climate Change Canada and Transport Canada).

- Section 3.2 discusses the development and implementation of a fish habitat compensation plan section 3.1 should contain similar text or it should be removed from section 3.2 for consistency. If text is added to section 3.1, DFO recommends the following addition to paragraph 1: "Any residual effects to fish and fish habitat that cannot be mitigated would require measures to offset in order to counterbalance the death of fish and/or the harmful alteration, disruption or destruction of fish habitat."
- Section 4.1.2.2
  - The first sentence should be updated to include the blue text as there is both a completeness and adequacy test. "Once an application for authorization is received, it is reviewed to ensure the information and documentation are complete and adequate."
  - $\circ$  "offsetting plan (if required)"; the "(if required)" should be removed.
  - DFO recommends adding the following text for further information.
     "Further information on DFO's consultation process and expectations can be found on DFO's <u>Crown duty to consult and, when appropriate, accommodate page.</u>"
- Section 4.1.2.3 Regulatory decision; DFO suggests the following edits in blue text in order to clarify DFOs consultation process:

The authorization decision under the *Fisheries Act* is made during the 90-day period following the notification that the application is complete and adequate. The process for reviewing the

application can be ceased under certain circumstances, which may includinge: awaiting the outcome of other federal requirements, such as a federal impact assessment; addressing requirements under SARA; consultation with Indigenous Peoples relative to the potential effects of the authorization decision on Aboriginal and treaty rights; and if additional or amended information is required to make the decision; and to undertake consultation with Indigenous Peoples relative to the potential impacts of the proposed authorization on Aboriginal and treaty rights. Therefore, this decision can only be made after the Minister's Decision Statement relative to the impact assessment is posted on the Canadian Impact Assessment Registry Internet Site (the Registry). Several factors are taken into consideration when making a determination as to whether to issue an authorization, as described in subsection 34.1(1) of the *Fisheries Act*, including further Indigenous Crown consultation.

- Section 4.3.2.2 "Where possible, consultation activities will be coordinated with other departments, ministries, and the proponent to streamline the consultation process." DFO is of the opinion that this sentence should be added to sections 4.1.2.3 and 4.2.2.3 as TC, ECCC, and DFO will often try to coordinate consultation efforts.
- Indicate whether your department or agency has identified any power that it will be unable to exercise to allow the Project to proceed, in whole or in part. For more information, please refer to subsection 17(1) of the IAA.

### Insert response here:

Fisheries and Oceans Canada (DFO) has not identified any power that it will be unable to exercise.

### Section 2 – Draft Tailored Impact Statement Guidelines:

- 1. Please review the draft Tailored Impact Statement Guidelines (the Guidelines) sections that are applicable to your department's or agency's mandate.
- 2. Using the table below, given the context of the Project, please provide any comments and include your recommendation for how the final Tailored Impact Statement Guidelines should be adapted to address any comments.
  - Please indicate any corrections, additions or deletions that should be made to the text. Please provide a clear context and rationale for your recommendations.
  - Federal expert advice should be commensurate to the situational context of the Project and informed by risk-based prudence and evidence in the proponent's Detailed Project Description<sup>1</sup> and Response to the Summary of Issues<sup>2</sup>, with a strong reliance on well-understood mitigation measures, existing guidance, and regulatory instruments that will manage effects.

DFO has highlighted proposed additions or edits in blue. Removals are denoted by a strikethrough. Where edits are only applied to some sub-bullets and others are not mentioned, please assume the other sub-bullets remain as-is.

<sup>&</sup>lt;sup>1</sup> https://iaac-aeic.gc.ca/050/evaluations/document/155992

<sup>&</sup>lt;sup>2</sup> https://iaac-aeic.gc.ca/050/evaluations/document/153313

Department – Comment ID (e.g., ECCC-01)	Draft Guidelines Section	Context and Rationale (provide an explanation of your comments)	Recommendation: provide text to be inserted or deleted. Be specific on the location within the draft Guidelines that the text would be added/deleted.
DFO-01	Section 6	Typo at the start of the last paragraph on pg. 20.	Remove period at the start of paragraph.
DFO-02	Section 8.6.1	The use of hydrometeorological information from nearby weather stations must be rationalized in order to determine the validity of the data comparison. The Proponent should justify why a particular weather station was chosen and also validate the data. Hydrological information can also be provided using nearby stations assuming the appropriate rationale can be provided. Specific to fish and fish habitat, if the hydrological information will be used to inform baseline and effects assessments to fish and fish habitat, it must be relevant and appropriate to the fish and fish habitat potentially affected to inform an accurate assessment at a scale appropriate to fish and fish habitat.	<ul> <li>provide complete hydrometeorological information (temperature, precipitation, evapotranspiration) and hydrological information based on data from nearby weather stations or from a weather station on site, and discuss how the chosen data sets are applicable to the Project in terms of:         <ul> <li>geographic proximity</li> <li>similarity of sites (e.g., watershed sizes, elevation, wetland areas, aspect, etc.)</li> <li>length of record (e.g., more than 30 years, if possible)</li> <li>applicability to the Project period (e.g., currency of data, presence of trends or cyclicity); and,</li> <li>any compromises between the above.</li> </ul> </li> </ul>
DFO-03	Section 8.6.1	See comment ID DFO-02.	<ul> <li>provide flow hydrographs and corresponding water levels for nearby streams and rivers showing the full range of seasonal and inter- annual variations, as well as seasonal low-flow for baseflow quantification;</li> <li>hydrographs may be based on data from nearby gauging stations or from gauging stations on site as long as they are representative of the ungauged site of interest, and its applicability is discussed. Data should be site-specific, avoiding regional datasets where possible.</li> </ul>
DFO-04	Section 8.6.1	DFO requires water level information linked to fish and fish habitat to conduct our assessment of impacts. This connection should	<ul> <li>provide a summary of key groundwater monitoring wells within the LSA and RSA used to inform the conceptual model, and identify their</li> </ul>

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		be clearly described to the proponent. DFO is also of the opinion that the LSA should be included in this summary.	location, groundwater quality information and monitoring frequency. Provide representative hydrographs showing the range of seasonal and inter-annual water level variations and indicate any spatial variation in the RSA and LSA to support the assessment of groundwater effects as they relate to fish and fish habitat. Information within the regional study area should be provided as required to support the development of the conceptual model of groundwater flow;
DFO-05	Section 8.6.1	DFO requests additional information be added for improved linkage and applicability to fish and fish habitat.	<ul> <li>develop a quantitative water balance for watersheds potentially affected by the Project, detailing water intake and outflow to the environment. Where numerical modelling is employed, the selected model should be developed such that it is capable of assessing the hydrologic impacts of the Project as well as the interrelated impacts to other environmental considerations (i.e., groundwater, water quality, fish and fish habitat, etc.). Surface- groundwater fluxes should be explicitly incorporated. Where multiple environmental factors require consideration or when multiple spatial and temporal scales require assessment, a consistent multi-model or integrated modelling approach should be employed.</li> <li>describe the model code and process function;</li> <li>state limitations and assumptions in the modelling approach, including calibration</li> </ul>

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			methods, model validation
			<ul> <li>and accuracy;</li> <li>describe the calibration of the numerical model to baseline hydrologic conditions using stream flow monitoring data.</li> <li>Metrics and graphs describing the quality of the calibration that was achieved must be presented including a discussion of how spatial and temporal variability in</li> </ul>
			<ul> <li>and temporal variability is</li> <li>considered in model</li> <li>calibration;</li> <li>o include a sensitivity analysis</li> </ul>
			of key model outputs to hydrologic properties and climatic parameters such as infiltration parameters; and
			<ul> <li>where the water balance framework will be employed to assess other environmental factors such as water quality or fish and fish habitat, the fitness of the model to evaluate these factors must be described.</li> </ul>
			<ul> <li>using the calibrated water balance framework:</li> </ul>
			<ul> <li>assess the watershed response to prolonged or extreme periods of meteorological and hydrological drought;</li> </ul>
			<ul> <li>assess surface-groundwater interactions in the system; and,</li> </ul>

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			<ul> <li>present the impacts of climate change under baseline conditions (i.e., without the Project)</li> </ul>
DFO-06	Section 8.6.1	DFO requests that requirements related to the 3-dimensional numerical model be refined to ensure the model scope is relevant to fish and fish habitat, and able to predict effects reasonably at the scale of fish and fish habitat, where there is potential interaction with fish and fish habitat.	<ul> <li>present a 3-dimensional numerical groundwater or integrated surface water-groundwater flow model developed for the project area based on the conceptual model of the hydrogeological environment;         <ul> <li>where the model will be employed to assess other environmental factors such as water quality or fish and fish habitat, the fitness of the model to evaluate these factors must be described.</li> <li>using the calibrated numerical groundwater or integrated flow model :                 <ul> <li>provide a baseline groundwater budget which includes:</li> <li>baseflow discharge to wetlands:</li></ul></li></ul></li></ul>
			groundwater interaction in the system; and

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			<ul> <li>present the impacts of climate change under baseline conditions (i.e., without the Project).</li> </ul>
DFO-07	Suggest adding to Section 8.6.1	DFO requires information on sediment transport and hydraulic flow regimes specific to fish and fish habitat in order to assess the potential impacts. Baseline conditions should first be established in order to compare the modelled effects of the Project.	<ul> <li>if applicable, develop a sufficiently complex hydraulic model of baseline conditions to support sediment transport analysis, if not applicable, explain why;</li> <li>if applicable, develop a sufficiently complex hydraulic model to address fish habitat analysis, if not applicable, explain why;</li> </ul>
DFO-08	8.6.2	The additions clarifies the receiver of the changes to water flow (i.e. waterbodies), and the link to surface water management (i.e. use of channels and dykes) that are common elements of mining projects and typically interact with fish and fish habitat.	<ul> <li>The Impact Statement must:</li> <li>describe the effects of the Project on surface and ground water, including effects related to: <ul> <li>Project use of surface water or groundwater resources,</li> <li>changes to water flow in waterbodies or watercourse diversions, including the use of channels and dykes to divert water; and</li> <li>discharge of water, effluent, wastewaters or other substances to the environment;</li> </ul> </li> </ul>
DFO-09	Suggest adding to Section 8.6.2	Changes to sediment transport, thermal regime, impacts of new linear infrastructure crossings, and effects to the watershed are commonly associated with mining projects and have the potential to impact fish and fish habitat given the scale of impacts.	<ul> <li>discuss changes to the sediment transport regime supported by appropriate hydrologic and/or hydraulic modelling;</li> <li>discuss changes to the thermal regime of waterbodies supported by appropriate hydrologic and/or hydrogeologic modelling where</li> </ul>

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			<ul> <li>changes to fish habitat are predicted;</li> <li>discuss the impacts of new linear infrastructure crossings to the stability of the existing system and demonstrate how natural watercourse processes (e.g., long-term erosion and deposition) could potentially impact the new infrastructure and what mitigation measures are being taken to address this;</li> <li>discuss the effect to the watershed of overprinting of surface water</li> </ul>
DFO-10	Section 8.6.2	The additions are important potential changes common to mining projects that can result in effects to fish and fish habitat.	<ul> <li>features by Project infrastructure;</li> <li>quantify the extent of hydrological changes that will result from disturbances to aquifers and surface water features for each phase of the Project, taking into account climate change (see also sections 8.11 Climate change and 14. Effects of the environment on the Project). This includes changes to the quantity or timing of surface flow, surface water-groundwater interactions, water levels, ice thickness or extent, sediment input, and channel regime in watercourses, thermal regimes, and water levels in affected waterbodies;</li> </ul>
DFO-11	Section 8.6.2	The addition of an integrated surface water-groundwater flow model provides an additional option that can better reflect the interplay of ground water and surface water, and any resulting changes on fish and fish habitat.	<ul> <li>DFO suggests the following edits in blue text. The other sub-bullets under the main bullet should remain as is.</li> <li>present an updated 3-dimensional numerical groundwater or integrated surface water-groundwater flow model of the hydrogeological system that incorporates all major project features such as open pits,</li> </ul>

Department – Comment ID (e.g., ECCC-01)	Draft Guidelines Section	Context and Rationale (provide an explanation of your comments)	Recommendation: provide text to be inserted or deleted. Be specific on the location within the draft Guidelines that the text would be added/deleted. underground workings, waste rock piles, tailings management facilities, dewatering wells, and water diversion ditches: • the model should be based on the calibrated model used to describe baseline conditions, and • the use of telescopically refined groundwater flow models model mesh or grid refinement is recommended in the vicinity of open pits and tailings management facilities;
DFO-12		The addition of an integrated surface water-groundwater flow model provides an additional option that can better reflect the interplay of ground water and surface water, and any resulting changes on fish and fish habitat. Additional suggestions are to clarify some of the terms.	DFO suggests the following edits in blue text. The other sub-bullets under the main bullet should remain as is. • using the updated 3-dimensional numerical groundwater or integrated surface water- groundwater flow model: • estimate seasonal changes to surface water and groundwater regimes during the operation, decommissioning, and abandonment phases, including effects of depressurization of the basal aquifer and dewatering <del>water</del> bearing of surficial deposits, effects on baseflow in rivers and streams groundwater- surface water interactions in waterbodies and watercourses, effects on wetlands, effects on potable supplies, and effects on natural flow divides;

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DFO-13	Section 8.8.1	DFO suggests the point be added as the first point in the list of requirements in order to set a clear expectation with respect to appropriate planning and collection of data that allows post- impact comparison and verification. This has been a consistent issue on EAs under CEAA 2012, and appears to continue to be an issue based on review of draft Impact Statements to date. Without a scientifically informed plan, the proponent introduces a high level of uncertainty from baseline through to effects assessment, and post- construction monitoring, which contradicts the intent of the IA and hinders DFO's ability to provide expert advice.	<ul> <li>The Impact Statement must:</li> <li>demonstrate that an appropriate baseline study design was selected to enable the ability to detect changes to fish and fish habitat, with a clear description of assumptions and uncertainties, as guided by the Canadian Science Advisory Secretariat's science advice report entitled "A review of functional monitoring methods to assess mitigation, restoration, and offsetting activities in Canada."</li> </ul>
DFO-14	Section 8.8.1	More detailed information beyond just "size and depths" of waterbodies is required. The additions ensure important information to understand habitat types and morphology is collected.	<ul> <li>prepare a list of all waterbodies and watercourses (permanent and intermittent) that may be directly or indirectly affected by the Project and provide:         <ul> <li>type of waterbody or watercourse;</li> <li>size and depths of the waterbody or watercourse, including channel cross sections, long profiles and/or bathymetric surveys;</li> </ul> </li> </ul>
DFO-15	Section 8.8.1	Appropriate references and baseline pre-disturbance is required to accurately carry out the impact assessment with respect to fish and fish habitat.	<ul> <li>for each potentially affected waterbody or watercourse that has the potential to be frequented by fish, provide the location and area of potential and confirmed fish habitat and a detailed assessment of physical and biological habitat characteristics. Present information as maps using satellite imagery</li> </ul>

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			<ul> <li>overlaid with relevant information and text description, with associated summary tables. Relevant physical and biological habitat characteristics for fish habitat include:         <ul> <li>surface and ground water characteristics requested in Section <u>8.6.1 Baseline</u> <u>Conditions</u>,</li> <li>baseline extent of habitat disturbance and fragmentation (if the study area is impacted by anthropogenic influences and unimpacted reference site may be required to establish baseline conditions);</li> </ul> </li> </ul>
DFO-16	Section 8.8.1	Additional information on substrate informs potential habitat use, in addition to potential effects on fish habitat should there be effects associated with flow, sediment supply, and sediment transport, which there commonly are with mining projects due to landscape change and scale.	<ul> <li>substrate type, substrate distribution and transport characteristics, aquatic vegetation, riparian vegetation, bank stability, light penetration, presence of woody debris, presence of beaver dams, stream segment type (riffle, run, pool) and Strahler stream order, natural or anthropogenic barriers to fish passage, and geomorphological features and processes;</li> </ul>
DFO-17	Section 8.8.2	DFO is of the opinion that this statement should provide more specific details regarding the effects of changes in groundwater and surface water in regards to the alteration of sediment transport and how it links to fish habitat. This statement should have further clarification regarding	The following suggestions all fall under the primary bullet starting with "For each waterbody" Those not updated or referenced should remain as is. For each waterbody and watercourse affected by the Project that has the potential to be frequented by fish (directly or indirectly), the following

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		habitat connectivity. Refugia should also not be limited to winter conditions as many fish species will seek cooler water conditions during summer periods. DFO requests that the Proponent discuss the Project's effects in regards to changes to the productivity, food sources, and food web/trophic level shifts. DFO suggest further clarification regarding linear project components and requires proponents to discuss fish passage in relation to these crossings	<ul> <li>must be documented and considered in the determination of effects:</li> <li>changes in groundwater and surface water conditions, and their effects on geomorphological and changes and their effects on hydrodynamic conditions, and aquatic habitats (e.g. altering sediment transport dynamic and modification of substrates characteristics, dynamic imbalance, long-term bank instability, silting of spawning grounds), including direct and indirect effects from habitat fragmentation;</li> <li>changes in groundwater and surface water conditions and their effects on aquatic habitat and life cycle activities (e.g. reproduction rearing, feeding, movements, migrations and habitat connectivity, summer and winter refuge) and any changes to aquatic invertebrate communities, including any flow reductions and lowering of water levels in potentially affected watercourses and waterbodies such as Unnamed Watercourse 1, Unnamed Watercourse 6A, Rice Lake (Unnamed Waterbody 6), Unnamed Watercourse 6, Dixie Creek, Chukuni River, and Pakwash Lake that result from loss of drainage basin or groundwater drawdown;</li> <li>changes to primary and secondary productivity, food sources, potential imbalances in the food web and trophic levels;</li> <li>effects on fish populations as a result of increased changes in access or traffic to the area <del>and</del> (e.g.,</li> </ul>

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			increased access to fishing) caused by the Project;
			<ul> <li>for linear project components, describe and justify watercourse- crossing techniques to be used and the criteria for determining the techniques proposed for each watercourse crossing; and:</li> </ul>
			<ul> <li>describe how the watercourse crossings consider long-term geomorphological processes (e.g., erosion and deposition); and</li> </ul>
			<ul> <li>provide evidence as to how the watercourse crossing will provide fish passage</li> </ul>
DFO-18	Section 8.8.2	DFO requires the identification of any anticipated death of fish by means other than fishing.	All other sub-bullets below "The Impact Statement must:" should remain the same.
			<ul> <li>The Impact Statement must:</li> <li>delineate anticipated death of fish by means other than fish;</li> </ul>
DFO-19	Section 8.8.2	DFO requests to include a statement to assess potential impacts on Indigenous rights and harvest opportunities in regards to fish.	<ul> <li>potential impacts on Indigenous rights and harvest opportunities for species identified as being important to Indigenous and local communities such as Walleye, Northern Pike, and Lake Sturgeon;</li> </ul>
DFO-20	Section 8.8.2	DFO suggests reorganizing the statements so that all statements relating to Indigenous Peoples are found in one location in order to clarify the information request.	The statements regarding potential contaminant levels and tolerance thresholds with focus on Indigenous Peoples should be moved to be sub- bullets to the recommended statement in comment ID DFO-19. On its own, the statement about tolerance thresholds is vague and unclear.

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DFO-21	Section 8.8.2	Changes in fish habitat, among other factors, can drive changes in fish populations. Understanding the potential for habitat changes to result in population effects as a result of the Project is key in ensuring mitigation (including offsetting) is adequate to balance the impacts of the Project. It is also key for provincial fisheries managers to understand, as the authority for managing recreational fisheries in Ontario.	<ul> <li>potential effects on fish populations, including provincially listed aquatic species at risk, and sources of mortality, including, but not limited to:         <ul> <li>potential losses of individuals, including changes in abundance, and the relationship to population density and the resilience of populations; and</li> <li>any modification in migration, local movements (e.g., upstream and downstream migration, and lateral movements), accessibility or use of habitat, changes in distribution, or stranding of fish, following the construction, operation or decommissioning of works (e.g, physical, chemical and hydraulic barriers).</li> </ul> </li> </ul>
DFO-22	Section 8.8.2	The province of Ontario sets local fisheries management objectives as the fisheries managers. DFO relies on the province's Fish Management Objectives to understand the sensitivity of particular populations, threats, and restoration needs in decision- making. Understanding how the Project will interact with local Fish Management Objectives ensures the effects of the Project are considered in the context of the local fisheries priorities and the provincial regulatory regime.	<ul> <li>effects on any fish populations ability to meet local Fish Management Objectives;</li> </ul>
DFO-23	Section 8.8.3	DFO requires information on the measures that will be taken to prevent the creation of fish barriers, as this will constitute key mitigation for effects of the project. Effects of barriers that	<ul> <li>measures to prevent the creation of fish passage barriers as a result of the Project;</li> </ul>

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		cannot be avoided or mitigated	
		must be considered as residual	
		effects, and the effect on fish	
		populations quantified, to be	
		considered in decision-making.	

Insert as many rows as applicable