First Mining Gold (FMG) Response to the Impact Assessment Agency of Canada Comments on the Springpole Gold Project Environmental Impact Statement/ Environmental Assessment Received on February 10, 2025

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Fish and Fish Habitat (FH) *Includes changes to the environment1 (Water Quality (WQl)) that may have pathways of effects to fish and fish habitat*							
WQl-01	5(1)(a)(i) Fish and Fish Habitat	Groundwater and Surface Water Quality	Section 3.2 - Project Activities Section 7.1.2 - Geology and Geochemistry Section 7.1.4 - Riparian, Wetland and Terrestrial Environments Section 7.1.5 - Groundwater and Surface Water Section 7.2 - Predicted Changes to the Physical Environment Section 7.3 - Predicted Effects on Valued Components	Appendix E (Revised Mine Waste Management Alternatives) Appendix K-1.1 (Static Testing Baseline Report 2021) Appendix K-1.2 (Tailings ML/ARD Assessment – Static Testing Results) Appendix K-1.3 (Kinetic Geochemistry Report) Appendix K-1.4 (Overburden Fish Habitat Area Geochemistry Memo)	IAAC acknowledges that the Proponent has selected the proposed co- disposal facility (CDF) location and design to take advantage of hard bedrock and minimize the project footprint, while considering its close proximity to Springpole Lake and Birch Lake. IAAC and Federal Authorities have remaining concerns that, due to its location, the CDF may result in noncompliance with the *Fisheries Act* from uncaptured seepage and may present a risk of toxicity to aquatic life in the surrounding water bodies. IAAC understands that once the Project has been constructed and materials are deposited to the CDF, there are limited options to adapt the management of seepage to achieve compliance. IAAC would like to better understand the Proponent's strategies and modelling assumptions in this regard. Concerns around seepage at the CDF location were raised during the review of the draft EIS (November 2022).[2] Design changes were brought forward to IAAC and federal authorities in July 2023. In an August 2023 meeting, federal authorities raised several questions which the Proponent noted would be addressed in the final EIS. IAAC requested the Proponent's assistance to locate certain	IAAC requests a technical discussion between the Proponent, the Province of Ontario, and relevant federal authorities to better understand from the Proponent: • how the Project will be designed to ensure compliance with the Fisheries Act; • how the Proponent intends to meet any permitting standards to be set out by the province for groundwater and surface water quality (at a high-level, recognizing permitting- level design detail may not be available); and • potential impacts to fish and fish habitat in relation to surface water quality. Following technical discussions with the Province of Ontario, and any associated changes made to the supporting assessments, provide an update on the potential adverse effects on fish and fish habitat as a result of seepage bypass.	As requested, FMG and WSP met with IAAC and representatives of the federal and provincial agencies on February 25, 2025. A supplemental technical memorandum will be prepared if needed upon receipt of MECP surface water quality comments. However, the meeting held provided information to clarify: • How the Project is designed to meet or exceed the requirements of the *Fisheries Act*; Operation the CDF will not result toxicity to aquatic life in waterbodies. • How the Project will meet or exceed permitting standards set out by the province for CDF engineering and water quality; and • How there are no potential impacts to fish and fish habitat in relation to surface water quality as a result of the Project. • How the CDF is designed to meet or exceed all applicable standards, and in combination with the CDF location foundation conditions the design results in by far the least amount of bypass seepage compared to all other similar and recently approved mines in Ontario (see attachment WQI-01 for comparison). The information presented during the meeting included the following topics and is described further below:

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			Section 7.4 - Mitigation Measures	Appendix K-2 (Mine Site Water Quality Modelling) Appendix L-2 (Hydrogeological Modelling Report)	missing information in the final EIS by email on December 12, 2024. The Proponent provided additional information on January 17, 2025, noting that additional memos were being drafted to provide updated information on the CDF. IAAC and Federal Authorities reviewed the EIS closely and, given the potential volume of uncaptured seepage, have identified the following areas for which greater confidence is required to validate the assessment of potential effects to fish and fish habitat related to surface water quality: • hydrogeological modelling, including the assumptions made within the hydrogeology model; • the potential for the proposed CDF quarry to affect the modelled hydrogeological regime; • predicted volume and rate of seepage bypass; and opportunities to further reduce bypass (such as deeper ditches); • predicted changes to surface water quality and the potential for acute fish toxicity where seepage will enter surrounding water bodies (meaning, closer to the seepage face than current assessment nodes); • assumptions made within the site water quality model; • site geochemical characterization program and the geochemical source terms used in models;		1. *Hydrogeological modelling, including the assumptions made within the hydrogeology model.* As is standard for mining EAs, the hydrogeology model was used to determine the amount of seepage that may bypass the collection ditches. The hydrogeology model is presented in detail in Appendix L-2 of the EIS/EA. The model uses industry standard methods consistent with other mining EAs, and site-specific data collected from the Project site as detailed in the baseline hydrogeology report (Appendix L-1). Groundwater data collected as part of baseline characterization activities was used to support the development of a conceptual hydrogeological model, which formed the basis for the construction of the numerical groundwater model. The existing baseline data was then used to calibrate the numerical model and predict the changes in groundwater due to the Project. Supplemental field investigation work, as requested by MECP, was completed in the fall of 2024 and a report on the results of this investigation is in progress; however the results are as expected and do not change the understanding of groundwater from the baseline results used in the EIS/EA. The model results show that only minor portion of the seepage may bypass the perimeter ditches, which is consistent with the low hydraulic conductivity of the bedrock, and the position of the collection ditches at a low elevation relative to the CDF. In accordance with the CDF design, over 90% of seepage reports to the engineered collection ditches, which are generally located downslope of the CDF. Very little water is able to be driven deeper into the competent bedrock. The

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					• selenium in the NAG tailings used to manage PAG mine rock; and • the site water balance and feasibility of maintaining saturated conditions in the CDF south cell during prolonged periods of dry weather conditions. IAAC understands the Proponent has discussions underway with the Ontario Ministry of the Environment, Conservation and Parks (MECP), regarding surface water and groundwater management and related provincial permitting. IAAC also understands that a technical memo with updated information related to seepage predictions is pending. The outcomes of these discussions are of particular interest to IAAC, ECCC and DFO due to potential pathways of effects to fish and fish habitat, an area of federal responsibility. IAAC has identified several detailed information requirements about groundwater and surface water management, in relation to fish, that it will reconsider and provide once informed by the pending technical memo and updates from the Proponent's discussions with MECP. The intention is to not confuse things or hinder progress underway to resolve water-related issues. IAAC has requested a technical discussion with the Proponent and the province on this topic.		key considerations in the numerical groundwater model, with respect to the assessment of potential seepage includes: • Perimeter collection system is assumed as a constant 1 metre depth for groundwater modelling below ground level, which is generally lower than the elevation of the base of the CDF due to the position of the ditches downslope of the CDF. Designs for the perimeter collection system, however, feature a system of interconnected ditches of approximately 1 metre depth and collection ponds/sumps with the sumps corresponding to local topographic lows. Collection sumps are designed for storage 100-year precipitation events and, therefore, generally have specified depths lower than the ditches. As such, groundwater model assumptions for perimeter collection ditch depths are considered conservative, as operating levels at the collection sumps will be deeper than modelled. Further, potential bypass seepages will tend to be focused toward topographic lows, at the locations of the collection sumps which are lower than the ditches. • Simulation of an embankment liner of the south cell perimeter dam (i.e., upstream side faces of the southern, western, and eastern segments). The sensitivity of simulated seepages from the CDF to the performance of the liner is presented in Section 7 of Appendix L-2. Sensitivity analysis demonstrated that bypass seepages are negligibly sensitive to

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							the performance of the liner, as seepages discharge to the perimeter collection system via the perimeter dams. It's worth noting that, for the sake of conservatism in the approach of groundwater modelling for the Project, sensitivity variants were asymmetrically employed, whereby only those that were expected to produce negative outcomes with respect to seepage were simulated. It is just as likely, however, that conditions exist that would otherwise yield improved results such as natural biophysical attenuation processes. 2. *The potential for the proposed CDF quarry to affect the modelled hydrogeological regime.* The proposed CDF quarry is located within the central portion of the CDF, in an area where there is currently an exposed bedrock outcrop. The depth of the proposed quarry is nominally 30 m and sufficiently located away from the proposed location of the perimeter dams. As a result, the potential for the development of the CDF quarry will not affect the hydrological conditions within the CDF. Visual inspection of the quarry and grouting of any fractures will be implemented as needed per standard engineering practice prior to any placement of materials. 3. *Predicted volume and rate of seepage bypass; and opportunities to further reduce bypass (such as deeper ditches).* Over 90% of the seepage from the CDF will be captured with the perimeter ditching and managed within the site water management system. The

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							volume of seepage is substantially less than other similar and recently approved mining projects in Ontario (Attached comparison slide). Based on conservative assumptions in the hydrogeological model, the predicted volume of fugitive seepage that will bypass the perimeter ditching is described in Section 6.5.6.2 and shown in Table 6.5-9 of the EIS/EA, with detailed analysis being provided in Appendix L-2. Further discussion of bypass seepage is also provided in the above provided responses. Limited bypass seepage will tend to originate from the centre line of the CDF, as seepage originating from closer to the perimeter of the CDF will discharge at the perimeter collection ditches. The limited bypass seepage would need to travel several hundred metres through the subsurface before reaching a surface water receiver and would be subject to natural attenuation process along the groundwater flow path, which conservatively have not been accounted for in the modelling. During site preparation for the construction of the CDF, the foundation conditions will be exposed and visually inspected. Where necessary, fractures will be sealed with standard grouting practices to maintain hydraulic conductivity similar to the adjoining area. The perimeter ditching will be constructed to collect and managed seepage during operations. Monitoring for seepage will occur during operations, around the perimeter of the CDF and where volumes are demonstrated to be in excess of predicted volumes, further proven contingency measures would be evaluated to mitigate the differences, including

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							measures such as pump-back wells, or other suitable measures. 4. *Predicted changes to surface water quality and the potential for acute fish toxicity where seepage will enter surrounding water bodies (meaning, closer to the seepage face than current assessment nodes.* There is no scenario where there would be fish toxicity from water quality in the vicinity of the CDF. Predicted changes in surface water quality are minor and are described in detail in Appendix N-2 and Section 6.6 (Birch Lake) and Section 6.7 (Springpole Lake, North Basin) of the EIS/EA. The predictions are based on the results of mass balance model (GoldSim), and industry and professional practice standard methods used for mining projects in Ontario and Canada. The model relies on the results of an extensive baseline water quality data set, and the results of predictive modelling for mine site water balance (Appendix M-2), the receiver water balance (Appendix M-3), the mine site water quality model (Appendix K-2) and the hydrogeological model (Appendix L-2). These demonstrate that water quality meets the receiver water quality objectives identified in the EIS/EA. Each Project component is modeled separately, as shown as individual 'cells' (or model nodes) within GoldSim and are representative of an array of locations around the CDF and gradient from the CDF. The nodes are aligned with the hydrological catchments for the Project site as well as the anticipated pathways of interaction of the Project with the receiving environment. For the receiving environment, individual cells are modeled across

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							timesteps and the amount of each parameter that stays in a cell is mixed with the water inflowing to that cell. This allows the model to calculate the concentration of water quality parameters over time. The modeling inputs and conservative assumptions include: • For the EA, preliminary effluent limits were developed following MECP Policy B-1-5 (MECP, July 2021). As per this policy, effluent limits must be set to meet Water Quality Guidelines for the Protection of Aquatic Life (WQG PAL; Table 6.6-5 in the EIS/EA) in the receiving environment, assuming the maximum required discharge volume theoretically occurs during a 7Q20 low-flow event. This is a very conservative approach; the 7Q20 represents the lowest average streamflow over seven consecutive days, occurring once every 20 years. The maximum discharge rate is required during extreme wet conditions. • Final effluent limits, as well as the integration of WQG PAL, will be determined during the provincial permitting process, in accordance with established regulatory frameworks. This process, typically outlined through the Environmental Compliance Approval (ECA) and Industrial Sewage Works (ISW) regulations, is standard practice for ensuring that the Project's operations comply with water quality standards. • The provincial permitting process will also set triggers/thresholds for adaptative management, as

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							applicable, based on ongoing monitoring data, as is standard practice. • Predictions for contact water and influent quality conservatively assume geochemical loadings from key mine features at the Project's largest extent (maximum build-out). • Predictions for seepage quality conservatively assume geochemical loadings from key mine features at the Project's largest extent (maximum build-out) and that no attenuation (reduction) of water quality parameters occurs along the subsurface flow path. Based on the model results, the predicted water quality at all assessment nodes are below WQG PAL for all modeled parameters. *5. Conservative assumptions made within the site water quality model.* The Mine Site Water Quality Model is presented in Appendix K-2. A detailed description of modelling inputs is provided in Section 3.0, including the geochemical sources terms in Section 3.4 and solubility controls in Section 3.5. As noted during the February 25, 2025 meeting, NRCan requested a separate discussion to review specific aspects of these assumptions, and indicated they would provide specific areas for discussion prior to the meeting. *6. Site geochemical characterization program and the geochemical source terms used in models.* An overview of the extensive geochemical program for the Project was provided during the meeting, and is

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							summarized from the detailed reports included with the EIS/EA, including: • Static Geochemical Testing Baseline Report (Appendix K-1.1) • Tailings ML/ARD Assessment - Static Testing Results (Appendix K-1.2) • Baseline Kinetic Geochemical Testing Report – Kinetic Testing Update Q4 2023 (Appendix K-1.3) • Static Geochemical Characterization of Overburden and the Fish Habitat Development Area (Appendix K-1.4) • Springpole Lake Sediment – Static Testing Results (Appendix K-1.5) These geochemical programs for the Project were first initiated in 2012 and have continued since that time. The programs have developed progressively as the Project advanced and are comprehensive, which has resulted in a large, detailed baseline geochemical dataset for the Project. • Mine rock and ore-grade materials • Tailings and simulated process water • Overburden (soil and lake sediment) The overall objective of the programs are to establish the necessary data to support mine planning, mine rock management decisions, and obtaining environmental approvals for the Project. The approach and methods for the program and data

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							interpretation based on requirements of the *Ontario Mining Act*, namely guidance from MEND (2009). The development of source terms to support water quality modelling is a key outcome of the baseline data collection. Source terms for the water quality modelling were based on humidity cell test results and other site-specific test results (e.g., simulated tailings process water). The results of test programs continue to be supportive of the model inputs and assumptions. Field bin data also aligns with laboratory studies which further builds confidence in the understanding geochemical parameters. Detailed information on source terms and model assumptions can be found in Appendix K-2. Further details on the geochemistry program are provided in the attached presentation. *7. Selenium in the NAG tailings used to manage PAG mine rock.* The water quality guideline for the protection of aquatic life (WQG-PAL) for selenium is 0.1 mg/L, based on the Provincial Water Quality Objectives. The predicted water quality value for selenium at all assessment nodes is below the WQG-PAL during all phases under both base case and conservative conditions. 8. The site water balance and feasibility of maintaining saturated conditions in the CDF south cell during prolonged periods of dry weather conditions. During operations and closure, the CDF has been designed such that the north cell will direct water

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							towards the south cell to maintain saturated conditions in the south cell. This is supported by the results of the mine site water balance (Appendix M-2). The mine site water balance including an analysis of various scenarios, including a 1:100 extreme dry year.
FH-01	5(1)(a)(i) Fish and Fish Habitat	Fish and Fish Habitat - General	Sections 7.3.1; 7.4	Appendix F	Offsetting – General Although the Proponent has presented a list of potential options to offset the impacts to fish and fish habitat, the projects accounting for the greatest proportion of the total offset area (see FH-03 and FH-04) are those that DFO would not accept due to their uncertainty in terms of success, inaccurate accounting, and long time frames to completion. Furthermore, they do not meet the EIS guidelines (Section 7.4): 'Measures will be specific, achievable, measurable and verifiable, and described in a manner that avoids ambiguity in intent or commitment, interpretation and implementation.' To provide impact assessment advice to decision-makers about the residual effects on fish, IAAC must be confident that the offsetting concepts are feasible and agreeable, with consideration of the Fisheries Act authorization as a means for refining details. Other potential offsetting options that are in line with DFO's offsetting policy require greater confidence in the feasibility of the works (South Bay Mine rehabilitation project (FH-02, Coarse Wood Structure Shoreline Enhancement, and Spawning Shoals) to be	1. Remove the projects listed in FH-03 and FH- 04 from the accounting of offset habitat in future revisions of the Fish Habitat Offset Compensation Plan (FHOCP). 2. Revisit the FHOCP and ensure that the remaining projects (e.g., South Bay Mine rehabilitation project [see FH-02], Coarse Wood Structure Shoreline Enhancement, and Spawning Shoals) have sufficient detail (as described in Section 7.4 of the EIS guidelines) including project execution, timelines, success criteria and monitoring/ contingency to meet the terms of the EIS guidelines and offset for the impact of the time lag associated with the Project. If insufficient, the Proponent should provide additional alternative offsetting projects (preferably multiple options) that could meet DFO's policy with future refinement.	1. The reclaimed open pit basin and Stage 2 of the Lake Sturgeon research program has been removed from Table 9 1: Mitigation Balance Summary of the FHOCP as requested. Attachment IAACFH01 has been prepared and attached to present a revised habitat impact and mitigation balance. Note that the impact quantities have been adjusted to reflect the determination that the open pit basin will be mitigated at closure, and the temporary loss of fish production from two valued species (Walleye and Lake Trout) has been included as a metric to assess impacts to the basin associated with the Project. 2. Attachment IAAC-FH-01 provides revised habitat impact, mitigation and offsetting balances that demonstrate sufficient measures can be implemented to offset impacts to fish habitat from the Project. Additional information supporting the South Bay Mine reclamation as an offsetting measure is provided in our response to FH-02 and Attachment IAAC-FH-02. The principles and proven ability of the remaining proposed measures (coarse wood structure and spawning shoals are considered well documented in existing literature, and we propose to provide additional

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					accepted by DFO as sufficient offsetting measures. With the options and level of detail presented to date, DFO does not have confidence that the impacts to fish habitat could be offset.		documentation and details pending further discussion with DFO to clarify if needed.
FH-02	5(1)(a)(i) Fish and Fish Habitat	Fish and Fish Habitat - General	Sections 7.3.1; 7.4	Appendix F, Section 8, Pages 8-1 to 8-10	<u>Offsetting - South Bay Mine rehabilitation project</u> The proposed rehabilitation of the South Bay Mine, in partnership with the Ontario Ministry of Mines (MINES), is in line with DFO's '*Policy for applying measures to offset adverse effects on fish and fish habitat*' and would be a high priority for DFO in the list of proposed offsets. However, DFO requires greater confidence in the feasibility of the works and further detail of any arrangements made with MINES in order the meet the requirements in the EIS guidelines. As described in the Fish Habitat Offset Compensation Plan, DFO understands the works involve isolating the tailings area, but objectives with respect to benefiting fish and fish habitat are not clear. Appendix F, page 8-7 references a Memorandum of Understanding (MOU) between the Proponent and MINES; however, this document has not been included.	1. Provide more detailed information on the proposed reclamation works at South Bay Mine, including the works required to reach the end goal of restored fish communities in Boomerang, Amanda and Mud Lakes. 2. Clarify the objectives of the South Bay Mine reclamation efforts with respect to benefiting fish and fish habitat. 3. Provide detailed information regarding the arrangements made with MINES for the South Bay Mine reclamation, discussing the proportion and types of works the Proponent will be contributing to, and the timeline and monitoring planned for the area. 4. Provide the MOU between the Proponent and MINES that is referenced in Appendix F, page 8-7, if not confidential.	1. Reclamation of the South Bay Mine and the fisheries objectives include working with MINES to cap the existing waste areas in place to achieve chemical and physical stability and install seepage barriers if necessary to control and treat groundwater moving through the area. These measures will significantly improve water quality and associated conditions for fish and fish habitat in multiple area lakes. Additional detail for the proposed South Bay Mine reclamation is provided in Attachment IAAC-FH-02. 2. The goals and objectives of the South Bay Mine reclamation are to promote the biological recovery of three lakes (Armanda, Mud and Boomerang) such that they are capable of supporting fish communities. An additional goal is to reduce the ongoing historical impacts to the nearshore areas of Confederation Lake documented in Armanda Bay, Mill Bay and Boomerang Bay. 3. FMG is actively advancing the process of joint reclamation of the South Bay Mine with the Ontario Ministry of MINES. An application for Voluntary Rehabilitation of Mine Hazards (Form 0322E (2022/11) has been submitted to the Director of Mine Rehabilitation (Director) of the Ontario Ministry of MINES (MINES); clearly defining the work packages and support to be provided by FMG.

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							4. Discussions with MINES were ongoing at the time the FHOCP was in preparation. The resulting form of agreement is a “Letter of support” from MINES which has been provided in Attachment IAAC-FH-02
FH-03	5(1)(a)(i) Fish and Fish Habitat	Fish and Fish Habitat - General	Sections 7.3.1;7.4	Appendix F, Section 8, Pages 8-1 to 8-10	Offsetting - Reclaimed open basin The EIS included the restored open pit basin (and therefore the existing fish habitat in NB-01 – the basin that will be dewatered) as habitat in the offsetting calculations. As previously discussed with the Proponent, the reclaimed open pit basin will not be considered surplus offsetting for this Project. NB-01 already supports a healthy lake trout population and the restoration of that habitat after the life of the mine is considered mitigation and not offsetting. If the open pit basin is reasonably restored to near NB-1’s original capacity as proposed, then the Proponent would be responsible to offset for the amount of time the habitat is lost due to mining activities (including any potential mine expansions). This is assuming there are no long-term impacts on fish populations (specifically lake trout) in the remainder of Springpole lake, as predicted	1. Remove from the offset calculation any habitat that was already present in Springpole Lake (e.g., NB-01). This means remove the restored open pit basin. 2. In Section 6.10 of the EIS, the Proponent states that non-schooling fish tend to occupy depths of 18 to 25 m (defined as pelagic habitat). Provide the proportion of 18 to 25 m habitat within NB-01 compared to the remainder of 18 to 25 m habitat in Springpole Lake and provide the proportion of 18 to 25 m habitat that will be created after the pit has been restored compared to the remainder of 18 to 25 m habitat in Springpole Lake. If the quantity of 18 to 25 m habitat is higher after restoration, some credit may be considered offsetting for the surplus lake trout habitat, assuming the remainder of the pit is restored as currently proposed.	1. As requested, we have removed the existing habitat within the reclaimed basin from the offset calculations. A revised habitat balance is provided in Attachment IAAC-FH-01. 2. The analysis of existing and proposed reclaimed areas shows that there will be an increase in in the volume of lake between 18 m and 25 m in the open pit basin from 2.33 Mm^3 to 9.75 Mm^3 or a 318% increase. On an aerial basis there will be an increase in the area of the 18 m depth contour from 47.8 ha to 145.9 ha and in increase in the 25 m depth contour area from 21.9 ha to 134.8 ha, or a 205% and 516% increase respectively. The reclaimed open pit basin will also result in an increases in the total Springpole Lake volume between 18 m to 25 m from 9.30 Mm^3 to 16.72 Mm^3 or an 80% increase; with the 18 m and 25 m depth contours in the lake increasing in area by 44% and 139% respectively. These increases in the habitat shown to support pelagic species provide confidence that the reclaimed basin will effectively mitigate the existing conditions with a surplus that can be considered for additional offsetting credit.

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FH-04	5(1)(a)(i) Fish and Fish Habitat	Fish and Fish Habitat - General	Sections 7.3.1; 7.4	Appendix F	Offsetting – LKST Restorative Stocking DFO supports the inclusion of the Stage 1 Research Program to investigate lake sturgeon presence and distribution in the Birch and Cat River systems as it meets the criteria set out in DFO's offsetting policy for complementary measures. However, DFO does not support the Stage 2 Population Support component of the FHOCP. Stage 2 relies on the findings in Stage 1 and has too high a level of uncertainty in terms of feasibility, success and the ability to monitor success. DFO cannot accept allocating any offsetting, especially a large proportion (200 ha) of offset habitat, to a potential future project with no understanding of its feasibility. Should the results of the complementary measures proposal indicate a path forward to recovery of lake sturgeon through restorative stocking, DFO may consider the offsetting viable for future project proposals.	Remove Stage 2 of the lake sturgeon research program from the accounting of offset habitat in future revisions of the FHOCP.	Stage two of the Lake Sturgeon research program has been removed from the habitat offsetting shown in Table 9-1 of the offset plan. The resulting habitat balance is provided in Attachment IAAC-FH-01.
FH-05	5(1)(a)(i) Fish and Fish Habitat	Fish and Fish Habitat - General	Sections 7.1.5, 7.3.1	Section 2.2 - Ambient and Effluent Discharge Flow Rates. Pg. 2-2 Table 3-1. Water Quality Model Nodes. Pg.3-13 Figure 3-1. Water Quality	Pit refilling rates and timing of NB-1 habitat restoration (duration of effect of Springpole habitat loss on lake trout) The proposed de-watering of the open pit basin is summarized in Section 5.0 – Descriptions of Proposed Works, Undertaking or Activity Likely to Affect Fish and Fish Habitat of Appendix F, which includes an evaluation of indirect effects from potential changes in flow and surface water elevation. However, rewatering the open pit basin is not	Provide a summary of the direct and indirect effects of refilling the open pit basin in Section 5.0 of the FHCOP. The following concerns should be addressed: 1. Uncertainties in predictions for the length of time required to refill the pit and meet water quality requirements to reconnect the basin, specifically addressing assumptions in the surface water models related to dry climate conditions.	1. We have a high confidence in the modeled receiver water balance document Appendix M-3 of the final EIS/EA, and the data used in predicting the time to fill the open pit basin. The predicted range of 3.3 to 6.3 years fill time accounting for wet and dry years is relatively small compared to the base case average value of 4.7 years, particularly when considering the project timeline from construction to refilling of the pit which spans 15+ years. The final approved fish habitat offset and compensation plan will account for the predicted time to refill the basin.

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				Model Nodes. Pg. 3-22 Section 5.0; Appendix F Appendix N-2 (Surface Water Quality Modelling Report) Attachment A - Treated Effluent Discharge Mixing Study	considered in the same section despite the amount of time required to re-fill the basin ranging from 2.9 to 6.3 years under different flow condition scenarios. The length of time required to re-water the open pit basin is an impact to fish and fish habitat in the form of a time lag and any predictions associated with flow changes during the re-filling phase of the Project need to be considered in the accounting of impacts to fish and fish habitat. IAAC has questions regarding assumptions and parameters used in the modelling of surface water flows under dry climate conditions and flows during pit refilling that could result in reduced volume in Springpole Lake. IAAC acknowledges that management of surface water quantity is within the jurisdiction of MECP and looks forward to working with the Province of Ontario and the Proponent to address these questions. A reduced volume in Springpole Lake during the decommissioning phase could lead to slower pit refilling and uncertainty in the time required to re-fill the basin. Additionally, changes to hydrology and the resultant impacts to water quality parameters could result in delays for reconnecting the open pit basin to Springpole Lake. In the EIS, dry climate conditions were evaluated during the operational phase by assuming one dry year (1:100 return period)	2. How water withdrawal (e.g., to maintain continuous water coverage in the CDF south cell) will affect the remainder of Springpole Lake and potentially affect time to rewater the open pit. 3. How any additional time lag will impact the ability of fish to access the restored basin and be accounted for in offsetting. An updated, conservative range of years to re-fill, and an approach to incorporating the time lag into the offsetting plan would be acceptable at this stage. For example, the proponent may consider proposing a range of offsetting ratios based on years of refilling and potential delays associated with meeting water quality requirements. 4. Uncertainties in achieving water quality standards (federally and provincially) in the refilled basin that may limit or negate the Proponent's ability to reconnect the open pit basin at all.	2. There is no proposed scenario where water would be taken from Springpole Lake to maintain a water cover on the CDF. During operations, any fresh water taking potentially needed for the project would be withdrawn from Birch Lake as described in the Mine Site Water Balance Appendix M-2 of the final EIS/EA. 3. We are confident in the time to reclaim the open pit basin as per our response above. However, as per our response to FH-01 and Attachment IAAC-FH-01, the reclaimed open pit basin will be considered mitigation for the temporary isolation of the open pit basin during mine life. The impact of the open pit basin isolation has been calculated as the loss of fish productivity for the duration of the basin isolation. As shown in Attachment IAAC-FH-01, the reclaimed basin is predicted to produce an increased number of fish and biomass than the existing basin. To that end, a delay in connecting the reclaimed basin would extend the duration to achieving a net balance, but the net balance will still be achieved. 4. A detailed open pit basin water quality model is provided in Appendix N-3 of the final EIS/EA. The model predicts compliance with the water quality guidelines and the ability to reconnect the open pit basin with the main lake when filling is complete. We note that the model has been applied on numerous other similar projects.

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					followed by nine average years. ECCC noted there may be some uncertainty in the site water balance of relevance to fish and fish habitat and that evaluating the water balance under more extreme conditions (considering several years drier than average) may reduce uncertainty in the predicted time required to refill the open pit. Further, if water quality requirements cannot be met that would allow the open pit basin to be re-watered, the removal of the north basin would become a permanent impact to fish habitat that is not currently accounted for in the offset plan. This represents significant uncertainty in understanding the extent of effects, and the ability of the Proponent to mitigate those effects.		
Migratory Birds (Bir)							
Bir-01	5(1)(a)(iii) Migratory Birds	Migratory Birds and their Habitat	Section 7.3.2-Migratory birds	Section 9.2.6 - Potential for Interactions between Wildlife and Water Management System. Pg 9-3	IAAC requested clarification regarding the mitigation measures (e.g., features to prevent birds from using the water management facility) that would reduce the possibility of migratory birds, species at risk and other wildlife using any area where water quality is expected to exceed quality thresholds. In Appendix C-1, row IAAC-Ter-006, the Proponent notes, "*a visual monitoring program will be implemented during operations and further adaptive management measures may be implemented if required, such as deterrents.*"	1. Confirm the intent to implement measures to prevent migratory birds from using or frequenting areas where water quality is expected to exceed thresholds, through monitoring of bird use and, when necessary, implementation of deterrent measures. 2. Confirm the intent to develop the water quality objectives using an ecological risk-based approach in consultation with Indigenous communities and relevant authorities.	1. It is important to note that the CDF and water management ponds will not provide a food source for migratory birds and there is an abundance of more suitable waterbodies in the area that would be preferentially used by migratory birds. Wildlife monitoring will occur, and adaptive management measures implemented, as required at the CDF and water storage ponds that are operational. Measures that would be taken include: • Monitoring water quality to verify that it does not pose a short term ecological health risk to migratory birds.

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
					Section 6.12.6.3, notes: "*Bird deterrents (e.g., cannons, bangers) may be used around the ponds prior to nesting periods (zone C5: late April to late August) and during the northern and southern migration periods to deter bird nesting activity. Monitoring would occur regularly to evaluate the effectiveness of deterrents, and adaptive management would be applied as necessary.*" The EIS also states (Section 9.2.6) "*The use of deterrents to minimize the potential for interactions between wildlife and birds with the water management treatment system [h]as been included in Section 9.10.*"; however there does not seem to be any information on deterrents and their use in section 9.10. IAAC considers the monitoring and, when necessary, mitigation through deterrence measures to be a key measure for managing potential effects to birds, including those birds of importance to Indigenous peoples. IAAC is seeking more certainty in proponent intentions to be confident in our advice to decision-makers about how the effects will be managed.		• Use of air horns, bangers and/or automated auditory deterrents at certain times of the year (e.g., spring) and for certain durations (e.g., one month); • Installation of site-specific visual deterrents (e.g., posts with predator decoys, reflectors strung along or over sections of the pond); and/or • Strategic placement of fences or barriers along sections of the CDF will be considered. Water quality monitoring results will be used to further assess risk to wildlife and inform the need for adaptive measures. 2. Water quality thresholds for the implementation of migratory bird detergents using an ecological risk-based approach will be developed as part of the provincial permitting process in consultation with Indigenous communities and relevant authorities.
Bir-02	5(1)(a)(iii) Migratory Birds	Migratory Birds and their Habitat	Section 7.3.2 - Migratory birds Section 7.3.3- Species at risk	Section 6.16.3 - Identification of Potential Effect Pathways. Pg. 6.16-18	The EIS Guidelines (Section 7.3.2) states that the Proponent should characterize the Project effects and associated mitigation measures related to "*collision risk of migratory birds with any project infrastructure and vehicles*" The EIS states: "*The operation and maintenance of the transmission line interacts with [species at risk (SAR)] birds, and results*	Identify the measures to reduce the collision risk of migratory birds with the transmission line, including measures to increase transmission line visibility (e.g., aerial marker spheres, spirals, and suspended devices, bird strike diverters).	While we do not believe this will be an issue, visual mitigation measures (e.g., bird diverters and/or similar measures) will be considered during detailed design as a mechanism to improve bird visibility of the transmission line at key areas where key habitat is known to occur. These measures are perhaps best considered as an adaptive management option should

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
					in a pathway to a potential effect due to vegetation management within the corridor to maintain operation. The assessment of potential effects on SAR birds includes the change in the habitat function, connectivity, and quality from this pathway." Scientific research has found that transmission lines are the highest industrial causes of mortality of Canadian birds due to human activities (Calvert et al. 2013). Best available data show that the most vulnerable bird groups to collision with transmission lines are (1) waterfowl, (2) grebes, (3) shorebirds, and (4) cranes (Rioux et al. 2013), and may yield population level effects for declining species, including shorebird species. The operation of the transmission line also presents a direct mortality risk (via collision). This should be accounted for in the pathways of effects and appropriate mitigation measures to minimize this risk should be implemented. Environment and Climate Change Canada (ECCC) does not currently have guidance specific to transmission lines. However, the Avian Powerline Interaction Committee has suggested practices posted to their website: https://www.aplic.org/ There is also information available in the published literature: • Bird collisions with power lines: State of the art and priority areas for research https://doi.org/10.1016/j.biocon.2018.02.029		such an issue be identified during transmission line maintenance activities.

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
					• Mitigating avian collisions with power lines through illumination with ultraviolet light https://doi.org/10.5751/ACE-02217-170209		
Indigenous Peoples (IP)							
HH-01	5(1)(c)(i) Aboriginal Health and Socioeconomic Conditions	Indigenous Peoples - Health and Socioeconomic Conditions	Part 2, Section 7.3.4 – Predicted effects on valued components, Indigenous peoples	Section 6.24	Potential health risks of consumption of contaminated country foods have not been sufficiently assessed and corresponding communication plans have not been developed. Project-related changes to concentrations of contaminants in country foods could result in health impacts to Indigenous Peoples conducting traditional land resource use activities on Springpole Lake, Birch Lake, and surrounding lands. The Human and Ecological Health Risk Assessment (HEHRA) predicts total hazard quotients for arsenic, cobalt, and methylmercury that exceed threshold levels for the protection of human health, with country food items (e.g., fish) driving some of the Project-related incremental risk. The Proponent has not committed to develop and implement a country foods monitoring program, nor has rationale been provided to support the exclusion of a country foods monitoring program. Given the predicted elevated risks posed by arsenic, cobalt, and methylmercury during project operations and closure, and the Proponent's ongoing reliance in the HEHRA on country food data from Chan et al. (2014), which is reportedly representative of the Project area (Ecozone 1 Boreal Shield/Subarctic) but has not, to date,	*Note: This requirement may be refined upon review of comments from Indigenous communities on the EIS, some of which are still to be received.* Confirm the Proponent's intent to develop and implement a targeted country food monitoring and reporting program to address uncertainty around potential contamination of country foods. Such a program should be informed by consultation and engagement with Indigenous communities to understand which consumed species should be sampled and to identify preferred sampling methods. As a starting point, and subject to validation by Indigenous communities, IAAC would expect this to include large-bodied fish, such as lake trout, whitefish, lake sturgeon, northern pike, bass, and/or walleye. The program should also contemplate a communication plan, to be informed by consultation and engagement with potentially affected Indigenous communities, outlining how follow-up monitoring results and analyses regarding human health risks would be shared with these communities	Based on the robustness of the assessment work using conservative and established professional practices we do not believe there to be uncertainty around the health of country foods. However, recognizing the importance of country foods to the Indigenous communities FMG would be pleased to develop and implement a targeted country food monitoring and reporting program to monitor parameters of potential concern from Indigenous communities. This will build on the baseline work undertaken for the EIS/EA and will be coordinated with other programs such as the fish monitoring studies required through permitting and follow up monitoring. The Country Foods Monitoring program species will be selected in collaboration with proximate Indigenous communities to identify appropriate and feasible species to monitor relevant for human consumers. It is anticipated that the program will predominantly focus on fish consumption but can also include plants and small mammals similar to baseline programs. The Country Foods Monitoring Program is expected to occur every 3 years and will include a communication plan, outlining how follow-up monitoring results and analyses would be shared with the communities and how their feedback would be considered. It is anticipated the Environment Committees with local Indigenous communities will play a key role in this regard. The program will also include information on

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
					been validated through consultation with Indigenous communities, a monitoring program is required to validate assumptions. Country food species should be selected in collaboration with Indigenous communities associated with the Project in order to monitor contaminants of potential concern (COPCs) in species relevant for human consumers. Additionally, there is uncertainty as to how and/or when the Proponent intends to inform local Indigenous communities about observed changes in levels of potential COPCs in country foods and related impacts on human health. Developing a communication plan would strengthen transparency about the Project's impacts to the environment and human health and support effective and efficient communication between the Proponent and communities. Given the predicted influence of seepage and air emissions on waterbodies that support large-bodied fish consumption, a plan to manage any uncertainty about health risks may help build confidence for decision-makers.	and how their feedback would be considered. Additionally, information should be included on the steps that would be taken in the event of an exceedance of established benchmarks and adaptive measures.	the steps that would be taken in the event of an exceedance of established benchmarks. Monitoring will also be completed for the disciplines that are an input into the ecological risk assessment model (e.g., air quality, groundwater, surface water quality).
HH-02	5(1)(c)(i) Aboriginal Health and Socio-Economic Conditions	Indigenous Peoples – Current Use of Lands and Resources for Traditional Purposes	Part 2, Section 7.3.4 – Predicted effects on valued	Appendix R - HEHRA Section 6.2 Section 6.21	The human health risk (Appendix R, Figure 3-2,) and air quality assessments (Section 6.2.1.3) defined an air quality modelling property boundary that differs from the defined PDA. The human health risk (Appendix R, Figure 3-2) and air quality assessments (Section	*Note: This requirement may be refined upon review of comments from Indigenous communities on the EIS, some of which are still to be received.* 1. Clarify which areas within the property boundary (as defined in Section 6.2.1.3	1. The only area that will have an access restriction for Indigenous communities is the mine site footprint. This is for safety purposes only at the mine, like all other mines. All other areas including the mine access road will remain accessible to Indigenous communities. Access restriction along

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
		Indigenous Peoples - Health and Socioeconomic Conditions	components, Indigenous peoples		6.2.1.3, Figure 6.2-2) also included three receptor locations (POR02, POR03, and POR05) within the property boundary that are identified as areas where traditional land and resource use is practiced (Appendix G-2, Table D-1). No receptor locations were chosen within the PDA, as access to the mine site area and country food harvesting within the PDA will be restricted during the active phases of the Project (i.e., construction, operations, and decommissioning (active closure)) (Appendix R, 3.5). How the Proponent intends to restrict access to the PDA is not specified, and access to areas within the property boundary but outside of the PDA may still occur in the absence of a physical barrier. Section 6.21 notes that prior to construction, the Proponent will develop an access management strategy with local Indigenous communities to manage access along the mine access road, throughout all phases of the Project, but it is not clear if and how people may be able to access areas within the property boundary without passing through the proposed gate on the access road.	and presented in Appendix R, Figure 3-2), if any, will remain accessible to local Indigenous communities during each phase of the Project. 2. Provide further rationale on the selection of receptor locations within the property boundary and along the access corridor to confirm whether they represent a worst-case scenario. Provide information about likely exposure frequencies and durations informed by Indigenous engagement, taking into account accessibility. 3. In the human health risk assessment, consider whether the plan to carefully manage site access will require air quality modelling predictions at more locations than is required for the provincial Environmental Compliance Approval (e.g., the property boundary). 4. Ensure the assessment of effects on human health, and associated mitigation and follow-up programs, take into account Indigenous land use.	the mine access road may be implemented for non-Indigenous people in consultation with MNR. 2. The selection of receptor locations within the Project boundary and along the access road included consideration of traditional land use information. The receptor locations were selected as representative realistic locations where typical uses associated with the landscape would occur (i.e. fishing and boating in the aquatic environment or harvesting in the terrestrial environment). The frequency and duration of the exposure is consistent with the activities that are most likely to occur during the time of use. These selected receptor locations were used in the air quality modelling and the results were subsequently analyzed in the human health and ecological risk assessment. The access corridor is a permitted two lane 80 km/hr forestry road and poses no increased risk to human health. 3. As noted above, the selected locations are representative of the activities likely to occur in these areas, and the inclusion of additional representative location does not change the conclusions or approach to managing access. Acknowledged. Indigenous land use has been accounted for in the assessment of human health and associated mitigation and follow-up programs.
IP-01	5(1)(c)(iii) Current Use of Lands and Resources for	Indigenous Peoples - Current use of Lands and Resources	Indigenous Peoples - Current Use of Lands and Resources for	Section 2 Section 6.21 Section 6.26	The EIS does not sufficiently describe potential impacts to traditional navigation of waterbodies and waterways impacted by the Project. This information must be provided to understand effects to current use of lands and	*Note: This requirement may be refined upon review of comments from Indigenous communities on the EIS, some of which are still to be received.*	1. FMG provided a document titled *Preliminary Draft: Information for Navigable Waters Assessment* to Transport Canada in August 2023 which included information about the physical characteristics of the waterbodies where navigability may be

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
	Traditional Purposes		Traditional Purposes		resources for traditional purposes and potential impacts to the exercise of Aboriginal and/or treaty rights by members of potentially impacted Indigenous communities. Regarding navigation specifically, IAAC understands that the Project will overprint a portage that currently crosses the existing exploration camp, which is used by Cat Lake First Nation and Slate Falls Nation. IAAC already understands that Indigenous communities also use Birch Lake, Springpole Lake, Kapikik Lake, Trout Lake, Kezik Lake, Fawcett Lake, Fry Lake, Bamaji Lake, Lake St. Joseph, Trout Lake, Little Vermillion Lake, and Richardson Lake for fishing, but potential impacts to the navigability of these waterways is not described in the EIS. The EIS notes that some water levels will be lowered, dammed, or overprinted, and further information is required to support IAAC's understanding of impacts to Indigenous navigation. Example questions to determine effects to navigable waterways may include: • What are the physical characteristics (e.g. size and depth)? • Has the waterway been used in the past and is it likely to be used in the future? • Is there access by land and water? • How do Indigenous communities utilize these waterways, and how frequently?	Provide further information about potentially navigable waterways, as follows: 1. Provide information about the physical characteristics of the waterbodies where navigability may be affected by the Project, particularly the area proposed to be dewatered, including size and depth. 2. Provide any information received from Indigenous communities about navigation of waters, including any relevant information on present or past use of waterbodies and waterways. This includes any relevant information provided by Indigenous communities from Traditional Knowledge and Land Use studies or comments from meetings or correspondence. 3. Explain how effects to navigable waterways were validated with Indigenous communities and any specific impacts on their exercise of Aboriginal and/or treaty rights. This includes any concerns raised about hazards being exposed that may affect safe passage, or changes to lake levels that may impact travel routes, as well as any responses to those concerns.	affected by the Project, particularly the area of the open pit basin, including size and depth. FMG is currently updating this document and will provide it to Transport Canada. 2. FMG provided a document titled *Preliminary Draft: Information for Navigable Waters Assessment* to Transport Canada in August 2023 which included information received from Indigenous communities about navigation of waters, including any relevant information on present or past use of waterbodies and waterways. Since this time, FMG has received additional Traditional Knowledge and Land Use studies and therefore, FMG is currently updating this document and will provide it to Transport Canada. 3. Please refer to Section 6.26.1.2 which describes the influence of consultation with Indigenous communities related to the assessment of the potential effect of changes to the environment on Indigenous peoples. This includes a specific section on the use of navigable waters. Please refer to Section 6.21.1.2 which describes the influence of consultation, including the incorporation of traditional knowledge and land use information, on the assessment of potential effects on traditional land and resource use. In addition, Section 6.18.1.2 which describes the influence of consultation on the assessment of potential effects on navigable waters. An alternate and historically used portage access between Birch Lake and Springpole Lake has been identified (Figure 6.18-7 of the final EIS/EA) and will be established and maintained prior to construction through the closure phases when the

#	Link to CEAA 2012	Topic	Reference to EIS Guidelines	Reference to EIS	Context and Rationale	Information Request	FMG Response
							existing portage route will be re-established at post-closure.
IP-02	5(1)(c)(i) Aboriginal Health and Socio-Economic Conditions	Indigenous Peoples - Health and Socioeconomic Conditions	7.1.9 Indigenous Peoples 7.4 Mitigation Measures	Section 6.21.2.1 Traditional and Resource Use Section 6.11.4 (Mitigation Measures)	Additional information is required to understand potential effects to current use of lands and resources for traditional purposes, with regards to vegetation species of importance and related mitigation measures. The EIS does not provide detail about the species of plants and vegetation that will be cleared within the transmission line corridor. IAAC understands, based on the information in the EIS and input from Indigenous communities, that Indigenous land users use the transmission line corridor for traditional land use activities, including harvesting and gathering. Further information is required about the species that will be cleared within this corridor to support an assessment of effects to current use of lands and resources. Further, the EIS notes that mechanical vegetation removal will be used where possible, but that chemical removal could also be used. Mechanical vegetation removal is often preferred by Indigenous communities due to concern about potential contamination from herbicides or changes to perceptions of the land. The EIS does not define when chemical vegetation removal would be used or potential effects to land users.	*Note: This requirement may be refined upon review of comments from Indigenous communities on the EIS, some of which are still to be received.* 1. Provide additional information on vegetation species impacted by the construction and operation of the transmission line and specifically quantify the loss of species identified as culturally important or harvested by Indigenous communities. 2. Clarify and provide rationale for the circumstances under which the Proponent would use chemical removal instead of mechanical removal. 3. Ensure that the updated analysis on anticipated loss of vegetation is included in the assessment of effects to Indigenous peoples' current use of ands and resources.	1. TLRU plant harvesting opportunities will only be affected within the project footprint where vegetation is overprinted by Project infrastructure. However, as vegetation will be maintained along the transmission line route plant harvesting may still continue following construction and may be enhanced by the earlier successional type vegetation including berries that will establish along the corridor. The predicted change in plant species of interest to Indigenous people is conservatively 1,733 ha and represents less than 0.5% of the regional study area. 2. Chemical removal of vegetation will not be used during any phase of the Project. 3. The predicted change in vegetation communities, from Section 6.11.6.1 has been carried forward into the assessment of potential changes on current use in Section 6.21.6.3. With the implementation of mitigation measures, including maintenance of buffers along waterbodies, maintenance of vegetation communities along the transmission line, and the development of revegetation measure in collaboration with local Indigenous communities as part of progressive and final reclamation activities, the predicted changes in vegetation communities are not significant.

ATTACHMENT_IAAC-WQI-01

Comparison of bypass seepage to other similar and recently approved mines in Ontario

SPRINGPOLE GOLD PROJECT

FIRST MINING GOLD CORP.

PROJECT NO.: ONS2104
MARCH 2025

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Comparative Seepage Rates for Other Recently Approved Mining Projects in Northern Ontario

	Mine Waste / Tailings Storage Facility Size		Operations				
Project	**Size (ha)**	**Relative to Springpole**	**Total Seepage (m^3/day)**	**Seepage Collection (m^3/day)**	**Collection Efficiency (%)**	**Seepage Relative to Springpole**	**Seepage Mitigation includes:**
Springpole Gold Project	370	-	1,479	1,367	92%	-	Collection ditches and open pit
Hardrock Gold Project	518	1.4	3.941	3,471	88%	2.7	Collection ditches and grout wall
Cote Gold Project	840	2.3	2,446	2,350	96%	1.7	Collection ditches and pump back wells
Magino Gold Project	390	1.1	5,880	4,610	78%	4.0	Bypass drain system and open pit

ATTACHMENT_IAAC-FH-01

Habitat Mitigation and Offsetting Calculations

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MARCH 2025

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Habitat Mitigation and Offsetting Calculations	
Affiliated Comments	**Information Request FH-01** 1. Remove the projects listed in FH-03 and FH- 04 from the accounting of offset habitat in future revisions of the Fish Habitat Offset Compensation Plan (FHOCP). 2. Revisit the FHOCP and ensure that the remaining projects (e.g., South Bay Mine rehabilitation project [see FH-02], Coarse Wood Structure Shoreline Enhancement, and Spawning Shoals) have sufficient detail (as described in Section 7.4 of the EIS guidelines) including project execution, timelines, success criteria and monitoring/ contingency to meet the terms of the EIS guidelines and offset for the impact of the time lag associated with the Project. If insufficient, the Proponent should provide additional alternative offsetting projects (preferably multiple options) that could meet DFO's policy with future refinement. **Information Request FH-03** 1. Remove from the offset calculation any habitat that was already present in Springpole Lake (e.g., NB-01). This means remove the restored open pit basin. 2. In Section 6.10 of the EIS, the Proponent states that non-schooling fish tend to occupy depths of 18 to 25 m (defined as pelagic habitat). Provide the proportion of 18 to 25 m habitat within NB-01 compared to the remainder of 18 to 25 m habitat in Springpole Lake and provide the proportion of 18 to 25 m habitat that will be created after the pit has been restored compared to the remainder of 18 to 25 m habitat in Springpole Lake. If the quantity of 18 to 25 m habitat is higher after restoration, some credit may be considered offsetting for the surplus lake trout habitat, assuming the remainder of the pit is restored as currently proposed. **Information Request FH-04** Remove Stage 2 of the lake sturgeon research program from the accounting of offset habitat in future revisions of the FHOCP.
Preliminaries	Calculations of impacts to fish and fish habitat were previously determined by measuring the aerial surface of the waterbodies that would be subject to HADD. These calculations were summarized in Tables 6-1, 6-2 and 6-3 of the Fish Habitat Offset and compensation Plan (FHOCP). An offset area and balance summary was included in the FHOCP as Table 9-1 with the intent of demonstrating that sufficient measures were available to offset the predicted impacts. The analysis below incorporates the information request received to date and is intended to be discussed further with regulators prior to the next revision of the FHOCP during the permitting process. In review of the analysis, it is important to consider the context provided in Information request FH-03 which says "*NB-01 already supports a healthy lake trout population and the restoration of that habitat after the life of the mine is considered mitigation and not offsetting.*" Consistent with this context, we have removed the aerial extent of the existing open pit basin (NB-01) from both the impact and the offset calculation as the habitat will be fully mitigated by

the plan presented in the final EIS/EA to reclaim and restore the open pit basin at closure. A modified Table 9-1 from the Draft FHOCP showing these revisions is provided below. Note that no additional area is accredited to the reclaimed basin at this time, however, discussions with DFO should consider some credit being recognized from the large increase in pelagic habitat between 18 m and 25 m as mentioned in IR-FH03. Volumetric and aerial calculations of the reclaimed open pit basin compared to the existing NB-01 basin (IR-FH03) are provided in Attachment IAACFH03.

Modified Table 9-1: Offset Area Accounting and Balance Summary

Segment Description	Initial Impact Area (ha)	Calculated Offset / Compensation Area (ha)
Combined impacts per **Error! Reference source not found.** (subtract existing NB-01, 152.2 ha)	~~213.2~~ -61	
Restored open pit basin (remove reclaimed basin)		~~245.0~~
Lake Sturgeon Program Stage 1 – Research Program		25[1]
Lake Sturgeon Program Stage 2 – Population Support (remove Stage 2)		~~200.0~~[2]
South Bay Mine reclamation		87
Restoration of L-1		9.0
Overbuild dike to create shoals		10.0
Summary	~~213.2~~ -61	~~575.7~~ 130.7
Net ratio up to		~~2.7:1~~ 2.14:1

Although the physical habitat area impacts to the open pit basin (NB-01) will be fully mitigated, there is still a need to recognize and account for the lost fish production that will occur during the life of mine (lag time) when the basin is not available as fish habitat,. To do this, we have used the Provincial standardized broadscale monitoring (BsM) data to calculate absolute densities for two valued fish species (Walleye and Lake Trout) which represent top level predators in the Springpole Lake food chain. Although relative abundance as area weighted catch per unit effort (CPUE) and area weighted biomass per unit effort (BPUE) has also been calculated for all large bodied species, Walleye and Lake Trout also have "catchability coefficients" for use within the BsM data that enable the calculation of absolute densities and therefore fish production by area.

In the analysis below, Walleye and Lake Trout production losses are summarized, and then balanced over time by the increased area of production provided by the reclaimed basin at closure. The rationale for using the two species as the measure of loss and gain, is that both species rely on all the trophic levels below them in the food web to achieve their survival and recruitment as per the food web example below. To have healthy and abundant Lake Trout and Walleye, the supporting species and habitats must also be present at proportional levels.

Food Web Example

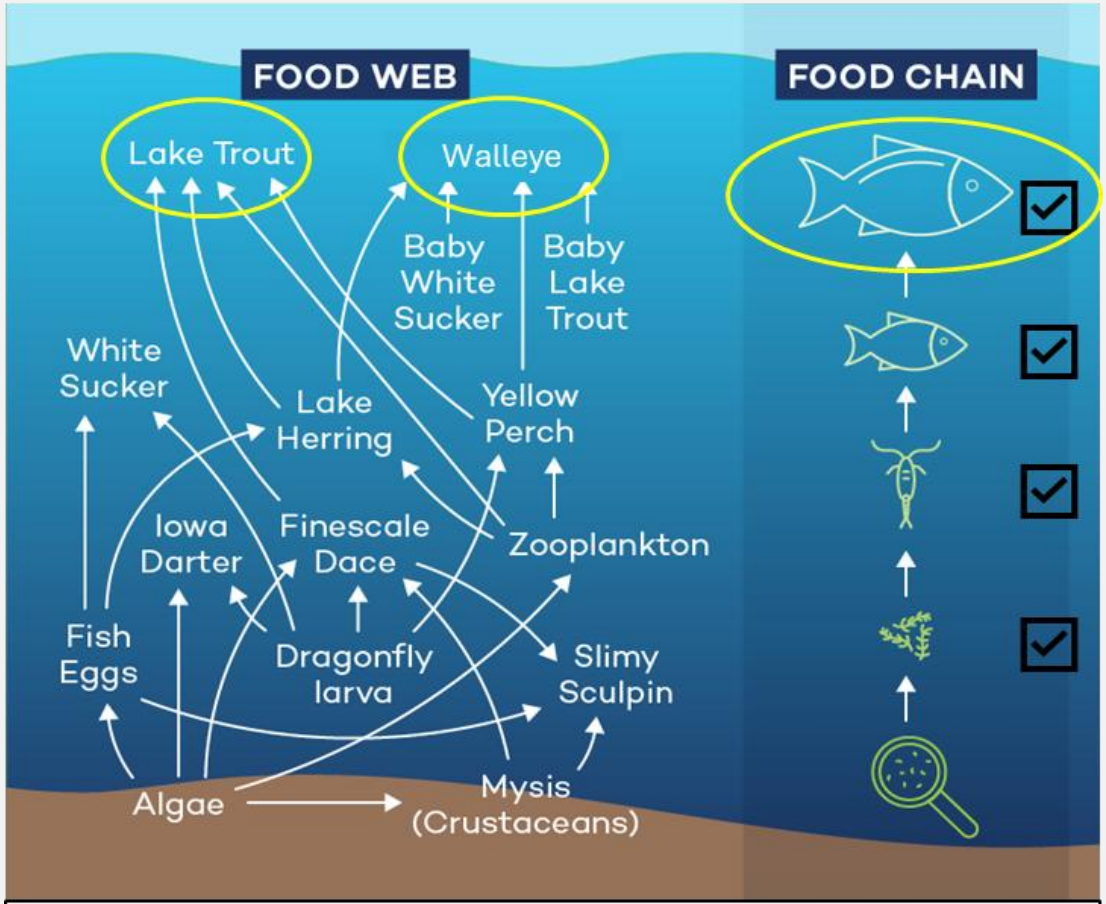

Figure modified from IISD ELA, Back to Basics: Who Eats Whom in Fresh Water
Article: By Savana Theodore-Maraj: September 28, 2021:
https://www.iisd.org/ela/blog/who-eats-whom-in-fresh-water/

Impact and Mitigation Analysis

To estimate fish losses from the open pit basin, data from the Provincial Standard 2022 BsM survey was used to calculate fish density and fish biomass per hectare for recruitment sized Lake Trout and Walleye. Total Lake Trout and Walleye populations in the existing Springpole Lake has been calculated as 0.30 Lake Trout per hectare, and 2.48 walleye per hectare. Fish biomass has been calculated as 1.168 kilograms of Lake Trout per hectare and 2.163 kilograms of Walleye per hectare. The values generated by and used in the BsM calculations are provided in Table FH01.01.

Estimated total fish (Lake Trout and Walleye) in the existing open pit basin and annual production are provided in Table FH01.02 below. Also included in the table is the estimated total and annual production of Lake Trout and Walleye in the reclaimed open pit basin. These values represent the number of Lake Trout and Walleye; and the kg of Lake Trout and Walleye that are currently produced and expected to be produced each year. By accruing the calculated annual fish production over the period that the open bit basin will be isolated we have calculated an estimate of the total number of Lake Trout and Walleye and kg of each species that will be temporarily lost due to the Project as presented in Table FH01.03. Also presented in Table FH01.03 is the estimated calculation of the time it will take to replace the number of fish lost due to the production associated with the reclaimed basin.

The analysis provided in Table FH01.03 presents the following key determinations from the temporary isolation of the open pit basin:

- The timing of the basin isolation and a proposed fish removal program will mitigate much of the initial basin population loss, but to be conservative we have included 20% of the estimated Lake Trout and Walleye within the basin as an initial loss.
- A loss in production of 159 recruitment sized Lake trout with a combined weight of 580 kg (1,279 lbs) over a period of 19 year (year 17 of the Project);
- A loss in production of 2,045 recruitment sized Walleye with a combined weight of 1,784 kg (3,933 lbs) over a period of 19 year (year 17 of the Project);
- Filling of the open pit basin will take 5 years including time for reconnection with the main lake
- The reclaimed open pit basin with take 5 years to fully adjust and naturalize with the first 2 years still considered a loss in fish productivity.
- The reclaimed open pit basin is assumed to be fully functioning and productive approximately 5 years after filling.
- Net balance between the fish production lost during the period of isolation and the productivity from the reclaimed basin is achieved in Project year 29, which is 10 years post closure.

It is important to note that this current analysis is based on the surface area of the existing and proposed open pit basin and has yet to take into account the greatly expanded pelagic areas and volumes between 18 m and 25 m in depth which are likely to proportionally benefit Lake Trout production. Ongoing discussions with DFO and additional modeling is being completed to factor the increased deep water areas described in Attachment IAACFH03 into the analysis presented in Table FH01.03

Table FH01.01: Values Calculated from BsM Data Analysis

Density (Lake Trout / ha)	0.30
Density (Walleye /ha)	2.48
Biomass (Kg of Lake Trout / ha)	1.168
Biomass (Kg of Walleye / ha)	2.163
Annual Production Ratio for Lake Trout	0.18
Annual Production Ratio for Walleye	0.29
Recruitment size Lake Trout (mm)	350
Recruitment size Walleye (mm)	350

Table FH01.02: Lake Trout and Walleye Recruitment Size Fish Production in the Existing Open Pit Basin and the Reclaimed Open Pit Basin

Parameter	Existing open pit basin (NB01)	Reclaimed Open Pit Basin
Surface Area (ha)	152.2	248.8
Total Number of Lake Trout	46	75
Annual Production (recruitment) of Lake Trout	8	14
Total Number of Walleye	377	617
Annual Production (recruitment) of Walleye	109	179
Total Kg of Lake Trout	177.7	290.6
Annual Production (Kg) of Lake Trout	32.0	52.3
Total Kg of Walleye	329.1	538.1
Annual Production (Kg) of Walleye	95.4	156.1

Table FH01.03: Accrued Recruitment Size Lake Trout and Walleye Production Losses from the Isolated Open Pit Basin and Subsequent Mitigation from the Reclaimed Open Pit Basin.

Project Phase	Project Year	Cumulative Number of Fish Lost or Gained		Cumulative Kg of Fish Lost or Gained		
		Lake Trout	Walleye	Lake Trout	Walleye	
Construction	-2	-9	-75	-35.5	-65.8	
	-1	-18	-185	-67.5	-161.3	
Operation	1	-26	-294	-99.5	-256.7	
	2	-34	-404	-131.5	-352.2	
	3	-42	-513	-163.5	-447.6	
	4	-51	-623	-195.5	-543.1	
	5	-59	-732	-227.5	-638.5	
	6	-67	-841	-259.5	-734.0	
	7	-76	-951	-291.5	-829.4	
	8	-84	-1060	-323.5	-924.9	
	9	-92	-1170	-355.5	-1020.3	
	10	-101	-1279	-387.4	-1115.8	
Filling of Reclaimed Open Pit Basin	11	-109	-1389	-419.4	-1211.2	
	12	-117	-1498	-451.4	-1306.7	
	13	-125	-1608	-483.4	-1402.1	
	14	-134	-1717	-515.4	-1497.5	
	15	-142	-1826	-547.4	-1593.0	
Reclaimed Basin Adjustment Period	16	-150	-1936	-579.4	-1688.4	Assume 20% Recovery
	17	-159	-2045	-611.4	-1783.9	Assume 40% Recovery
	18	-145	-1866	-559.1	-1627.8	Assume 60% Recovery
	19	-132	-1687	-506.8	-1471.8	Assume 80% Recovery
	20	-118	-1508	-454.5	-1315.7	Assume 100% Recovery
Closure - reclaimed basin has been fully mitigated and surplus (additional production is subtracted from the cumulative loss of fish	21	-104	-1330	-402.2	-1159.7	
	22	-91	-1151	-349.9	-1003.6	
	23	-77	-972	-297.6	-847.6	
	24	-64	-793	-245.3	-691.5	
	25	-50	-614	-193.0	-535.5	
	26	-36	-435	-140.7	-379.4	
	27	-23	-256	-88.3	-223.4	
	28	-9	-77	-36.0	-67.3	
	29	4	102	16.3	88.7	Net Balance in Fish Production Achieved
	30	18	281	68.6	244.8	
	31	31	460	120.9	400.8	
	32	45	639	173.2	556.9	
	33	59	818	225.5	713.0	
	34	72	996	277.8	869.0	
	35	86	1175	330.1	1025.1	

Summary:

As requested, we have removed the reclaimed open pit basin area and the area attributed to Stage 2 of the Lake Sturgeon program from the habitat Offset Area Accounting and Balance Summary (Table 9-1 of the FHOCP). Based on the context portion of the information request we have also removed the aerial footprint of the existing basin from the impact portion of the table, recognizing that it will be fully mitigated at closure. However, to account for the temporary loss of fish productivity while the basin is temporarily isolated from the main lake, we have used the BsM data to calculate total numbers of fish and total biomass for Lake Trout and Walleye that will be lost due to the project. Future sampling and monitoring programs will continue to include the relative abundance and trends of all fish species in the lake. However, both species are at the top of the food web, are considered valued species and can only be present in the predicted abundance providing that the food web below them is available in proportional abundance.

Additional discussions are proposed with DFO to consider a depth stratified predictive model for productivity in the open pit basin as per the findings in Attachment IAACFH03.

ATTACHMENT IAAC-FH-02

South Bay Mine Fish Habitat Reclamation Work Plan

SPRINGPOLE GOLD PROJECT

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MARCH 2025

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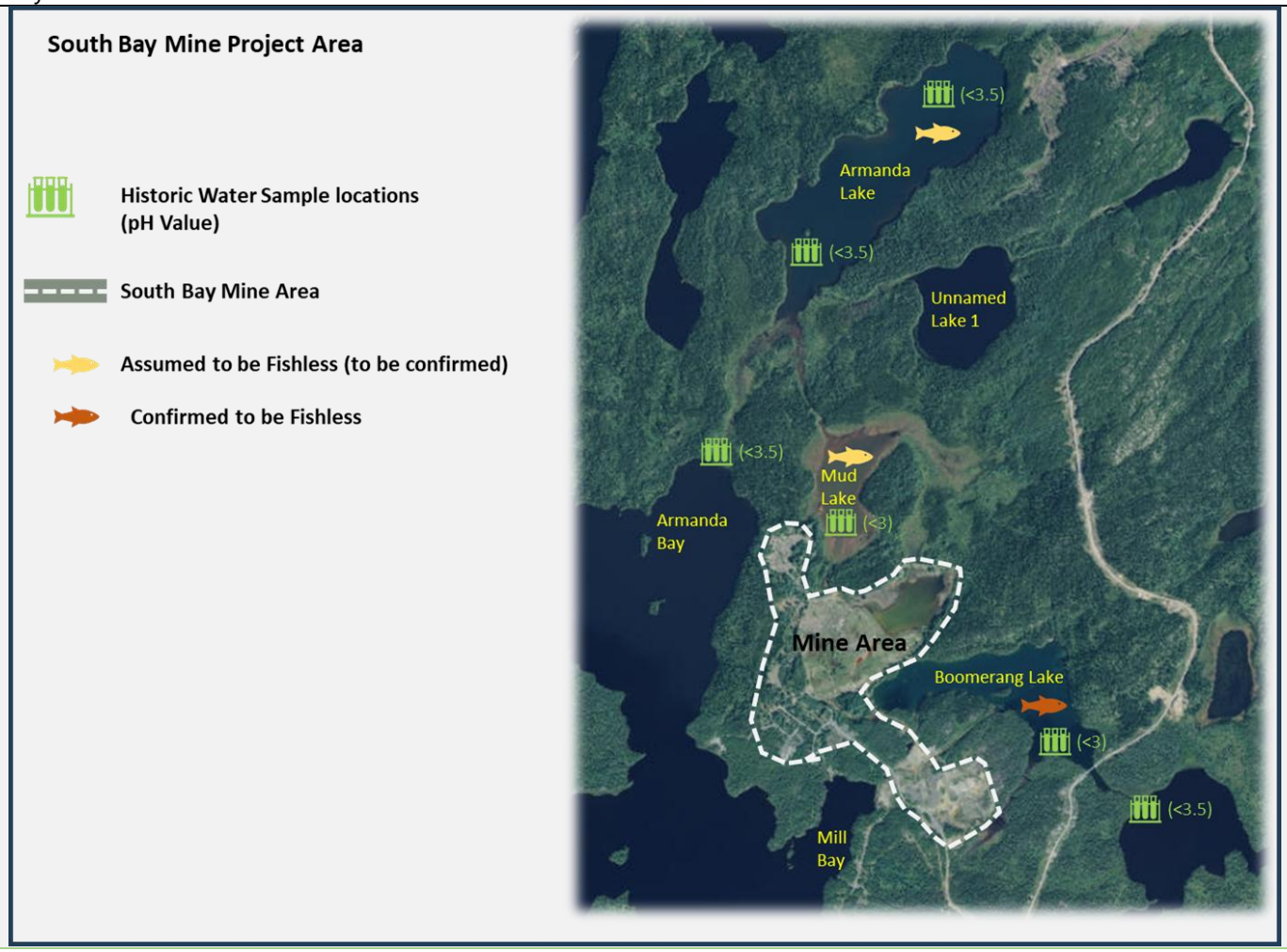
South Bay Mine Reclamation Project	
Project Background:	South Bay Mine was an underground copper and zinc mine, which operated between 1971 and 1981 on the northeastern shore of Confederation Lake's South Bay. The mine is abandoned but has been producing Acid Mine Drainage (AMD) for over 30 years, which has affected Confederation Lake as well as smaller inland lakes adjacent to the mine. A detailed environmental investigation was completed by the Environmental Monitoring & Reporting Branch (EMRB) of the Ministry of the Environment and Climate Change (MOECC) in 2008, as reported in their 2015 document (MOECC, 2015) showing that Acid Mine Drainage (AMD) from the mine area is having an ongoing impact to local waters and biota. Figure FH02.01 below shows the lake arrangements relative to the mine area. Some restoration works were completed in the 1980s, before the site was returned to the Crown in approximately 1990 (CH2M 2018). Despite restoration efforts, water, sediment and biological sampling has shown effects of AMD in the adjacent lakes including elevated zinc, copper, cadmium, cobalt, and manganese (MOECC 2015). Three smaller lakes receive drainage from the mine: Mud Lake (10 ha), Amanda Lake (52 ha) and Boomerang Lake (25 ha). All three lakes show severe impairment in water quality, and specifically in pH, which was measured between 2 and 3.5 (MOECC 2015). Water quality measured at the outflow of Boomerang Lake by WSP in 2023 also measured less than 3 for pH. Federal long-term water quality guidelines for pH in fresh water indicate an acceptable range of 6.5 to 9.0 (CCME 2024). The observed values in all three lakes are below levels where normal life processes are disturbed, and mortality of eggs and larval fish occurs (DFO 2024c). Boomerang Lake, which historically supported Lake Whitefish (MNR 2024), was confirmed to be fishless (MECP 2015), and fish are not expected to be able to persist or reproduce in Mud or Amanda lakes. Within the larger Confederation Lake, impairment is observed in the nearshore areas where mine drainage reports to the lake at Armanda Bay, Mill Bay, and Boomerang Bay. Forage fish sampling results suggest that zinc and manganese is bioavailable from these impacted areas (Boomerang, Mill, Armanda Bays), as significantly higher levels were measured in young of the year Yellow Perch from these areas compared to reference areas in South, North, and Lost Bays.
Affiliated Comments	**Information Request FH-02** 1) Provide more detailed information on the proposed reclamation works at South Bay Mine, including the works required to reach the end goal of restored fish communities in Boomerang, Amanda and Mud Lakes. 2) Clarify the objectives of the South Bay Mine reclamation efforts with respect to benefiting fish and fish habitat. 3) Provide detailed information regarding the arrangements made with MINES for the South Bay Mine reclamation, discussing the proportion and types of works the Proponent will be contributing to, and the timeline and monitoring planned for the area. 4) Provide the MOU between the Proponent and MINES that is referenced in Appendix F, page 8-7, if not confidential.

Status: Planning Phase	First Mining Gold (FMG) is continuing the process of initiating the joint reclamation of the South Bay Mine with the Ontario Ministry of Mines (MINES). A letter of Support from MINES was received and is attached. An application for *Voluntary Rehabilitation of Mine Hazards* (Form 0322E (2022/11) will be submitted, planned for March 2025; clearly defining the work packages and support to be provided by FMG.

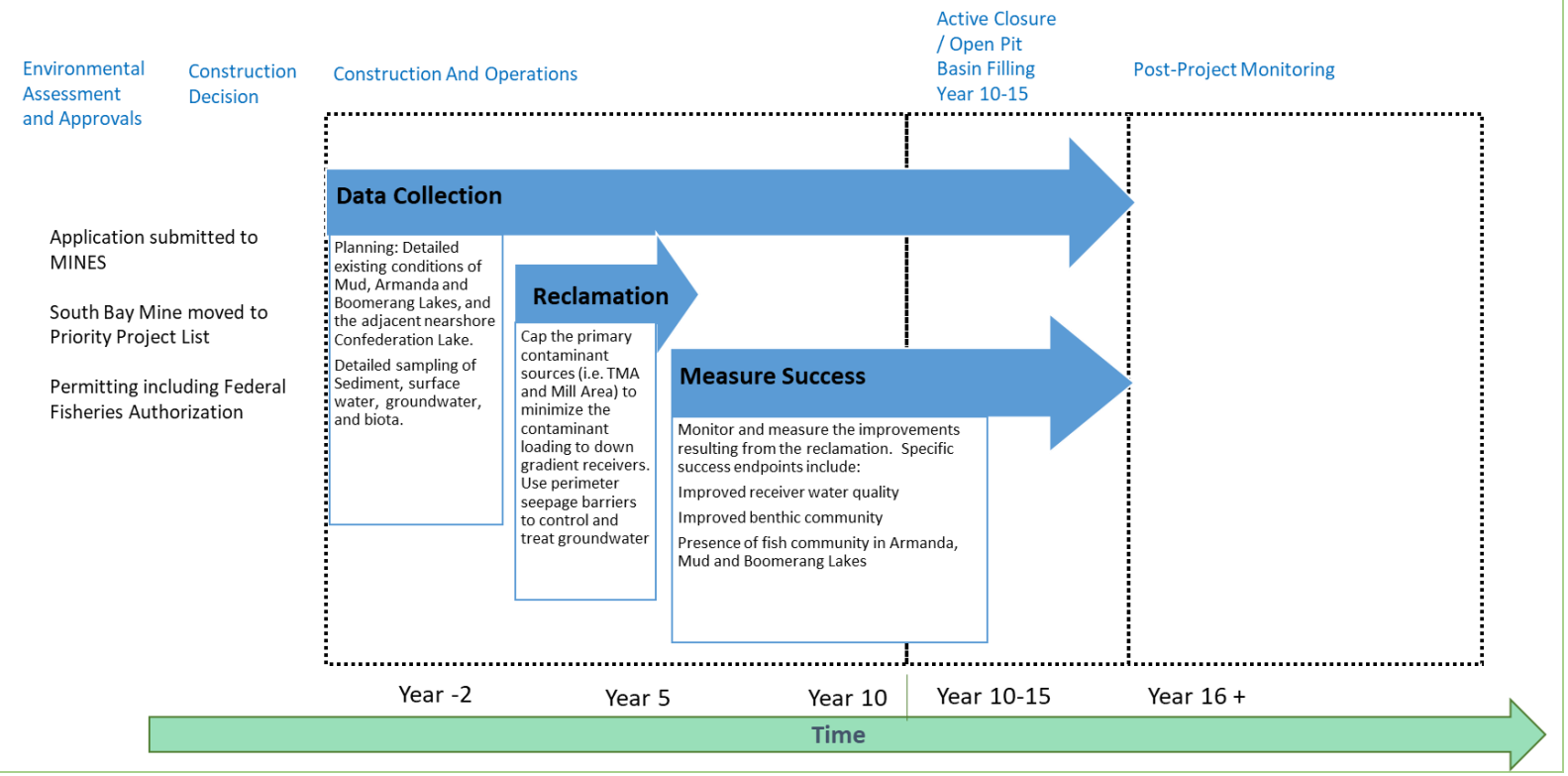
Figure FH02.01: South Bay Mine Area and Adjacent Waterbodies Affected by Acid Mine Drainage



Fisheries Objectives:	The main objective of the South Bay Mine reclamation is to promote the biological recovery of three non fish frequented lakes (Armanda, Mud and Boomerang) such that they are capable of supporting fish communities. The recovery of the three lakes will result in an 87 ha increase in fish frequented waters. An additional objective is to reduce the ongoing impacts to the nearshore areas of Confederation Lake (e.g., zinc) documented in Armanda Bay, Mill Bay and Boomerang Bay as measured through water, sediment and biota.		
Fisheries Objectives Methodology	**Baseline Planning** • Develop a current and robust data set of the existing conditions with measurable benchmarks. • Sample / confirm absence of fish in Armanda, Mud and Boomerang Lakes (due to low pH). • Sample baseline invertebrate community metrics following Environment and Climate Change Canada Environmental Effects Monitoring methods. • Sample lower trophic community (chlorophyll a, plankton) quarterly. • Sample sediment condition at depth (contaminant levels and grainsize) by core sampling. • Sample water quality at surface and depth seasonally. • Sample contaminants in fish invertebrates and plankton in Armanda Bay, Mill Bay, Boomerang Bay and reference sites in Confederation Lake • Develop reference baseline fish abundance benchmarks from adjacent reference lakes; and or from provincial Broadscale Monitoring data base (See Figure FH02.02). • Develop water quality model to predict lake recovery from available data and supplement with data collection as needed.	**Reclamation** • Reduce the seepage from the South Bay Mine to the adjacent lakes using methods described below. • Monitor 21 wells (installed in circa 2015) and supplement as needed to establish rate and directions of improvement to groundwater. • Monitor surface water runoff for contaminant loading and flow rates. • Compare trends to pre-construction data and refine prediction of lake(s) recovery.	**Success Monitoring** • Measure the increase in species presence and abundance of fish in Armanda, Mud and Boomerang Lakes. construction and post-reclamation. Use the benchmarks developed as part of the Baseline / Planning phase as success goals (See figure FH02.02. • Measure a reduction in contaminants in young of the year yellow perch (particularly zinc and manganese) from Armanda Lake, Mud Lake Boomerang Lake, Armanda Bay, Mill Bay, Boomerang Bay and reference areas in Confederation Lake. If perch are not available a second species will be determined. • Measure contaminants in plankton, invertebrates, sediments and water samples from Armanda Lake, Mud Lake Boomerang Lake, Armanda Bay, Mill Bay, Boomerang Bay and reference areas in Confederation Lake. Compare to pre-construction values, and assess improvement trends over time.

Figure FH02.02: Development of Fish Abundance Benchmarks from Provincial Broadscale Monitoring Program Lakes

Reclamation Methods:	**Tailings Cap:** Extensive investigation and analysis has selected a "cap in place" reclamation to isolate the impacted area, a slurry wall perimeter to control and direct groundwater, and a permeable reactive barrier to passively treat the directed groundwater. The cap itself will consist of a 0.2 m mixed vegetative support layer, a 0.4 m clean fill layer, and a 160 mil bituminous geomembrane liner. **Slurry Wall:** A 0.8 m wide Cement Bentonite Slurry Wall (CBSW) is to be constructed continuously around the perimeter of the TMA and Decant Pond with top of wall elevation within 0.5 m maximum from existing ground elevation. The bottom Of the slurry wall will be extended into the site's highly weathered/upper bedrock formation until it meets refusal. By creating a ring wall, or continuous CBSW, the groundwater connection to outside the tailings area footprint will be minimized through the low hydraulic conductivity of the PRB at 1 x 10-7 cm/sec. **Permeable Reactive Barrier:** Installation of a Permeable Reactive Barrier (PRB) will provide an exit point for the groundwater which is expected to gradually drop in elevation over time. The permeable reactive barrier is designed to enhance bacterial sulfate reduction and metal sulfide precipitation, which has been shown to reduce acid mine drainage and the associated release of dissolved metals. The PRB was designed considering the modeled flow rate beneath the TMA, as well as the chemistry of the groundwater. The residence time for groundwater running through the PRB was balanced with the natural attenuation process of the aquifer as well as the reactive capacity of the PRB. **Active Water Treatment** – Water treatment will be used during construction to facilitate management of contact water, draining of the decant pond and as a contingency for initial flushing of three lakes. A mobile ballasted sand clarifier system is recommended (CH2M 2016a)
Tradeoff Studies	**Lake Flushing:** Water quality may take considerable time to improve to conditions that would support fish colonization. A study could be completed to review options to expedite the process such as flushing the lakes with water from Confederation Lake, with and without using a portable water treatment plant. **Sediment dredging:** Boomerang lake and Mud Lake sediments are believed to have sequestered much of the metals transported to the lake (CH2M 2018). A trade off study could be completed to assess the benefits of capping, dredging or otherwise treating the lake sediments to expedite lake recovery. **Woman River Spill:** A truck load of concentrate was spilled on the north side of the Wenesaga /South Bay Road (~km 50.5). Sampling in 2015 showed order of magnitude soil exceedances in parameters such as Arsenic, Copper, Lead, Mercury, and

	Selenium. Additional investigation could identify an additional opportunity for reclamation. An study could be completed to assess the benefit of cleaning up the historic spill to fisheries in the Woman River.
Contingencies:	**Water Treatment:** A biological treatment cell can be constructed in the NW arm of Boomerang Lake. The cell would be maintained year-round throughout the entire duration of the mine reclamation, and potentially extended into an initial transitional phase to permanent closure, to ensure that Boomerang Lake can consistently meet discharge water quality objectives (CH2M 2016b) **Fish recolonization:** communities can be stocked from the adjacent and connected lake system to expedite the recolonization of the lakes. The stocking would be paired with recovery milestones to reintroduce a forage fish base tolerant of remnant conditions, then more sensitive and higher trophic species.
Schedule:	

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ATTACHMENT_IAAC-FH-03

Springpole Lake Reclaimed Open Pit Basin Calculations

SPRINGPOLE GOLD PROJECT

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MARCH 2025

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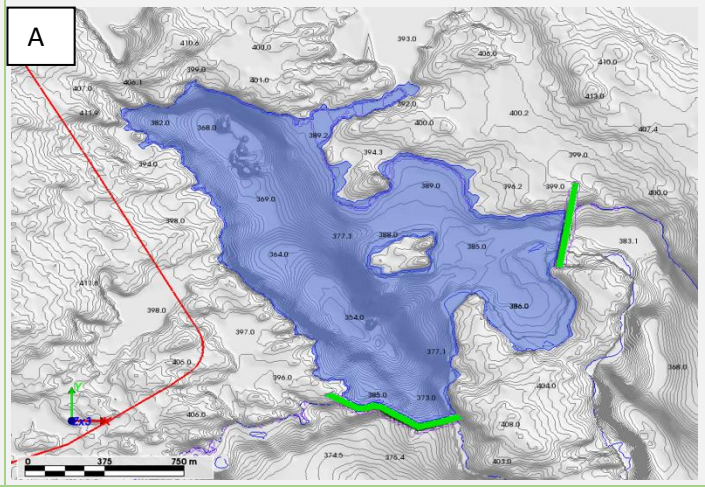
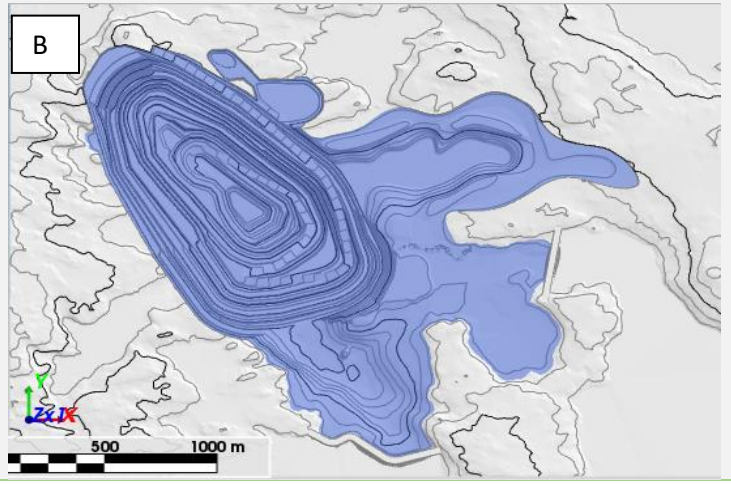
Springpole Lake Reclaimed Open Pit Basin Calculations	
Affiliated Comments	**Information Request FH-03** 2. In Section 6.10 of the EIS, the Proponent states that non-schooling fish tend to occupy depths of 18 to 25 m (defined as pelagic habitat). Provide the proportion of 18 to 25 m habitat within NB-01 compared to the remainder of 18 to 25 m habitat in Springpole Lake and provide the proportion of 18 to 25 m habitat that will be created after the pit has been restored compared to the remainder of 18 to 25 m habitat in Springpole Lake. If the quantity of 18 to 25 m habitat is higher after restoration, some credit may be considered offsetting for the surplus lake trout habitat, assuming the remainder of the pit is restored as currently proposed.
Preliminaries	Calculations of area for the open bit basin, the reclaimed open pit basin and the remaining areas of Springpole Lake have previously been presented using the ARC GIS Software Platform. This was primarily calculations of area based on bathymetry surveys completed in 2017 and 2029. This bathymetry was developed using the existing water level as depth zero, and incremental water depths from surface (i.e, 0 m to ~36 m). To conduct a more wholistic analysis of the existing lake basin and the proposed reclaimed open pit basins, MUK 3D software was used to calculated volumes by area for 0.5 m depth intervals (slices) and by basin delineations (e.g., open bit basin, reclaimed open pit basin, and total lake basin). The 3D analysis uses elevations as metres above sea level (MASL) with an upper surface elevation of 391.5 masl. This starting interval is moderately (0.2mm) more than the measures average lake water level of 391.28 masl, but well centered within the range of observed lake levels of 390.7 masl to 392.8 masl. MUK 3D software's management of intricate contours and small island features and the surface water elevation used results in minor differences from the aerial measurements presented in the draft and final EIS fish habitat offset and compensation plan, but are within 2 % of those values when comparing the open pit basin as shown below and considered acceptable for the benefit of comparing volume. A larger difference (5%) is shown for the entire lake reflecting the cumulative difference of the small island features and 0.22 m difference in water elevation. **Table showing the percent differences between the aerial measurements presented in the Final EIS FHOCP and the current 3D analysis of the lake volume and areas.**

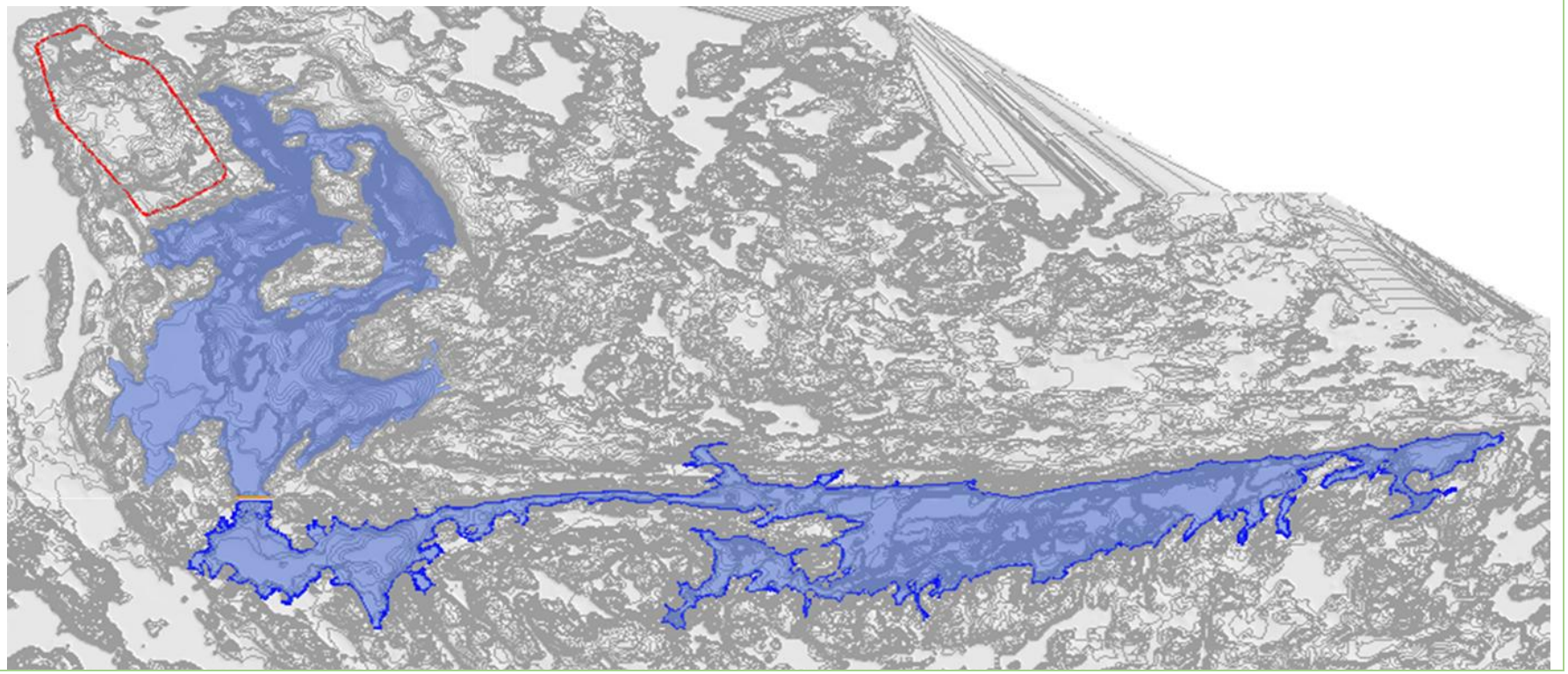
Basin Description	ARC GIS Area (ha) FHOCP values	MUK 3D Area (ha)	Difference (%)
Existing Open Pit Basin	155	152	1.97
Reclaimed Open Pit Basin	245	249	1.63
Existing Springpole Lake	2,557	2687	5.08

All values used in the analysis below are completed in the MUK 3D software for a representative comparison between pre and post project conditions.

Basin Delineation	The following basin descriptions were used in the 3d lake volume analysis.	
	A. Open Pit Basin: this is the existing area that will be isolated and dewatered for the project between the east and west dikes. 	**B. Reclaimed Open Pit Basin:** The represents the post project area between the East and West dikes including the fish habitat development area. 

C. Total Lake Basin: This is the entire Springpole Lake Basin.

C



Basin Analysis

Table A: Comparison between the Existing and Proposed Reclaimed Springpole Lake Basins

Parameter	Existing Conditions		Reclaimed Conditions	
	Open Pit Basin	Total Lake	Reclaimed Open Pit Basin	Total Lake
Surface Area	152.2	2,686.9	248.8	2,783.5
Volume >18 m to 25 m	2,331,278	9,300,631	9,753,923	16,723,276
Volume >25 m to 30 m	835,381	2,753,013	6,249,868	8,167,500
% by Volume of Total Lake >18 m to 25 m	1.1%	4.6%	4.2%	7.2%
% by Volume of Total Lake >25 m to 30 m	0.4%	1.4%	2.7%	3.5%
Area at lake surface	152.2	2,686.9	248.8	2,783.5
Area at 18 m depth	47.8	221.2	145.9	319.3
Area at 25 m depth	21.9	81.0	134.8	194.0

Parameter	Existing Conditions		Reclaimed Conditions	
	Open Pit Basin	Total Lake	Reclaimed Open Pit Basin	Total Lake
Surface Area	152.2	2,686.9	63%	4%
Volume >18 m to 25 m	2,331,278	9,300,631	318%	80%
Volume >25 m to 30 m	835,381	2,753,013	648%	197%
% by Volume of Total Lake >18 m to 25 m	1.1%	4.6%	263%	56%
% by Volume of Total Lake >25 m to 30 m	0.4%	1.4%	550%	158%
Area at lake surface	152.2	2,686.9	63%	4%
Area at 18 m depth	47.8	221.2	205%	44%
Area at 25 m depth	21.9	81.0	516%	139%

Summary:
As requested, an analysis of lake proportions was completed to compare the existing Springpole Lake with the proposed reclaimed Springpole Lake at closure. The 18 m to 25 m is recognized as an important pelagic habitat for Lake trout, Lake Whitefish and other large bodied species seeking summer thermal refugia. Notwithstanding this being the depth range where most cold water fish were observed, fish were also observed and captured below 25 m to greater than 30 m providing the dissolved oxygen was suitable. We have used 30 m depth as the lower limit of this analysis as it is consistent with the depth of observed fish usage, and it is within the range of depths that the reclaimed open pit basin modeling has predicted lake mixing and the aerobic conditions.

As shown in Tables A and B, only a portion of the deep water habitat will be temporarily isolated by the open pit basin, with the majority of the deep water habitat remaining in the main lake. There will be a large increase in pelagic habitat volume as a result of the reclaimed open pit basin, in the order of a 260% to 550% increase within the reclaimed basin itself, and a 56% to 158% increase for the total lake volume. The increase volume at the depth is coupled with a corresponding increase in the planar area of these depth intervals. Table A also shows that the majority of the deeper pelagic habitat between 18 m and 25 m and between 25 m and 30 m in the existing lake will be retained within the remainder of the North Basin until project closure and reclamation of the Open pit basin.

To respond to the specific comment in Information Request FH03, the reclaimed open pit basin will result in a net increase in 18 m to 25 m pelagic habitat by 7.4 Mm^3 and an increase in the 18 m depth contour by 98 ha, and an increase in the 25 m depth contour by 112.9 ha. We suggest further discussion with DFO to determine potential additional credit that may be attributable to the Project as an offset measure for the increased values.