TMI_860-AA(2)-01.docx

Unique Identifier	Agency IR#	Annex	Agency / Group / Stakeholder		Cross Reference / Comment / Information Request / Response
TMI_860-AA(2)- 01	AA(2)-01	1	CEA Agency	Reference to EIS Guidelines:	Part 2, Section 8
				Reference to EIS / Appendix	Section 3.6.2; Section 4.3.4
				Cross- reference to Round 1 IRs	TMI_25-AA(1)-06
				Context and R	Rationale:
				malfunct	4.3.4 of the revised EIS includes "Uncontrolled Cyanide Release", as a potential accident and tion however does not discuss spillage from the carbon-in-leach (CIL) ore processing area. It is d that such spills would likely contain cyanide.
				indicates uncertail event po	y, ore processing would occur in a contained area. However, Section 3.6.2 of the revised EIS is that that an "event pond" will be used to contain any spills from the CIL area. This creates not use to whether a release of cyanide to the environment would be possible. The location of the bond is not shown in provided figures. It is also not known if there is a discharge point from the event if the water from the pond is to be pumped and treated elsewhere.
				 The location of the event pond and the quality of the water it contains may a as wetlands, wildlife, migratory birds, and fish and fish habitat. For example states: "As a result of being found in topographical depressions, wetlands m contaminated runoff from mine operations. As waterfowl and wildlife (e.g., re 	ation of the event pond and the quality of the water it contains may affect valued components such nds, wildlife, migratory birds, and fish and fish habitat. For example, Section 6.4.1.13 of the EIS As a result of being found in topographical depressions, wetlands may become the endpoint for nated runoff from mine operations. As waterfowl and wildlife (e.g., reptiles/amphibians) are attracted nds for foraging and breeding, concentrations of contaminants could constitute an attractive e to such species."
				migrator	ormation is required to assess the effects of water quality in the event pond on wildlife including by birds, species at risk, and wildlife of use to Indigenous use, as well as the impact to current use of the for traditional purposes.
				Specific Ques	tion / Request for Information:
					st-case scenario of a spill from the carbon-in-leach ore processing area in the Accidents and ssment of cyanide releases. Include the following:
				Map of t	he event pond;



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				 description of the worst-case event, including but not limited to water quality in the event pond;
				potential environmental effects, and mitigation thereof; and
				control measures and preventative procedures;
				contingency and emergency response.
				B. Provide information on mitigation measures and follow-up program to be implemented to restrict wildlife and migratory birds' access and use of the event pond.
				C. Review and revise significance determination for the potential risk to wildlife including migratory birds, species at risk, and wildlife of use to Indigenous use (including consumption of wildlife that could access the event pond).
				Draft Response:
				Part A: Handling and storage of cyanide will be done as per the Cyanide Management Plan; where design and construction of unloading, storage, mixing and processing facilities are consistent with sound, accepted engineering practices, quality control and quality assurance procedures, spill prevention and spill containment measures. Unloading and storage areas will be located within the Process Plant and will be located on concrete surfaces to prevent seepage to the subsurface. Secondary containment will be included in the design for any cyanide storage as well as the carbon-in-leach ore processing area. The carbon-in-leach processing area is within the Process Plant and will be located on concrete surfaces to prevent seepage.
				The cyanide storage and mixing tanks, the carbon-in-leach ore processing and related pipelines will be constructed of, or coated with materials compatible with cyanide and high pH conditions. Tanks and pipelines will be clearly identified as containing cyanide and the direction of flow will be indicated on pipelines.
				Systems and procedures will be in place to address potential recovery of released solution, remediation of any contaminated soil and possible failures of tanks as necessary to protect surface and ground water. A method to prevent overfilling of storage tanks other than direct observation and manual gauging rod will be used such as an automatic level indicator, high-level alarm or integrated tank and tanker valve-shutdown device. A written set of procedures designed to prevent and control exposures and releases during cyanide unloading, storage and mixing and the carbon-in-leach ore processing activities. These procedures may be in the form of an operating manual, standard operating procedures, checklists, signs, training documents or other written formats. Employees will also undergo specialized training in the handling of cyanide. Contingency procedures for responding to releases and worker exposure that may occur will be developed and will address the issues of worker safety, environmental exposure and emergency response and will be incorporated into the overall Emergency Response Plan. Given the location of the carbon-in-leach ore processing and related pipelines within the Process Plant building, and ancillary area it is extremely unlikely that any material would spill to natural environment as material would have to spill out of the designed and properly scoped secondary containment. Secondary containment will be utilized to
				contain any releases within the plant environment inclusive of not only cyanide but all hazardous materials required for operations. Secondary containment will be sized to contain 110% of the volume of these systems. Should the spill



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				occur outside of the Process Plant building and the designed secondary containment, containment and clean-up of the material will be done as quickly as possible ensuring work safety, therefore there will be no event pond.
				Part B. As discussed above, there is no ponded water or material to constitute an event pond within regular operation. Should a spill occur outside of the Process Plant building, clean-up will be done promptly and will not allow wildlife or migratory bird access to the spill area. All water will be contained and controlled within the operations area. As above, no mitigation measures or follow-up programs will be required to restrict wildlife and migratory birds' access and use.
				Part C. As described above, there is no event pond with the current design of the Project. The carbon-in-leach ore processing and related pipelines within the Process Plant building. Any release of cyanide will be captured by the secondary containment. Should a spill occur outside of the Process Plant building, clean-up will be done promptly. Therefore, there is no additional risk to wildlife associated cyanide releases, and therefore no need to revise the evaluation of the consequence of a cyanide release. As part of the Round 2 response package, Treasury Metals have completed a comprehensive human health and ecological risk assessment (HHERA) for the Goliath Gold Project (2018 HHERA Report). This assessment looks at the risks to wildlife (including species at risk and migratory birds) and humans (including the consumption of wildlife that may have been exposed to soils and water within then operations area) associated with the Project. As described above, there will be no event pond at the Project. Therefore, the risk assessment does not specifically evaluate the event pond as it is not part of the Project design. The 2018 HHERA Report does assess potential risk to human and ecological receptors via pathways of exposure originating from the tailings storage facility (TSF) supernatant water, pit-lake surface water, and surface water in Blackwater Creek (and other surface water bodies) for all four Project phases and for three assessment scenarios.
				Agency Comment on Draft Response:
				Section 3.6.2 describes the CIL tanks as being located outside the mill building, on a concrete pad. Part A of IR # AA(2)-01 queries the use of an event pond to contain spills from the CIL area. The response to part A indicates that "the carbon-in-leach processing area is within the Process Plant and will be located on concrete surfaces to prevent seepage". Further, it explains that no event pond will be used. Instead, an unspecified secondary containment "will be included in the design for any cyanide storage as well as the carbon-in-leach ore processing area", and "will be utilized to contain any releases within the plant environment inclusive of not only cyanide but all hazardous materials required for operations."
				A) Specify whether the CIL tanks will be housed indoors or outdoors. If the description in section 3.6.2 is incorrect, revise that section of the EIS.
				B) Provide more detail on the secondary containment that will contain potential spills from the CIL storage and processing area.
				Specific Response to Agency Comments:
				A) The carbon-in-leach (CIL) processing area will be located outside, beside the Process Plant, with a protective shelter and crane gallery over top of the tanks. The following text superseded the third paragraph of Section 3.6.2 of



Unique Identifier	Agency IR #	Annex	Agency / Group / Stakeholder	Cross Reference / Comment / Information Request / Response
				the revised EIS (April 2018), and has been modified to remove ambiguity regarding the location of the CIL processing tanks, as well as to remove reference to the event pond. These are the only changes made to Section 3.6.2. The CIL tanks will be located outside, with a protective shelter and crane gallery over top of the tanks. The gallery will allow for indoor maintenance and servicing of agitator gearboxes, intertank screens, carbon transfer pumps and the carbon sizing screen. The crane drop down bay will be at the mill building end with forklift access to the adjacent workshop. The gallery enclosure will have ridge ventilation for fume exhaust. The CIL tank 1 will be the northernmost tank and will be pump fed. A space allowance for up to two additional CIL tanks is provided. Containment of CIL area spillage will be achieved via a concrete containment bund that will provide storage (spill) capacity equivalent to 110% of the largest tank in the system, together with containment provision for any piping that drains back to the system. B) The secondary containment external to the CIL tanks, will consist of a combination of concrete pads and a containment bund, and will provide storage (spill) capacity equivalent to 110% of the largest tank in the system, together with containment provision for any piping that drains back to the system. The design is still preliminary in keeping with this stage of Project development. Detailed design of the secondary containment will be completed as
				part of the detailed design of the CIL process and operation and will be sized appropriately as part of the design. FINAL RESPONSE:
				Part A: Handling and storage of cyanide will be done as per the Cyanide Management Plan; where design and construction of unloading, storage, mixing and processing facilities are consistent with sound, accepted engineering practices, quality control and quality assurance procedures, spill prevention and spill containment measures. Unloading and storage areas will be located on concrete surfaces to prevent seepage to the subsurface. Secondary containment will be included in the design for any cyanide storage as well as the carbon-in-leach ore processing area. The carbon-in-leach (CIL) processing area will be located outside, beside the Process Plant, with a protective shelter and crane gallery over top of the tanks. The CIL tanks and will be located on concrete surfaces to prevent seepage, equipped with secondary containment. The secondary containment external to the CIL tanks, will consist of a combination of concrete pads and a containment bund, and will provide storage (spill) capacity equivalent to 110% of the largest tank in the system, together with containment provision for any piping that drains back to the system.
				The cyanide storage and mixing tanks, the carbon-in-leach ore processing and related pipelines will be constructed of, or coated with, materials compatible with cyanide and high pH conditions. Tanks and pipelines will be clearly identified as containing cyanide and the direction of flow will be indicated on pipelines.
				Systems and procedures will be in place to address potential recovery of released solution, remediation of any contaminated soil and possible failures of tanks as necessary to protect surface and ground water. A method to prevent overfilling of storage tanks other than direct observation and manual gauging rod will be used such as an automatic level indicator, high-level alarm or integrated tank and tanker valve-shutdown device. A written set of



Unique Identifier	Agency IR #	Annex	Agency / Group / Stakeholder	Cross Reference / Comment / Information Request / Response
				procedures designed to prevent and control exposures and releases during cyanide unloading, storage and mixing and the carbon-in-leach ore processing activities. These procedures may be in the form of an operating manual, standard operating procedures, checklists, signs, training documents or other written formats. Employees will also undergo specialized training in the handling of cyanide. Contingency procedures for responding to releases and worker exposure that may occur will be developed and will address the issues of worker safety, environmental exposure and emergency response and will be incorporated into the overall Emergency Response Plan.
				Given the location of the carbon-in-leach ore processing and related pipelines within the containment bund on concrete surfaces and ancillary area, it is extremely unlikely that any material would spill to natural environment as material would have to spill out of the designed and properly scoped secondary containment. Secondary containment systems will be utilized to contain any releases inclusive of not only cyanide but liquid hazardous materials required for operations. Secondary containment systems will be sized to contain 110% of the volume of the largest tank within the system, inclusive of any piping that drains back to the system. Should the spill occur outside of the Process Plant building, containment bund or the designed secondary containment, containment and clean-up of the material will be done as quickly as possible ensuring work safety. There will be no event pond.
				Part B. As discussed above, there is no ponded water or material to constitute an event pond within regular operation. Should a spill occur outside of the Process Plant building and containment bund, clean-up will be done promptly and will not allow wildlife or migratory bird access to the spill area. All water will be contained and controlled within the operations area. As above, no mitigation measures or follow-up programs will be required to restrict wildlife and migratory birds' access and use. The secondary containment external to the CIL tanks, will consist of a combination of concrete pads and a containment bund, and will provide storage (spill) capacity equivalent to 110% of the largest tank in the system, together with containment provision for any piping that drains back to the system. The design is still preliminary in keeping with this stage of Project development. Detailed design of the secondary containment will be completed as part of the detailed design of the CIL process and operation and will be sized appropriately as part of the design.
				Part C. As described above, there is no event pond with the current design of the Project. The carbon-in-leach ore processing and related pipelines will be located beside the Process Plant building within the containment bund. Any release of cyanide will be captured by the secondary containment. Should a spill occur outside of the Process Plant building or the containment bund, clean-up will be done promptly. Therefore, there is no additional risk to wildlife associated cyanide releases, and no need to revise the evaluation of the consequence of a cyanide release. As part of the Round 2 response package, Treasury Metals have completed a comprehensive human health and ecological risk assessment (HHERA) for the Goliath Gold Project (2018 HHERA Report). This assessment looks at the risks to wildlife (including species at risk and migratory birds) and humans (including the consumption of wildlife that may have been exposed to soils and water within then operations area) associated with the Project. As described above, there will be no event pond at the Project within normal operations. Therefore, the risk assessment does not



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				specifically evaluate the event pond as it is not part of the Project design. The 2018 HHERA Report does assess potential risk to human and ecological receptors via pathways of exposure originating from the tailings storage facility (TSF) supernatant water, pit-lake surface water, and surface water in Blackwater Creek (and other surface water bodies) for all four Project phases and for three assessment scenarios.



TMI_936-AA(2)-02.docx

Unique Identifier	Agency IR #	Annex	Agency / Group / Stakeholder		Cross Reference / Comment / Information Request / Response
TMI_936-AA(2)- 02	AA(2)-02	4	ANA	Reference to EIS Guidelines:	Part 2, Section 7.1.2
				Reference to EIS / Appendix	Section 4.3.2; Section 4.3.4
				Cross- reference to Round 1 IRs	TMI_872-WL(2)-03, TMI_860-AA(2)-01
				Context and F	Rationale:
				and IR responses. Narrows First Nati failure of the TSF	ed discrepancies in the proposed tailings storage facility (TSF) water quality within the revised EIS (IR#2, WL(2)- 03), with predicted cyanide concentrations ranging from 0.2025 to 50 mg/L. Grassy on noted concern with cyanide in the TSF, particularly in the impacts of a worst-case scenario on their nation and treaty rights. The predictions for downstream surface water quality following a are based on supernatant water quality within the TSF at the time of the accident.
					the concentration of cyanide used in the modeling prove inappropriate, the predictions of effects to nd human health may be underestimated.
					cy noted in AA(2)-01 that Section 4.3.4 of the revised EIS includes "Uncontrolled Cyanide tential accident and malfunction however does not discuss spillage from the carbon-in-leach (CIL) ea.
					that the proponent's emergency response plan does not include engagement and communication ligenous communities.
				Specific Ques	tion / Request for Information:
				A. Taking into consideration the response to IR# WL(2)-03 and AA(2)-01, revise as necessary the asset effects of a failure of the TSF on the environment due to the release of cyanide, including the following: - modeling of cyanide release	
					l environmental effects (including on surface water, fish and fish habitat, vegetation) o human health
					to Indigenous use of lands and resources, including to that of Grassy Narrows First Nation.
				B. Update the eme	ergency response plan to include measures to engage Indigenous communities in the event of an neasures should include a communication strategy to notify government and Indigenous groups.



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				Response:
				The reviewers are referred to Section 3 (Project Description) of the revised EIS (April 2018) for a fulsome description of the Project operations and process, as well as the qualities of effluent discharged from the process plant to the tailings storage facility (TSF). A description of these discharges are presented in Section 3.8.8 of the revised EIS (April 2018), and the cyanide treatment process is described in Section 3.8.7,
				Following the standard carbon-in-leach (CIL) process used to extract gold from the ore, the process water containing cyanide will be reused to the extent possible, and then treated using the INCO/SO ₂ cyanide destruction process (which is widely used in the mining industry) before being discharged to the TSF. Following the INCO/SO ₂ process, tailings directed to the TSF will meet the 1 mg/L total cyanide effluent discharge limit set out in the federal Metal Mining Effluent Regulations (MMER). The water covering the TSF will be recycled and used in the processing plant, and excess water that cannot be recycled will be treated in the effluent treatment plant and ultimately discharged to Blackwater Creek. There may be times when the INCO/SO ₂ process does not reach 100% efficiency or the INCO/SO ₂ process is temporarily not in operation, at such time the concentration of Weak Acid Dissociable (WAD) cyanide in the tailings going to the TSF could be in the range of 10 to 50 mg/L. These instances would only be temporary and would be diluted with the supernatant water in the TSF to where an average of <1 mg/L is still expected in the TSF. It is important to note that the TSF will never reach 50 mg/L. The value of 50 mg/L referred to by the reviewer is referring to periodic releases of effluent to the TSF, not the concentration that is expected within the entire TSF.
				Treasury Metals will strive to maintain an average target total cyanide concentration within the TSF of 1 mg/L over the long-term basis. In addition, contingency measures, such as hydrogen peroxide treatment to the TSF supernatant water, and incorporation of hydrogen peroxide into the effluent treatment process will be considered as part of the sewage Environmental Compliance Approval (ECA) process with the Ministry of the Environment, Conservation and Parks (MECP). By design, the cyanide treatment circuit will destroy cyanide to a level acceptable for direct discharge to the environment and reduce the environmental safety requirements placed on the TSF.
				For the TSF failure modelling presented both in Appendix GG and in Section 4.3.2 of the revised EIS, the concentration of cyanide in the TSF overflow is provided as 0.2025 mg/L. This value represents the concentration of free cyanide present in the TSF supernatant water, which corresponds with 1 mg/L of total cyanide in the TSF. Free cyanide was used in the TSF failure model as it is the form of cyanide that is bioavailable and known for its toxic effects on organisms, and is the form of cyanide directly comparable to the Provincial Water Quality Objectives (PWQO). It is noted that the value of 0.2025 mg/L was incorrectly footnoted in Section 4 of the revised EIS (April 2018) as being total cyanide (Tables 4.3.2.3-1 and 4.3.2.3-3).
				Part A: Based on the above discussion, the modelling of cyanide released during the highly unlikely event of a TSF failure does not need to be revised. The TSF overflow concentration of 0.2025 mg/L of free cyanide is consistent with a total cyanide concentration in the TSF of 1 mg/L, which is the target overall cyanide concentration for the TSF supernatant water identified by Treasury Metals. Free cyanide is also the correct for consideration as it is the form of cyanide that



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				is bioavailable, is known for its potential toxic effects on organisms, and is the form of cyanide directly comparable to the Provincial Water Quality Objectives (PWQO).
				The assessment of effects associated with a highly unlikely failure of the TSF presented in Section 4 of the revised EIS (April 2018), presents a conservative assessment of free cyanide concentrations in the environment that only considered constituent decrease in the water column by dilution. The modelling indicates that the free cyanide concentrations would only exceed the PWQO at 2 locations in Wabigoon Lake (see Tables 4.3.2.3-3 and 4.3.2.3-4 of the revised EIS). Christie's Island would have a maximum concentration of 0.0749 mg/L and would decrease to below the PWQO within one day. Bonny Bay would have a maximum concentration of 0.0103 mg/L and would decrease to below the PWQO within two days. While the concentrations are in predicted to exceed the PWQO, the PWQO represent the concentrations that protect against long-term chronic exposures. As described in the response to TMI_867-AM(2)-03, the predicted free cyanide concentrations are well below the U.S. EPA acute toxicity thresholds (LC ₅₀) of 0.3 mg/L obtained from the U.S. EPA ECOTOX database. Therefore, the maximum concentration of free cyanide modelled for the highly unlikely event of a TSF failure would not be fatal to fish, wildlife or humans.
				Part B.
				In the highly unlikely event of a TSF failure, emergency response and contingency procedures would include:
				Processing plant operations would be immediately shut down;
				The seepage reclaim system would be shut down;
				 The reclaim system would be re-routed to transfer water to the open pit for temporary storage if worker safety is not compromised;
				In the event of a pump failure, a temporary pump can be installed during repairs; and
				 In the event that water breaches the seepage collection system; the area would be cleaned up by removal and proper disposal of the potentially impacted material into the TSF.
				Following these measures during the highly unlikely failure of the TSF, Indigenous communities and government agencies would be contacted to advise them of the situation and to begin the process of developing a remediation plan. Each Indigenous community that was engaged with during the EA process would be notified in the highly unlikely event of a TSF failure and would be a part of the remediation strategy.
				Agency Comment on Draft Response
				None Received



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				FINAL RESPONSE
				Agency accepted Draft Response as Final.



TMI_937-AA(2)-03.docx

Unique Identifier	Agenc y IR #	Anne x	Agency / Group / Stakeholder	Cross Reference / Comment / Information Request / Response	
TMI_937-AA(2)- 03	AA(2)-03	4	Naotkamegwannin g First Nation	Reference to EIS Guidelines:	Part 2, Section 7.1.2
				Reference to EIS / Appendix	Section 4.3.2
				Cross- reference to Round 1 IRs	TMI_867-AM(2)-03
				Context and R	Rationale:
				The proponent's assessment of potential effects of a tailings storage facility (TSF) failure does not adequately describe contingency measures to avoid or mitigate effects due to a TSF failure to fish and fish habitat. This was queried in IR# AM(2)-03. However, the proponent's assessment also does not consider socio- economic effects from a TSF failure. Naotkamegwanning First Nation holds commercial fishing licenses in Wabigoon Lake, including the spawning habi in Thunder Creek, the fish sanctuary near Christie's Island and the important fishing location in Bonny Bay. A failure of the TSF could affect the fish and fish habitat, as well as the perception of the quality of the fish being harvested.	
				Specific Ques	tion / Request for Information:
					ocio-economic effects of a worst-case scenario tailings failure on the fisheries in the area (local mmercial license holder), including the effect on the perception of the fisheries industry both locally
				B. Describe how N input was address	Naotkamegwanning First Nation was involved in the assessment requested in part A, and how their ed.
				Response:	
				design of the tailin sound engineering Project. Designs w Guidelines (2007) Act, as applicable.	d in the response to TMI_867-AM(2)-03, Treasury Metals have incorporated contingencies into the gs storage facility (TSF) to avoid the potential for a failure to occur. The TSF will be designed using g principles and accepted standards to ensure protection of the environment during all phases of the vill be in accordance with the latest version of the Canadian Dam Association (CDA) Dam Safety, the MNRF Best Management Practices (2011) and the Provincial Lakes and Rivers Improvement. The TSF will be designed for operational and storm water management based on hydrological storical climatic data. Operational pond levels will be established and an allowance to hold the



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				volume of water resulting from the environmental design storm (EDS) will be developed. The spillway will be designed to route flows resulting from the IDF as prescribed by the hazard potential classification (HPC) of the dam. The embankment heights will also be designed with the required freeboard allowances, for normal and minimum freeboard, as prescribed by the guidelines listed above. The embankments will be designed with zoned earth fill raises and meet the standards set forth by the applicable guidelines. The embankments will be designed to be stable and meet the required minimum Factors of Safety (FOS) under the required conditions.
				A Dam Safety Management Plan will be developed and finalized prior to the start of the first dam construction on site. A further description of the Dam Safety Management plan is provided in Section 12.14 of the revised EIS, and will consist of the following:
				 At least daily visual inspection during operational processes of all embankments and berms, pipelines, pumps, culverts and spillways to identify any visible problems such as pipeline damage, blockage, embankment seepage, and slope instabilities.
				A more detailed inspection of these same facilities and others, will be conducted on a monthly basis to look for any less obvious signs of potential problems.
				During, when safe to do so, and following any high potential events and spring melt, a more detailed inspection will be conducted to ensure the integrity of the TSF and related structures.
				The facility will be inspected by a qualified geotechnical engineer on an annual basis (Dam Safety Inspection) to verify that the embankments are performing as designed. The inspections will likely be carried out during or shortly after the spring melt under snow free conditions. A full Dam Safety Review will also be completed at the prescribed time intervals, but most likely on a 5-year basis.
				Ground movement sensors will be install on the TSF to detect any early movement on embankments, berms and dams.
				• If any stability-related issues are identified during dam inspections or during other site reviews, an external qualified geotechnical engineer will be brought to site to assess the issue and provide guidance on the appropriate path forward including remedial actions if appropriate.
				The perimeter seepage collection ditches will be designed to contain the potential volume of water from seepage through the embankment and upstream runoff. All seepage will be collected and routed to a collection point to allow for pumping and return to the TSF containment area. The ditches will also be designed with sufficient freeboard to ensure that water overflows do not occur. The ditches will be lined with a low permeability material (such as geotextile) to ensure that seepage is contained within the ditch and that erosion damage does not occur.
				A compliance monitoring program will be developed, and included in the Dam Safety Management Plan, prior to construction to assess the performance of the TSF and associated seepage collection. Surface and groundwater monitoring programs will also be included and used to ensure that seepage is not impacting groundwater offsite.



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				conservative asses could be. The max 2018), and have b protection for long-As shown in Table long-term chronic Thunder Creek and the parameters we protective against noticeable effect of such short duration that, in the unlikely Creek and Bonny quality that would the fish targeted by	ssment of what the wa imum instantaneous of een replicated in Table -term chronic exposure 1, the absolute maxin protection) for nine (9) d five (5) constituents are only predicted to ex- long-term chronic export in exposures to elevate of event of a TSF failure Bay would be well belowersult from a highly un by the commercial fishe	ter quality at Christie's concentrations were present. Table 1 also lists test and the acute toxic num concentrations we constituents at Christi in Bonny Bay. As show ceed the PWQO for a course, it is unlikely they for higher trophic level do concentrations would be, the maximum concept the levels identified likely failure of the TSI ry in Wabigoon Lake.	s Island, the mouth of esented in Table 4.3.2 he corresponding PW bity values used by the ere only predicted to e eie's Island, four (4) corwn in Table 4.3.2.3-4 cut few days. As the PW eat relatively short-term rel species (e.g., walle lid result in changes in intrations at Christie Is as being acutely toxic F would not result in co	rised EIS (April 2018) Thunder Creek and Bo .3-3 of the revised EIS QO (the level that affor U.S. EPA. Exceed the PWQO (the estituents at the mouth of the revised EIS (April QO were selected to be excursions would hav eye and pike). It is unlike fish quality. Table 1 als land, the mouth of Thu et to fish. Therefore, the concentrations high eno	nny Bay c (April rds level for of l 2018), e e a ely that so shows inder water ugh to kill
				Parameter	Objectives (PWQO)	Mortality (3)	Christie's Island	Thunder Creek	Bonny
				Al	0.075	0.16	0.0734	0.0042	0.010
				Cd	0.0002	3.698	0.0004 (2)	0.0000	0.000
				Со	0.0006	3.4	0.0011	0.0001	0.000
				Cu	0.005	0.63	0.0241	0.0014	0.003
				Fe	0.3	2.25	0.1268	0.0072	0.017
				Pb	0.005	1.32	0.1127	0.0064	0.015
				Hg	0.0002	0.33	0.0047	0.0003	0.000
				Se	0.1	1	0.4347	0.0247	0.059
				Ag	0.0001	0.0081	0.0001	0.0000	0.000
				TI	0.0003	14	0.1402	0.0080	0.019
				U	0.005	6.2	0.0043	0.0002	0.000
				Cyanide (4)	0.005	0.3	0.0749	0.0043	0.010



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				Notes: (1) The maximum concentrations are as presented in Table 4.3.2.3-3 of the revised EIS (April 2018). (2) The results highlighted with grey shading indicates where the predicted maximum concentrations exceed the corresponding PWQO. The PWQ represent levels that provide protection against long-term chronic exposures. (3) The results highlighted with grey shading and bold-faced, italic type indicates where the predicted maximum concentrations exceed the U.S acute toxicity thresholds (LC50) from the U.S. EPA ECOTOX database. (4) Total cyanide
				As stated in the response to TMI_349-AC(1)-23 from the Round 1 information requests, Treasury Metals is committed to ongoing engagement with Aboriginal peoples throughout the life of the Project and will work with potentially affected stakeholders and Indigenous communities to develop a socio-economic monitoring and management plan. This socio-economic monitoring and management plan will be designed to address potential Project-related socio-economic effects identified through the environmental assessment process and/or at later stages of the Project. Monitoring of sales of commercial fishing licenses for Thunder Lake, Butler lake, Wabigoon Lake and other identified lakes may be included in the monitoring efforts of Project-related effects as an indicator of perception of water quality and contamination. This monitoring program would continue in the highly unlikely event of a catastrophic TSF failure to determine if socio-economic effects had occurred in the highly unlikely event of a TSF failure. Additionally, Treasury Metals will make the water quality and fish quality result from the fish and fish habitat follow-up
				program available for review as needed in order to maintain transparency with local stakeholders and Aboriginal peoples. With these commitments and mitigation measures in place along with the modelled potential effects to fish and fish habitat in the highly unlikely event of a TSF failure, it is Treasury Metals opinion that the bio-physical risk as well as the perception of risk will be diminished. However, Treasury Metals realizes that perception of risks are personal, and cannot be readily quantified. The perception, locally and regionally, of the quality of the fish being harvested in Wabigoon Lake will be tied to how information regarding the quality of the fish is communicated. For example, the commercial fishing licenses held by Naotkamegwanning First Nation in Wabigoon Lake currently have to deal with the Ministry of Environment, Conservation and Parks published fish consumption advisories for Wabigoon Lake, based on actual testing of the fish population. In contrast, this response describes how it is highly unlikely that there would be
				any actual effects on fish resulting from a highly unlikely TSF failure. B. Treasury Metals Based has been in contact with Naotkamegwanning First Nation since November of 2012. Communication with Naotkamegwanning First Nation has included sharing Project-related information, meeting scheduling, employment opportunities, business opportunities, and presentation of information regarding environmental impacts and effects due to the Project. Specific concerns raised by Naotkamegwanning First Nation regarding the Project include the following: • Effects of extreme weather; • Surface water quality and the effects on the fishery;



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				Groundwater quality; and
				Effects on the commercial fisheries in Wabigoon Lake and Thunder Lake, including potential impacts on the sale of fish due to public perception;
				As part of the process for responding to the Round 2 information requests, Treasury Metals had schedules technical meetings with Naotkamegwanning First Nation, Grand Council Treaty 3, and other member First Nations potentially affected by the Goliath Gold Project. These meetings, which were to have taken place on August 8 and 9, 2018 were postponed at the request of the First Nations and Grand Council Treaty 3. It was the intention of Treasury Metals to use those meetings, when all of the technical representatives were present from the First Nations, as an opportunity to discuss issues such as the actual and perceived impacts on subsistence, recreational and commercial fisheries. Treasury Metals continue to be committed to working with Naotkamegwanning First Nation to address te potential impacts to the commercial fishery on Wabigoon Lake.
				Additionally, Treasury Metals look forward to working with Naotkamegwanning First Nation in developing a follow-up monitoring program that will share information regarding the commercial fishing licenses held by Naotkamegwanning First Nation in order to develop baseline information that will allow for the evaluation of effects to those commercial fishing licenses due to actual changes in fish quality or abundance, or changes in the perception of the fishery for consumption.
				Agency Comment on Draft Response:
				B) Update the response with a reference to how TMI discussed this response with Naotkamegwanning First Nation and how their input was incorporated (or how a further attempt was made to do so).
				Specific Response to Agency Comment:
				It is important to note, that on July 17, 2018, Treasury Metals met in person with members of Naotkamegwanning First Nation, and during the meeting had specific discussion regarding the highly unlikely failure of the TSF including issues related to cyanide, TSF spillway, and TSF closure.
				The Agency has provided direction to Treasury Metals that Treasury Metals is to try and engage individual Indigenous communities with respect to proposed Round 2 responses that specifically affect individual communities prior to submitting the responses to the Agency. In following the Agency direction, Treasury Metals had scheduled technical meetings on August 8 and 9, 2018 with Naotkamegwanning First Nation, Grand Council Treaty 3, and other member First Nations potentially affected by the Goliath Gold Project. It was the intention of Treasury Metals to use those meetings, when all of the technical representatives were present from the First Nations, as an opportunity to discuss the views and values of the community with to actual and perceived impacts on subsistence, recreational and
				commercial fisheries. These meetings, were cancelled at the request of the First Nations and Grand Council Treaty 3,



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				on the basis that the Indigenous communities had not received the Draft Round 2 Responses nor had a funding agreement been finalized. Further, Treasury Metals prepared a series of community presentations based on dialogue from Naotkamegwanning First Nation, Grand Council Treaty 3, and other member First Nations potentially affected by the Goliath Gold Project. These presentations were shared with the communities on July 25, 2018. These presentations were developed to provide an avenue for specific discussion and concerns to be voiced on a number of topics. These topics include a specific presentation to speak to waste management and the tailings storage facility. No indications were received from the community indicating an interest in a community session to explore this, or any of the materials. On September 11, 2018 both Treasury Metals and Naotkamegwanning First Nation, agreed to meet on one of: October 9, 12, 25, or 26, 2018 to discuss all Draft Round 2 responses including TMI_937-AA(2)-03 and how Naotkamegwanning First Nation's input could be further incorporated. Treasury Metals provided the Draft Round 2 responses to Naotkamegwanning First Nation (and all communities) on September 21, 2018, in addition on September 25, 2018 follow up correspondence indicating the documentation availability and request for capacity funding was provided to Naotkamegwanning First Nation. A funding agreement between Treasury Metals and Naotkamegwanning First Nation to provide technical support was agreed to on October 11, 2018. Following the confirmation of Treasury Metals agreement to fund Naotkamegwanning First Nation, efforts by Treasury Metals to confirm meeting dates and venues for the one of the meeting dates agreed to on September 11, 2018 (specific correspondence dated October 15, 18, 22, and 29, November 1 and 5) were unsuccessful and the planned technical meetings to discuss the Draft Round 2 Responses have not yet occurred. A joint teleconference with Treasury Metals, the Agency, Asubpeeschoseweewagong Netum A
				Part A. As detailed in the response to TMI_867-AM(2)-03, Treasury Metals have incorporated contingencies into the design of the tailings storage facility (TSF) to avoid the potential for a failure to occur. The TSF will be designed using sound engineering principles and accepted standards to ensure protection of the environment during all phases of the Project. Designs will be in accordance with the latest version of the Canadian Dam Association (CDA) Dam Safety Guidelines (2013 Edition), the MNRF Best Management Practices (2011) and the Provincial Lakes and Rivers



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				Improvement Act, as applicable. The TSF will be designed for operational and storm water management based on hydrological modelling using historical climatic data. Operational pond levels will be established and an allowance to hold the volume of water resulting from the environmental design storm (EDS) will be developed. The spillway will be designed to route flows resulting from the IDF as prescribed by the hazard potential classification (HPC) of the dam. The embankment heights will also be designed with the required freeboard allowances, for normal and minimum freeboard, as prescribed by the guidelines listed above. The embankments will be designed with zoned earth fill raises and meet the standards set forth by the applicable guidelines. The embankments will be designed to be stable and meet the required minimum Factors of Safety (FOS) under the required conditions.
				A Dam Safety Management Plan will be developed and finalized prior to the start of the first dam construction on site. A further description of the Dam Safety Management plan is provided in Section 12.14 of the revised EIS, and will consist of the following:
				 At least daily visual inspection during operational processes of all embankments and berms, pipelines, pumps, culverts and spillways to identify any visible problems such as pipeline damage, blockage, embankment seepage, and slope instabilities.
				 A more detailed inspection of these same facilities and others, will be conducted on a monthly basis to look for any less obvious signs of potential problems.
				 During, when safe to do so, and following any high potential events and spring melt, a more detailed inspection will be conducted to ensure the integrity of the TSF and related structures.
				 The facility will be inspected by a qualified geotechnical engineer on an annual basis (Dam Safety Inspection) to verify that the embankments are performing as designed. The inspections will likely be carried out during or shortly after the spring melt under snow free conditions. A full Dam Safety Review will also be completed at the prescribed time intervals, but most likely on a 5-year basis.
				 Ground movement sensors will be install on the TSF to detect any early movement on embankments, berms and dams.
				 If any stability-related issues are identified during dam inspections or during other site reviews, an external qualified geotechnical engineer will be brought to site to assess the issue and provide guidance on the appropriate path forward including remedial actions if appropriate.
				The perimeter seepage collection ditches will be designed to contain the potential volume of water from seepage through the embankment and upstream runoff. All seepage will be collected and routed to a collection point to allow for pumping and return to the TSF containment area. The ditches will also be designed with sufficient freeboard to ensure that water overflows do not occur. The ditches will be lined with a low permeability material (such as geotextile) to ensure that seepage is contained within the ditch and that erosion damage does not occur.
				A compliance monitoring program will be developed, and included in the Dam Safety Management Plan, prior to construction to assess the performance of the TSF and associated seepage collection. Surface and groundwater monitoring programs will also be included and used to ensure that seepage is not impacting groundwater offsite.



In the highly unlikely event that a TSF failure were to occur, Section 4.3.2.3 of conservative assessment of what the water quality at Christie's Island, the mo could be. The maximum instantaneous concentrations were presented in Table 2018), and have been replicated in Table 1. Table 1 also lists the corresponding protection for long-term chronic exposures) and the acute toxicity values used As shown in Table 1, the absolute maximum concentrations were only predicted long-term chronic protection) for nine (9) constituents at Christie's Island, four Thunder Creek and five (5) constituents in Bonny Bay. As shown in Table 4.3. the parameters were only predicted to exceed the PWQO for a few days. As the parameters were only predicted to exceed the PWQO for a few days. As the parameters were only predicted to exceed the PWQO for a few days. As the parameters were only predicted to exceed the PWQO for a few days. As the parameters were only predicted to exceed the PWQO for a few days. As the parameter were only predicted to exceed the PWQO for a few days. As the parameter were only predicted to exceed the PWQO for a few days. As the parameter were only predicted to exceed the PWQO for a few days. As the parameter on the parameter on the parameter of the TSF failure, the maximum concentrations at Christie's land that, in the unlikely event of a TSF failure, the maximum concentrations at Christie's land that would result from a highly unlikely failure of the TSF would not result the fish targeted by the commercial fishery in Wabigoon Lake. Table 1: Maximum Predicted Concentrations in Wabigoon lake in the H Provincial Water Quality Objectives (PWQO) All 0.075 0.16 0.0734	outh of Thunder Cree e 4.3.2.3-3 of the reverse by the U.S. EPA. Bed to exceed the PW (4) constituents at the 2.3-4 of the revised le PWQO were selent-term excursions were, walleye and pike). Ges in fish quality. To istie Island, the mouly toxic to fish. There	ok and Bonny Bay vised EIS (April that affords VQO (the level for the mouth of EIS (April 2018), coted to be vould have a lit is unlikely that fable 1 also shows with of Thunder efore, the water
Parameter Provincial Water Quality Acute Christie's Objectives (PWQO) Mortality (3) Island		
Parameter Provincial Water Quality Acute Christie's Objectives Mortality (3) Island (PWQO)	ahly Unlikely Even	it of a TSF Failure
Al 0.075 0.16 0.0734	Thunder Creek	Bonny Bay
,	0.0042	0.0101
Cd 0.0002 3.698 0.0004 (2)	0.0000	0.0001
Co 0.0006 3.4 0.0011	0.0001	0.0002
Cu 0.005 0.63 0.0241	0.0014	0.0033
Fe 0.3 2.25 0.1268	0.0072	0.0175
Pb 0.005 1.32 0.1127	0.0064	0.0155
Hg 0.0002 0.33 0.0047	0.0003	0.0006
Se 0.1 1 0.4347	0.0247	0.0599
Ag 0.0001 0.0081 0.0001	0.0000	0.0000
TI 0.0003 14 0.1402	0.0080	0.0193
U 0.005 6.2 0.0043		0.0006
Cyanide (4) 0.005 0.3 0.0749	0.0002 0.0043	0.0103



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				 The maximum concentrations are as presented in Table 4.3.2.3-3 of the revised EIS (April 2018). The results highlighted with grey shading indicates where the predicted maximum concentrations exceed the corresponding PWQO. The PWQo represent levels that provide protection against long-term chronic exposures. The results highlighted with blue shading and bold-faced, italic type indicates where the predicted maximum concentrations exceed the U.S. EPA acute toxicity thresholds (LC50) from the U.S. EPA ECOTOX database. There were no maximum predictions in excess of the acute toxicity data for the protection of freshwater aquatic life. Total cyanide
				As stated in the response to TMI_349-AC(1)-23 from the Round 1 information requests, Treasury Metals is committed to ongoing engagement with Aboriginal peoples throughout the life of the Project and will work with potentially affected stakeholders and Indigenous communities to develop a socio-economic monitoring and management plan. This socio-economic monitoring and management plan will be designed to address potential Project-related socio-economic effects identified through the environmental assessment process and/or at later stages of the Project. Monitoring of sales of commercial fishing licenses for Thunder Lake, Butler lake, Wabigoon Lake and other identified lakes may be included in the monitoring efforts of Project-related effects as an indicator of perception of water quality and contamination. This monitoring program would continue in the highly unlikely event of a catastrophic TSF failure to determine if socio-economic effects had occurred in the highly unlikely event of a TSF failure. Additionally, Treasury Metals will make the water quality and fish quality result from the fish and fish habitat follow-up program available for review as needed in order to maintain transparency with local stakeholders and Aboriginal peoples. With these commitments and mitigation measures in place along with the modelled potential effects to fish and fish
				habitat in the highly unlikely event of a TSF failure, it is Treasury Metals opinion that the bio-physical risk as well as the perception of risk will be diminished. However, Treasury Metals realizes that perception of risks is personal and qualitative, and cannot be readily quantified. The perception, locally and regionally, of the quality of the fish being harvested in Wabigoon Lake will be tied to how information regarding the quality of the fish is communicated. For example, the number of commercial fishing licenses held by Naotkamegwanning First Nation in Wabigoon Lake currently are related to the Ministry of Environment, Conservation and Parks published fish consumption advisories for Wabigoon Lake, and are based on actual testing of the fish population. In contrast, this response describes how it is highly unlikely that there would be any actual effects on fish resulting from a highly unlikely TSF failure with the controls that will be put in place.
				Part B. Treasury Metals Based has been in contact with Naotkamegwanning First Nation since November of 2012. Communication with Naotkamegwanning First Nation has included sharing Project-related information, meeting scheduling, employment opportunities, business opportunities, and presentation of information regarding environmental impacts and effects due to the Project. Specific concerns raised by Naotkamegwanning First Nation regarding the Project include the following:



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				Effects of extreme weather;
				Surface water quality and the effects on the fishery;
				Groundwater quality; and
				 Effects on the commercial fisheries in Wabigoon Lake and Thunder Lake, including potential impacts on the sale of fish due to public perception;
				It is important to note, that on July 17, 2018, Treasury Metals met in person with members of Naotkamegwanning First Nation, and during the meeting had specific discussion regarding the highly unlikely failure of the TSF including issues related to cyanide, TSF spillway, and TSF closure.
				The Agency has provided direction to Treasury Metals that Treasury Metals is to try and engage individual Indigenous communities with respect to proposed Round 2 responses that specifically affect individual communities prior to submitting the responses to the Agency. In following the Agency direction, Treasury Metals had scheduled technical meetings on August 8 and 9, 2018 with Naotkamegwanning First Nation, Grand Council Treaty 3, and other member First Nations potentially affected by the Goliath Gold Project. It was the intention of Treasury Metals to use those meetings, when all of the technical representatives were present from the First Nations, as an opportunity to discuss the views and values of the community with to actual and perceived impacts on subsistence, recreational and commercial fisheries. These meetings, were cancelled at the request of the First Nations and Grand Council Treaty 3, on the basis that the Indigenous communities had not received the Draft Round 2 Responses nor had a funding agreement been finalized.
				Further, Treasury Metals prepared a series of community presentations based on dialogue from Naotkamegwanning First Nation, Grand Council Treaty 3, and other member First Nations potentially affected by the Goliath Gold Project. These presentations were shared with the communities on July 25, 2018. These presentations were developed to provide an avenue for specific discussion and concerns to be voiced on a number of topics. These topics include a specific presentation to speak to waste management and the tailings storage facility. No indications were received from the community indicating an interest in a community session to explore this, or any of the materials.
				On September 11, 2018 both Treasury Metals and Naotkamegwanning First Nation, agreed to meet on one of: October 9, 12, 25, or 26, 2018 to discuss all Draft Round 2 responses including TMI_937-AA(2)-03 and how Naotkamegwanning First Nation's input could be further incorporated.
				Treasury Metals provided the Draft Round 2 responses to Naotkamegwanning First Nation (and all communities) on September 21, 2018, in addition on September 25, 2018 follow up correspondence indicating the documentation availability and request for capacity funding was provided to Naotkamegwanning First Nation. A funding agreement between Treasury Metals and Naotkamegwanning First Nation to provide technical support was agreed to on October 11, 2018.
				Following the confirmation of Treasury Metals agreement to fund Naotkamegwanning First Nation, efforts by Treasury Metals to confirm meeting dates and venues for the one of the meeting dates agreed to on September 11, 2018



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				(specific correspondence dated October 15, 18, 22, and 29, November 1 and 5) were unsuccessful and the planned technical meetings to discuss the Draft Round 2 Responses have not yet occurred. A joint teleconference with Treasury Metals, the Agency, Asubpeeschoseweewagong Netum Anishinabek and Naotkamegwanning First Nation was held on November 8, 2018, and an agreement to hold a community technical meeting during the week of January 14, 2019 was reached.
				Although Treasury Metals continues to work with the Agency on addressing the Agency feedback on the Draft Round 2 responses by December 2018, this does not preclude Naotkamegwanning First Nation or any other Indigenous community or stakeholder from providing feedback and comment on the Round 2 information request responses.

